H.H. & D.E. Drew Limited

Hurn Court Farm Quarry

Hurn, Dorset

Application for Waste Recovery Permit
Site Restoration Using Imported Inert Infill

Hydrogeological Risk Assessment

Version 3
27th May 2020

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BCL CONSULTANT HYDROGEOLOGISTS' EXPERIENCE & QUALIFICATIONS

BCL is an independent consultancy specialising in all aspects of hydrogeology and hydrology as they relate to minerals extraction, waste disposal, water supply and related industries.

Peter Simpson (the author of this report) holds an honours degree (B.Sc. Environmental Science) conferred by The University of Birmingham in 2005 and a Masters Degree (M.Sc. Hydrogeology), also conferred by The University of Birmingham, in 2011.

BCL has provided specialist services, advice and reporting to the extractive, waste and related industries since 1990. During this time a collective 100+ years of experienced has been earned from involvement with wide variety of assignments. BCL's work has included:

- Installation and management of information collection systems;
- Data interpretation;
- Conceptualisation of hydrogeological systems;
- Identification of potential impacts;
- Formulation of mitigation measures;
- Management and undertaking of operational impact monitoring and impact assessment;
- Review and auditing of contingency mitigation schemes;

1 INTRODUCTION

1.1 Background

1.1.1 In July 2016, a planning application (the Application) was submitted to Dorset County Council (DCC) for the lateral extension of Hurn Court Farm Quarry, Hurn, Dorset (the Site), as operated by H.H & D.E. Drew Limited (HHDED).

1.1.2 The Application sought consent for the extension of existing quarry operations (the Western Extension) over an area of 15.7 hectares (ha) to release some 700,000 tonnes of additional mineral reserve (sands and gravels) over a period of 10 years. The Application additionally made provision for the extension of the current planning permission for the operation of the existing mineral processing plant by a period of 12 years.

1.1.3 The Application further detailed the proposed restoration of the Site, being facilitated through the progressive importation of inert infill materials to return the Site to approximately pre-development ground elevations. This element of the Application requires application for an Environmental Permit (EP), waste recovery, as granted by the Environment Agency (EA), in support of which a Hydrogeological Risk Assessment (HRA) is required to be submitted.

1.1.4 Planning Permission (The Permission) for the Western Extension was granted by Dorset County Council (DCC), now Dorset Council (DC) in 2016 (ref: 8/16/2011/DCC). Mineral extraction operations have since commenced (presently within Phase 1).

1.1.5 BCL Consultant Hydrogeologists Limited (BCL) have thus been appointed by Land and Mineral Management (LMM), agents of HHED, to undertake an HRA for the restoration of the Western Extension as consented under the Permission, in support of the required waste recovery EP application.

1.1.6 The Permission however requires at Condition 3 a limit upon the permitted extraction depth to 7 metres above Ordnance Datum (maOD), and at Condition 13 preclusion of sub-watertable mineral extraction.

1.1.7 Since grant of the Permission, additional hydrometric monitoring data collection and further assessments undertaken on behalf of HHDED have better characterised the hydrogeological setting of the Site. Condition 3 has severely limited the viability of the Western Extension as working depths (and thus mineral production volumes) are reduced relative to that originally envisaged, by permitted extraction depths (these being constrained by groundwater elevations).

1.1.8 A Section 73 Planning Application (The Deepening Application) was thus submitted by HHDED in 2020, seeking to remove the depth restriction to increase working depths (facilitated by dewatering), to release an additional 305,167 tonnes of aggregate over a period of 2-4 years within the 15.7 ha footprint of the Western Extension (The Proposed Development). This was accompanied by an associated extension of time application to bring into agreement the permitted duration of the Western Extension and associated processing plant.

1.1.9 Though planning permission for the Proposed Development is yet to be granted, in such event, application for a waste recovery EP (to include submission of an HRA) specific to the Proposed Development will also be required.

1.1.10 BCL have thus been instructed by LMM to extend the scope of the HRA to additionally encompass the restoration requirements of the Proposed Development (this principally differing from that consented by the Permission in terms of infill thickness / volume and in the elevation of infilling relative to groundwaters).

1.2 Aim of HRA

1.2.1 This HRA report presents the findings of a hydrological and hydrogeological Baseline Study and quantitative Risk Assessment that is intended to form the basis of the EP Application, at which time it should be read alongside the Environmental Setting and Site Design (ESSD) report[1].

1.2.2 Quantitative Risk Assessment has been undertaken for both the restoration of the Site as consented by the Permission (The HRA1 Recovery Operation), and the proposed restoration of the Site as applied for under the Deepening Application (The HRA2 Recovery Operation). This approach is to be undertaken to achieve the following aims:

- To assess the suitability of the Site for receipt of infill materials under both HRA1 and HRA2.
- To present information suitable for the issue of 1 no. recovery EP only, this being for either HRA1 or HRA2, selection of which will principally be determined both by the findings of this assessment, and the outcome / conditions associated with issue of the Deepening Application / associated permit / license applications required for its realisation (thus ensuring satisfactory restoration of the Site).

1.3 HRA Approach and Outcomes

1.1 The collection and interpretation of baseline data, which has drawn upon the findings of previous assessment[2], has facilitated the formulation of a Conceptual Hydrogeological Model of the Site and its environs (the CHM).

1.2 The CHM describes the nature of, and interactions between, the groundwater and surface water systems operating at and around the Site.

1.3 The CHM has been combined with the design of the Recovery Operation in the development of a Conceptual Site Model (CSM). This has been undertaken separately for both the HRA1 and HRA2 Recovery Operations.

1.4 The CSM has been applied within a detailed quantitative HRA to assess the impact of the Recovery Operation upon the water environment. This has been undertaken separately for both the HRA1 and HRA2 Recovery Operations.

1 BCL Consultant Hydrogeologists Limited, 'Hurn Court Farm Quarry, Environmental Setting and Site Design', May 2020, S/HHDED/HC/ESSD20/02

2 BCL Consultant Hydrogeologists Limited, 'Hurn Quarry, Western Extension, Environmental Statement, Addendum to Chapter 10, Hydrology and Hydrogeology', Nov 2019, PSv2.0.

1.5 The primary tool used to inform HRA with regards to the HRA1 Recovery Operation has been Golder Associates' Landsim modelling software.

1.6 The primary tool used to inform HRA with regards to the HRA2 Recovery Operation has been Environmental Simulations International's RAM 3 modelling software.

1.7 The results of HRA have informed the development of a groundwater monitoring programme to run concurrent with, and following completion of, the Recovery Operation.

1.8 The monitoring programme has been designed to:

- Determine the effectiveness of measures adopted for the protection of the water environment, and;
- Inform modification of those measures over time as appropriate.

1.9 This has included the derivation of groundwater quality Control Levels and Compliance Limits for incorporation into the Permit where required.

1.4 National Planning Policy & Technical Guidance

1.4.1 Where appropriate, the design of the Recovery Operation, methodology and scope of site-specific data-collection, formulation of the Conceptual Model, approach to impact assessment and selection of calculation methodologies have been informed by prevailing national guidance and industry standard procedures, including:

- "National Planning Policy Framework" (NPPF), Department for Communities and Local Government (DCLG), February 2019.
- " Planning Practice Guidance to the National Planning Policy Framework" (PPG: DCLG, March 2014.
- "Flood Risk and Coastal Change, Planning Practice Guidance" (NPPG), DCLG / Department for the Environment Food and Rural Affairs (DEFRA), 6th March 2014.
- "Development and Flood Risk: A Practice Guide Companion to PPS25" (PPS25pg), DCLG, February 2009.
- "Groundwater Protection Position Statements", EA, March 2018.
- Landfill Developments: Groundwater Risk Assessment for Leachate (https://www.gov.uk/guidance/landfill-developments-groundwater-risk-assessment-for-leachate).
- "Additional guidance for hydrogeological risk assessments for landfills and the derivation of groundwater control levels and compliance limits", EA Horizontal Guidance Note H1 – Annex J3, Version 2.1, December 2011[3].
- "Hydrogeological Risk Assessments for Landfills and the Derivation of Groundwater Control and Trigger Levels" (LFTGN01), EA, March 2003[4].

3 Now withdrawn; referenced for specific technical guidance only.

4 No longer referenced by current guidance. Referred to here for details of specific technical methodologies where current guidance provides no alternatives.

- "Guidance on Monitoring of Landfill Leachate, Groundwater and Surface Water" (LFTGN02), EA, February 2003[4].
- "Techniques for the Interpretation of Landfill Monitoring Data" (Guidance Notes), EA Final technical report P1-471, 2002.

1.5 Data Sources

1.5.1 Published and site specific data sources, together with assessment and calculation methodologies referenced by HRA are listed at *appendix 1*.

1.6 Report Structure

1.6.1 Baseline characterisation of the topography, geology, hydrology and hydrogeology of the Site area, is presented at *section 2*, concluding with a CHM of the extant water environment, as presented at *section 3*.

1.6.2 An account of the HRA1 Recovery Operation design, including working methods, depths, and elevations to apply during infilling and for the support of the proposed restoration, is given at *section 4*.

1.6.3 The Conceptual Site Model (CSM), derived in accordance with the Source, Pathway, Receptor (SPR) risk assessment methodology, for the HRA1 Recovery Operation is presented at *section 5*.

1.6.4 Parameter selection, numerical assessment results and sensitivity analysis are described and discussed for the HRA1 Recovery Operation at *section 6*.

1.6.5 An account of the HRA2 Recovery Operation design, including working methods, depths, and elevations to apply during infilling and for the support of the proposed restoration, is given at *section 7*.

1.6.6 The Conceptual Site Model (CSM), derived in accordance with the Source, Pathway, Receptor (SPR) risk assessment methodology, for the HRA2 Recovery Operation is presented at *section 8*.

1.6.7 Parameter selection, numerical assessment results and sensitivity analysis are described and discussed for the HRA2 Recovery Operation at *section 9*.

1.6.8 Control and compliance values are discussed and derived at *section 10*, together with specifications for frequency and scope of groundwater quality monitoring and contingency actions to apply concurrent with the operation and restoration of the Recovery Operation.

1.6.9 Report conclusions are presented at *section 11*.

2 THE SITE

2.1 Site Location and Study Area

2.1.1 The Site location is shown at *figure 1*.

2.1.2 The Site is located to the immediate south of the B3073 Parley Lane, some 1km to the west of the Village of Hurn, 3km to the east of the village of West Parley, in the county of Dorset (centred on approximately National Grid Reference, NGR, ^{4}11500, ^{0}97200).

2.1.3 Baseline data collection has focused on an area extending approximately 3km from the boundaries of the Proposed Development, encompassing an area of some 3,300 hectares (ha) which includes parts of the counties of Dorset, Hampshire and the Unitary Authority of Bournemouth (the Study Area).

2.2 Land Use and Topography

2.2.1 The Study Area is semi-rural, with numerous towns and small villages situated in close proximity, set within a broader landscape of pastoral and arable agriculture, forestry and heathland. This gives way to greater urbanisation to the south upon the coastline of the Solent (incorporating Bournemouth, Boscombe and Christchurch).

2.2.2 Further landuse is present to the north of the Site in the form of Bournemouth Airport and to the west in the form of the Adventure Wonderland theme park and Bournemouth Aviation Museum. A substantial golf course (Parley Golf Centre) and a number of solar farms are also present to the west.

2.2.3 The topography of the Study Area is dominated by the presence of major watercourses in the form of the River Stour, Moors River and River Avon. The surrounding lands generally fall to the valleys of these features, with a generally southwards fall in ground elevations prevailing across the area.

2.2.4 A series of small hills is observed to the east of the Site, forming a north-south oriented ridgeline separating the Moors River / Stour and Avon valleys, with maximum elevation 55 metres above Ordnance Datum (maOD) at Ramsdown Plantation (1.8km to the east of the Proposed Development).

2.2.5 The Site is situated upon the southern fringe of a plateau separating the valleys of the River Stour and Moors River which holds an elevation of some 10maOD at Bournemouth Airport and within the Proposed Development itself. Ground elevations across the Site fall at slight gradient to the southeast to the confluence of the River Stour and Moors River, at approximately 4maOD (1.8km to the southeast of the Proposed Development).

2.3 Site Operations and Water Management

2.3.1 The Existing Site

Site Layout and Composition

2.3.1.1 The Site comprises 3 no. principal areas, as at *figure 2*:

- An area of former and restored mineral workings located between the B3073, Mill Lane and Hurn Court Lane (the Existing Site).

- An area used for the processing, sale and stockpiling of aggregate, which also houses the Site administrative and maintenance facilities, as located upon the north western limit of the Existing Site (the Plant Area).
- The Western Extension area, being located to the west of Hurn Court Lane.

Current Site Operations

2.3.1.2 Mineral extraction operations, as consented by the Permission, are presently being undertaken within the initial phase of the Western Extension, this having commenced with the stripping and storage of soils and overburden, and subsequent extraction of mineral to a level not below 7maOD, with the base of working being maintained above peak groundwater elevations.

2.3.1.3 The economic mineral of the Site is mechanically excavated, with the extracted material being transported to the Plant Area via dumper for processing and sale.

2.3.1.4 Excavated mineral is processed within the Plant Area, as facilitated by the operation of a mineral washing plant. The Permit application also seeks to allow inert recycling including washing to form recycled aggregate at the plant site. A concrete batching plant is also operated in this area.

Site Water Management

2.3.1.5 The mineral workings within the Western Extension form a closed depression within which all incident rainfall / runoff is captured and contained prior to its dissipation to groundwater (through the exposed, unsaturated mineral within the base of works).

2.3.1.6 The Plant Area concrete batching plant and washing plant are supplied by licensed abstraction from an adjacent borehole, waters from which are used in mineral washing, concrete production and the washing out of mixers (License B, *table 8*).

2.3.2 The Proposed Development

Overview

2.3.2.1 It is proposed that the Western Extension be deepened within its existing footprint, allowing the extraction of mineral from within the Aquifer saturated zone, with a safe and efficient working environment being facilitated by dewatering operations.

2.3.2.2 The deepening of the Site is intended to allow the extraction of the full thickness of the economic mineral of the Site (River Terrace Deposits, as at *section 2.5*). This is expected to result in a basal elevation of 3maOD to 7maOD, falling westwards.

2.3.2.3 Mineral extraction will be undertaken in line with current Site practices, being processed within the existing plant (being entirely unchanged from that already permitted).

Phased Development

2.3.2.4 The Site is to be worked sequentially in 5 discrete phases, as at *figure 2*.

2.3.2.5 The working of each phase will commence with the stripping of soils / overburdens, and their storage in perimeter bunds, this being followed by mineral extraction works.

2.3.2.6 Mineral extraction within Phases 1 and 2 will initially be completed as currently permitted (to a minimum basal elevation of 7maOD). This will be followed by their deepening to the base of working, excepting a 125m standoff from the listed building of Dales House, as present upon the southern Site boundary.

2.3.2.7 Phases 2, 4 and 5 will be directly excavated to the base of workings across their full extent.

2.3.2.8 Restoration works within each phase will follow on progressively from mineral extraction, commencing during the working of each phase, and being completed during mineral extraction within the subsequent phase.

Proposed Water Management

2.3.2.9 The overall approach to development water management is illustrated at *figure 3.*

2.3.2.10 Each phase will form a closed depression within which all incident rainfall / runoff will be captured and contained. Within the initial stages of Phase 1 & 2, such waters will be allowed to dissipate diffusely to groundwater within the base of workings (as an unsaturated thickness of Aquifer material will underlie these phases in their initial stages).

2.3.2.11 Within the latter stages of Phases 1 & 2, and within Phases 3, 4 & 5, when extraction is to progress beneath the elevation of groundwaters, a small sump will be established within the base of the active phase (being located as required for operational efficacy, presented locations in figures are illustrative only). Incident rainfall / runoff and groundwater ingress will run diffusely overland to the sump, from which the Site will be dewatered (abstraction via electro-submersible pump).

2.3.2.12 Abstracted waters will be pumped to a settlement lagoon (the Western Extension Lagoon, WEL), which is to be established upon the southern limit of Phase 2 (within the 125m standoff from Dales House and thus elevated above groundwater elevations).

2.3.2.13 Discharge from the WEL will be made southwards under gravity to the existing ditch network next to Dales Lane, ultimately draining to the Southern Stream via a network of existing ditches.

2.3.2.14 The site waterbodies will be operated in a manner so as to preclude their forming an attractant to birds (due to the proximity of the adjacent airport).

2.3.3 Restoration Proposals

Site Restoration

2.3.3.1 The Site is to be restored to original ground elevations and cover via the importation and placement of inert infill materials, and re-placement of stripped and stored overburdens and soils. The pre-development agricultural landuse will be reinstated (as at *figure 4*).

2.3.3.2 Restoration of the Proposed Development will mirror that consented within the Permission in all areas excepting the depth of infill (and associated volumes of material, and duration of operations required).

2.3.3.3 Restoration works within each phase will follow on progressively from mineral extraction, commencing during the working of each phase, and being completed during mineral extraction within the subsequent phase.

Restoration Water Management

2.3.3.4 Restoration water management within the Western Extension will be unchanged from that consented by the Permission, being in line with the recommendations presented within BCL's approved 2018 Surface Water Management Scheme[5], the relevant sections of which are included at *appendix 2*.

2.3.3.5 In summary, this incorporates perimeter drains falling to an attenuation pond at the southern limit of Phase 1, from which discharge under gravity will be made to surface waters at rates / volumes restricted to within those observed prior to development.

2.4 Ecological Designations

2.4.1 Statutorily Protected Sites of Ecological Importance

2.4.1.1 The locations of statutorily protected site within the Study Area are shown at *figure 5;* outline details for which are given below at *table 1*.

Table 1 Statutorily Protected Sites

Site Name	Distance* from Proposed Development (km)	Designation	Summary Description
Moors River System	0.75km E	SSSI	Lowland chalk stream supporting aquatic flora, fauna and riparian vegetation.
Town Common	1.1km E	SSSI, RAMSAR, SAC, SPA	Dry and wet (flush supported) lowland heath
Hurn Common	1.3km N	SSSI, SAC, SPA	Dry heathland and bog
Parley Common	1.7km NW	SSSI, RAMSAR, SAC, SPA	Dry and wet heath with bog
St Leonards & St Ives Heaths	2.1km NE	SSSI, RAMSAR, SAC, SPA	Acid grasslands, dry and wet heath and mire
Avon Valley	2.1km E	SSSI, RAMSAR, SPA	Lowland river flood plain and associated habitats and features
River Avon	2.7km E	SSSI, SAC	Lowland chalk river and associated habitats

*-at shortest distance from the Proposed Development

2.4.1.2 There are no statutorily protected sites within or directly abutting the Site boundary.

2.4.1.3 There are 7 no. Sites of Special Scientific Interest within the Study Area, parts of which are additionally designated as components of the Dorset Heathlands wetland of international importance (RAMSAR), Avon Valley RAMSAR, Dorset Heaths Special Area of Conservation (SAC), River Avon SAC, Dorset Heathlands Special Protection Area (SPA) and Avon Valley SPA.

2.4.1.4 The closest such site to the Proposed Development is the Moors River System SSSI, which encompasses the Moors River and Leaden Stour.

5 BCL Consultant Hydrogeologists Limited, 'Hurn Court Farm Quarry, Western Extension to Existing Mineral Workings, Surface Water Management Scheme', September 2018, S/LM/NM/HCF/DA18/004.

2.4.2 Non-Designated Sites of Ecological Importance

2.4.2.1 Details of non-statutorily protected sites within 2km of the Site have been provided within Wardell Armstrong Limited's 2015 Preliminary Ecological Appraisal[6].

2.4.2.2 The locations of non-statutorily protected sites within the area of the Site are shown at *figure 5;* outline details for which are given below at *table 2*.

Table 2 Non-Statutorily Protected Sites

Designation	Name	Distance* from Proposed Development (km)	Summary Description
Local Nature Reserve (LNR)	Stour Valley	1.1km SW	Grassland, woodland and scrub upon River Stour floodplain
Dorset Wildlife Trust (DWT) Nature Reserve	Sopley Common	1km E	Dry and wet heathland, within Town Common SSSI
	Troublefields	0.7km E	Meadow and woodland upon Moors River floodplain. Within Moors River System SSSI.

*-at shortest distance from the Proposed Development

2.4.2.3 There are no non-statutorily protected sites within or directly abutting the Site.

2.4.2.4 Sopley Common DWT reserve is located within the catchment of the River Avon, and is thus effectively hydraulically isolated from the Site. This is also the case for the Stour Valley LNR as it is located upon the southern banks of the River Stour.

2.5 Geological Setting

2.5.1 Background

2.5.1.1 Information concerning the geology of the Study Area has been obtained from:

- BGS publications.
- Geological & Hydrogeological reports made in support of planning applications within and in the vicinity of the Site.
- Site Mineral evaluation / piezometer installation drilling and trial pit logs (*appendix 3*).

2.5.2 Regional Geology

2.5.2.1 The geology of the region is illustrated at *figure 6*.

2.5.2.2 The Site is located within the Hampshire basin, being characterised by south-eastwards dipping cretaceous chalks overlain by clays, silts and sands of Palaeogene age in the form of the Thames Group and Bracklesham Group respectively.

2.5.2.3 The solid geological strata are overlain over much of the Study Area by superficial deposits, principally in the form of river terrace deposits and alluvium associated with local surface watercourses.

2.5.2.4 The stratigraphy of the region presented below at *table 3*.

6 Wardell Armstrong Limited, 'Trustees Viscount Fitzharris 1981 Settlement, Hurn Quarry Extension, Preliminary Ecological Appraisal', March 2015, ST14186, 006

Table 3 Stratigraphic Sequence			
Age	Group	Formation	Lithology
Quaternary	Alluvium		Clay, silt, sand.
	River Terrace Deposits		Sands and Gravels.
	Head Deposits		Clays, sands, gravels
	Bracklesham Group	Branksome Sands	Sands with subordinate clays
		Poole Formation	Interbedded sands and clays
	Thames Group	London Clay Formation	Clays, silts and sands
Cretaceous	Chalk Group		Chalk

2.5.3 Local Geology

2.5.3.1 The solid geology of the Study Area is dominated by the outcrop of the regionally pervasive Bracklesham group, with the Site itself being underlain by the sands and clays of the Poole Formation (PF).

2.5.3.2 The Poole Formation forms a 30-160m (in excess of 90m in Site vicinity) thick series of medium to course grained sands with interbedded brown, red and grey clays of varied thicknesses and distribution. Site drilling logs show this to typically constitute grey, silty sands with firm light grey silty clay horizons.

2.5.3.3 The Poole Formation is overlain by the Branksome Sands to the northeast, southwest and upon the high ground around Ramsdown Plantation, which features fine to course grained sands with thin lenticular clays.

2.5.3.4 The Bracklesham Group is in turn underlain at depth by a significant thickness of Thames Group clays of the London Clay Formation (LCF), of indicated thickness in excess of 100m (based on available geological mapping) and Cretaceous chalks respectively.

2.5.3.5 The solid geological strata underlying the Site are obscured by River Terrace Deposits (RTD) overlain by 0.5-2m of topsoil. The RTD principally constitute orange to yellowish brown sands with coarse rounded to sub-angular gravels of flint and quartzite with limited discontinuous clay horizons also being identified.

2.5.3.6 Interpolation of Site drilling logs show the RTD to have a thickness of 1.82-9.5m within the Proposed Development (*figure 7*), typically thickening southwards and westwards.

2.5.3.7 Interpolation of Site drilling logs with reference to Ordnance Datum (OD) has allowed estimation of the elevation of the base of deposit for the RTD, at 7.2-0.84maOD, typically falling to the south and west, as shown at *figure 8*.

2.5.3.8 Site drilling logs show the base of the RTD to be defined by the presence of both PF clays and sands at different locations. A continuous basal clay is not demonstrated by the available drilling logs.

2.5.3.9 The RTD gives way to the outcrop of the PF upon the southern boundary of the Proposed Development where eroded by the River Stour, which is in turn overlain by deposits of Alluvium in proximity to the river itself.

2.6 Hydrological Setting

2.6.1 Background

2.6.1.1 Information concerning the hydrology of the Study Area has been obtained from:

- OS digital mapping.
- EA digital mapping.
- FEH data-sets.
- Water Features Surveying (BCL, April 2018 & December 2019).

2.6.2 Catchments

2.6.2.1 The north to south trending ridgeline around Ramsdown Plantation forms a watershed separating the major catchments of the Study Area, with lands to the east falling within the catchment of the Hampshire Avon and lands to the west forming the catchment of the River Stour.

2.6.2.2 Within the Study Area, the Stour catchment is divided by a major tributary in the form of the Moors River. The sub-catchment of this watercourse abuts the Hampshire Avon catchment to the east, with its western extent following the plateau upon which Bournemouth Airport is located. This sub-catchment extends northwards in excess of the extent of the Study Area, and extends southwards to the confluence of the Moors River and River Stour to the south east of the Site.

2.6.2.3 To the south of the Site, a series of land drains and streams coalesce to form the Leaden Stour (a minor tributary of the River Stour), to which the Western Extension is seen to drain.

2.6.2.4 The Western Extension is thus considered to fall entirely within the Leaden Stour sub-catchment of the River Stour catchment.

2.6.3 Surface Watercourses

2.6.3.1 The surface watercourses of the region are illustrated at *figure 9*.

Major Surface Watercourses

2.6.3.2 The River Stour (WFS1, *figure 9*) rises at Stourhead in Wiltshire before flowing southwards and eastwards, passing 0.4km to the south of the Proposed Development, before ultimately discharging to the English Channel at Christchurch.

2.6.3.3 The Centre for Ecology and Hydrology (CEH) National River Flow Archive (NRFA) shows the River Stour to have a Q95 (flow rate exceeded 95% of the time) of 2.3m^3/s, and a Q50 (flow rate exceeded 50% of the time) of 7.8m^3/s, at Throop, 1.1km to the south of the Site.

2.6.3.4 The Moors River (WFS2. *figure 9*) rises at Cranborne in Dorset (as the River Crane) before flowing southwards and eastwards, to Moors Valley Country Park (as the Moors

River). The watercourse then flows southwards, passing 0.9km to the east of the Site, before ultimately discharging to the River Stour at Blackwater (0.7km to the south east of the Site).

2.6.3.5 The NRFA shows the Moors River to have a Q95 0.4m^3/s, and a Q50 of 2m^3/s, at Hurn Court, to the immediate east of the Site.

Minor Surface Watercourses

2.6.3.6 A minor surface watercourse is seen to be present in the form of the Leaden Stour. This forms an on-line sub-channel of the River Stour running parallel to the main river upon its northern banks which discharges to the Moors River 0.48km to the south of the Site (immediately upstream of its confluence with the River Stour). The Leaden Stour features impoundments creating waterbodies associated with the historic house of Hurn Court.

2.6.3.7 The Leaden Stour was observed during Water Features Surveying (WFS) to constitute a 5m wide, 1m deep channel with a 0.5m wetted depth (WFS3, *figure 9*).

2.6.3.8 A further minor watercourse in the form of a small stream is seen to rise at Parley Court Golf Club, 0.5km to the west of the Site, before flowing southeastwards, passing some 30m to the south of the Proposed Development, before discharging to the Leaden Stour 0.5km to the south of the Site at the site of a ford (the Southern Stream).

2.6.3.9 The Southern Stream was observed during Water Features Surveying (WFS) to constitute a 3m wide, 0.9m deep channel with a 0.6m wetted depth (WFS4, *figure 9*).

2.6.3.10 A number of minor drainage ditches are seen to be present upon the Stour floodplain to the south of the Site, these typically draining to the Leaden Stour.

2.6.4 Springs and Seepages

2.6.4.1 A small springline was identified during WFS to the immediate south of the Proposed Development at the foot of the terrace upon which the Site is located (WFS5, *figure 9*). This springline was observed to contribute flows (made informally over a public road, likely as a result of poor maintenance) to the Southern Stream. These springs and associated ditches on the northern side of Dales Lane run dry during dry periods.

2.6.4.2 An area of emergent vegetation indicative of groundwater seepage was observed adjacent to the Southern Stream, at WFS 6, *figure 9*.

2.6.5 Surface Waterbodies

2.6.5.1 The surface water-bodies of the region are also illustrated at *figure 9*.

2.6.5.2 There are a number of surface waterbodies within Parley Court Golf Club, to the southwest of the Site (WFS7-9, *figure 9)*. These waterbodies are indicated to be in groundwater continuity.

2.6.5.3 Further surface waterbodies are seen to be present to the south of the Site, being on-line with local minor surface watercourses (WFS10-14, *figure 9*).

2.6.6 Flooding

2.6.6.1 Published EA modelled fluvial flood extent mapping is illustrated at *figure 10*.

2.6.6.2 The Site, in its entirety, is located within areas defined as Flood Risk Zone 1 (FRZ1), defined as areas with an Annual Exceedance Probability (AEP) of <0.01 (risk of fluvial flooding of less than 1 in 1000 in each year). This designation represents the lowest class of FRZ and is applied to all areas not classified as FRZ2 (AEP of between 0.1 and 0.01) or FRZ3 (AEP of 0.1 or greater).

2.6.6.3 Areas of FRZ2 and FRZ3 are observed in proximity to the Site, being associated with lower lying ground adjacent to local surface watercourses (including the River Stour, Moors River and Leaden Stour).

2.6.6.4 It is understood that the residents of Dale's House, a listed building located upon the southern limit of the Proposed Development, have reported intermittent basement flooding (possibly groundwater flooding), though no evidence of this has been provided.

2.7 Meteorological Setting

2.7.1 Background

2.7.1.1 Information concerning the meteorology of the Study Area has been obtained from:

- Published and third party historic data sources.

2.7.2 Long Term Area Averages

2.7.2.1 The Standard Average Annual Rainfall (SAAR 1961 to 1990) reported by the FEH[7] is 795mm. Long-term average monthly rainfall data[8] are given below at *table 4*.

Table 4 Area Long Term Average Monthly Rainfall and Potential Transpiration

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Tot
Area Average Rainfall	79	60	50	50	56	50	60	72	70	78	95	87	807
Potential Evaporation	4	11	32	57	82	98	97	79	47	24	9	3	543

2.7.3 Local Data

2.7.3.1 Data has been provided by the EA for Holdenhurst Rain Gauge, located at NGR: 413149 095138, identified as the closest rain-gauge to the Site, as at *table 5* (average monthly total rainfall of some 68.9mm, with an annual average rainfall of some 828.1mm).

Table 5 Holdenhurst Rain Gauge, Monthly Totals

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2008	98.4	32.0	86.4	54.2	71.4	35.6	70.4	72.0	90.2	81.6	106.0	39.8	838.0
2009	94.2	93.2	45.8	49.2	25.8	50.2	64.6	24.4	39.8	83.0	182.4	150.2	902.8
2010	62.4	75.2	76.8	35.0	14.4	27.4	22.8	89.8	51.0	61.2	98.6	58.4	673.0
2011	95.0	72.2	18.4	6.0	21.4	80.0	34.0	137.4	57.6	50.0	41.2	91.2	704.4
2012	43.6	22.2	28.4	137.6	30.4	133.6	109.2	53.4	88.6	136.2	129.8	159.6	1072.6
2013	135.8	40.2	93.8	43.8	50.4	30.2	24.0	14.4	39.8	139.0	57.2	178.0	846.6
2014	226.0	140.2	44.0	102.6	104.0	22.2	16.8	92.6	17.4	129.8	174.2	41.0	1110.8
2015	97.0	48.8	19.8	21.2	71.2	34.6	54.6	113.2	71.4	51.2	71.4	72.6	727.0

7 "Flood Estimation Handbook CD-ROM, Version 3.0 ", Centre for Ecology & Hydrology (CEH; formerly the Institute of Hydrology), 2009 and successor web-service.

8 "Climate & Drainage", Technical Bulletin No. 34, Ministry of Agriculture Fisheries & Food (MAFF), September 1976.

2016	159.6	57.0	78.6	49.8	48.8	81.8	4.6	36.0	70.0	7.6	88.8	25.8	708.4
2017	87.6	43.0	53.6	10.2	46.6	50.0	86.2	45.6	74.4	35.0	63.2	101.6	697.0
2018	75.4	38.0	122.4	26.0									
Ave.	106.8	60.2	60.7	48.7	48.4	54.6	48.7	67.9	60.0	77.5	101.3	91.8	*828.1*

2.7.4 Effective Rainfall

2.7.4.1 The available rainfall data has been utilised to derive estimates for monthly effective rainfall for vegetated surfaces, bare ground and open water, using the methods of Grindley[9] and EA R&D Handbook W6-043/HBRef.13[10] as presented below at *table 6*.

2.7.4.2 Effective rainfall is estimated at 344mm/a for bare ground, 279mm/a for permanent grassland (such as currently applies to the Recovery Operation) and 159mm/a for open water.

Table 6 Derivation of Effective Rainfall for Differing Surfaces

Bare Earth (rc = 0mm)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Rf	79	60	50	50	56	50	60	72	70	78	95	87	807
Pe	4	11	32	57	82	98	97	79	47	24	9	3	543
rf-Pe	75	49	18	-7	-26	-48	-37	-7	23	54	86	84	264
dPsmd	0	0	0	7	26	48	37	7	-23	-54	-48	0	
dAsmd	0	0	0	7	21	12	3	2	-23	-22	0	0	
Asmd	0	0	0	7	33	81	118	125	102	48	0	0	514
Psmd	0	0	0	7	28	40	43	45	22	0	0	0	185
Ae	4	11	32	57	77	62	63	74	47	24	9	3	463
ERF	75	49	18	0	0	0	0	0	0	32	86	84	344
Permanent Grassland (rc = 75mm)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Rf	79	60	50	50	56	50	60	72	70	78	95	87	807
Pe	4	11	32	57	82	98	97	79	47	24	9	3	543
rf-Pe	75	49	18	-7	-26	-48	-37	-7	23	54	86	84	264
dPsmd	0	0	0	7	26	48	37	7	-23	-54	-48	0	
dAsmd	0	0	0	7	26	48	27	2	-23	-54	-33	0	
Asmd	0	0	0	7	33	81	118	125	102	48	0	0	514
Psmd	0	0	0	7	33	81	108	110	87	33	0	0	459
Ae	4	11	32	57	82	98	87	74	47	24	9	3	528
ERF	75	49	18	0	0	0	0	0	0	0	53	84	279
Open Water													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Correction Constants	1.4	1.1	0.9	1.0	0.9	1.0	1.2	1.4	1.5	2.0	2.3	2.0	
Ae	5.7	12.5	29.4	54.2	74.6	100.0	120.3	108.2	69.1	47.8	20.6	5.9	648.3
ERF	73.3	47.5	20.6	-4.2	-18.6	-50.0	-60.3	-36.2	0.9	30.2	74.4	81.2	158.8

rc: Root Constant, Rf: Rainfall, Pe: Potential Evaporation, Psmd: Potential Soil Moisture Deficit. Asmd: Actual Soil Moisture Deficit, Ae: Actual Evaporation, ERF: Effective Rainfall. All units other than correction constants are millimetres.
Note: Estimates of effective rainfall for bare earth and grassland cover are identical due to the preponderance of rainfall over evapotranspiratton in the area which militates against the development of significant SMD during average climatic years.

9 "The Calculation of Actual Evaporation and Soil Moisture Deficit over Specified Catchment Areas", Grindley J, November 1969, Hydrological Memorandum 38, Meteorological Office, Bracknell, UK.

10 "Estimation of Open Water Evaporation, Guidance for Environment Agency Practitioners", R&D Handbook W6-043/HB, Finch JW and Hall RL, October 2001.

2.8 Hydrogeological Setting

2.8.1 Background

2.8.1.1 The hydrogeological regime of the Site and surrounding area has been elucidated on the basis of:

- Review of published geological and hydrogeological data.
- Review of hydrogeological study reports prepared in support of planning applications for quarrying and water resource developments in the area.
- Groundwater level measurements made within observation piezometers at the Site and within the surrounding area operated by HHDED.
- Groundwater quality data for Site piezometers.
- Site visits made by BCL in April 2018 & December 2019.
- Experience of similar hydrogeological terrains elsewhere within England.

2.8.2 Aquifer Classification

2.8.2.1 The RTD are classified by the EA as a superficial '*Secondary A Aquifer'* (formally minor aquifers), defined as permeable layers capable of supporting small scale abstraction which may form an important component of baseflow to surface watercourses. This designation also applies to deposits of Alluvium (where present).

2.8.2.2 The PF, which underlies the RTD, is defined as a bedrock '*Secondary A Aquifer*' (defined as above). Where conformable clay members are present, these are classified as '*Unproductive Strata*' (formally non-aquifers), defined as low permeability strata with negligible significance for water supply or surface water base flow.

2.8.2.3 The LCF, which underlies the PF, is also defined as '*Unproductive Strata*'.

2.8.3 Groundwater Flow Mechanism

2.8.3.1 The RTD form an unconfined, granular superficial aquifer (the Upper Aquifer) featuring diffuse, intergranular groundwater flow and relatively elevated permeability. The Superficial Aquifer is indicated to be largely homogenous and isotropic, though isolated clay lenses (where present) may introduce localised vertical anisotropy.

2.8.3.2 The sand layers within the PF also form largely homogenous granular aquifers featuring diffuse, intergranular groundwater flow. Clay horizons within the PF are assumed to be of relatively low permeability with the function of aquitards (barriers to groundwater flow).

2.8.3.3 The presence of clay horizons within the PF, which are known to vary greatly in thickness, extent and elevation at relatively small scales, introduces vertical and lateral anisotropy. The clay horizons thus have the potential to act as barriers to groundwater flow and may result in confined conditions (where present at sufficient thickness and extent), or to result in the presence of perched groundwaters (where present at sufficient extent within the unsaturated zone).

2.8.3.4 The PF as a whole is thus considered to function as an aquifer (the Lower Aquifer) of intermediate permeability at the scale of interest.

2.8.3.5 Site drilling logs indicate the RTD to overlie the PF in areas where clay horizons are both present and absent at their interface. A degree of hydraulic continuity between the Upper and Lower Aquifers is thus anticipated, collectively functioning as a single aquifer unit (the Aquifer).

2.8.3.6 The LCF which underlies the PF is assumed to function as a pervasive aquitard of significant thickness and regional extent.

2.8.4 Aquifer Boundaries

Aquifer Vertical Boundaries

2.8.4.1 The Aquifer is effectively unconfined with its upper boundary thus being formed by ground surface.

2.8.4.2 The Aquifer is underlain by the LCF aquicludes which form its base and are assumed to hydraulically isolate the Aquifer from underlying strata.

Aquifer Lateral Boundaries

2.8.4.3 The lateral boundaries of the Upper Aquifer are formed by the limit of its extent to the east, south and west and is assumed to be of effectively unlimited extent at the scale of interest to the north and northwest.

2.8.4.4 The Lower Aquifer is of effectively unlimited extent at the scale of interest.

Aquifer Internal Boundaries

2.8.4.5 The River Stour and Moors River both form major watercourses which are assumed in hydraulic continuity with the Aquifer and are assumed to gain baseflow from it. Though not indicated to be fully penetrating, these watercourses are anticipated to exert a strong control on the local hydrogeological regime and are thus assumed to function as internal Aquifer boundaries (to the east, south and west of the Site), offering a high degree of hydraulic isolation between the Site and lands to the east / south of these watercourses.

2.8.5 Aquifer Recharge

2.8.5.1 The Aquifer is unconfined and readily permeable and is thus assumed to feature diffuse, autogenic (derived from within the distribution of the Aquifer) recharge featuring rapid, vertical infiltration.

2.8.5.2 Vertical anisotropy within the Lower Aquifer has the potential to form a barrier to recharge at the local scale.

2.8.6 Groundwater Occurrence and Levels

The Available Data

2.8.6.1 Information regarding groundwater levels within the Aquifer in the vicinity of the Site have been taken from:

- Groundwater level data for 26-no. piezometers installed within the Aquifer at the Site, of which 9-no. are installed within the Proposed Development (construction details included at *appendix 3).*

- Elevation data for local surface water features.
- Previous hydrogeological assessment of the Site including Wardell Armstrong Limited's 2017 Groundwater Modelling Report[11] (The 2017 Groundwater Modelling Report).

2.8.6.2 The available data, as collected on a monthly basis by the Site, includes piezometers which partially penetrate the Aquifer to varying degrees (being installed to both the Upper and Lower Aquifers), and spans from 2013 to 2020 for piezometers within the Existing Site (BH Series), and from 2015 to 2020 for piezometers within the Western Extension (CP and 19 Series).

2.8.6.3 Excepting the 2019 Series piezometers, the Site piezometers are currently un-surveyed. Piezometer locations (as shown at *figure 11*) have thus been estimated based on drilling logs, drilling plans, a Site walkover survey undertaken in April 2018 and correspondence with monitoring personnel.

2.8.6.4 Further correspondence with monitoring personnel has confirmed datum elevations relative to ground elevations, which have been combined with 1m spatial resolution Light Detecting and Ranging (LIDAR) ground elevation data to establish approximate datum elevations to Ordnance Datum (from which groundwater elevations have been established).

Estimated Groundwater Elevations

2.8.6.5 The available data has been used to produce interpolated contour plots demonstrating groundwater elevations across the Site under minimum, maximum and average elevations at *figures 11, 12 and 13* respectively.

2.8.6.6 Piezometers with limited data availability have been excluded from this analysis. Piezometers featuring dual (nested) installations (such as BH1, BH2, BH3 and BH5), which have separate piezometers monitoring both the RTD and underlying PF, largely demonstrated equivalent elevations at their respective locations (with no widespread perching / confining indicated). Data for these locations has been taken from the piezometer with the greatest data availability.

2.8.6.7 Under minimum conditions, groundwater elevations are seen to range from 3.34maOD to 7.44maOD, typically falling to the south and east at a gradient of 0.002 (steepening in proximity to the Moors River).

2.8.6.8 The observed head distribution is in agreement with ground elevations, showing groundwater levels to fall towards and in line with flows within the River Stour and Moors River. Groundwater flow is thus made to the south east, from the bulk of the Aquifer's distribution towards these watercourses.

2.8.6.9 Under maximum conditions, groundwater elevations are seen to range from 4.78maOD to 9.23maOD, also typically falling to the south and east at a gradient of 0.002, and demonstrating a similar head distribution (and thus groundwater flow direction) to that observed under minimum conditions.

11 Wardell Armstrong Limited, 'Hurn Plant Site Variation to Planning, Groundwater Modelling', August 2017, ST14939

2.8.6.10 Under average conditions, groundwater elevations are seen to range from 3.85maOD to 7.80maOD, also typically falling to the south and east at a gradient of 0.002, and demonstrating a similar head distribution (and thus groundwater flow direction) to that observed under minimum and maximum conditions.

2.8.6.11 Across all conditions, a conformable piezometric surface is indicated to be present, reinforcing the assumption that the PF and RTD function as a single Aquifer (as boreholes installed to both units are present).

2.8.6.12 Ground elevations at the listed building of Dales House upon the southern boundary of the Proposed Development are at approximately 8maOD, relative to maximum groundwater elevations of 6maOD to 7maOD. Groundwaters within the Aquifer saturated zone are thus the likely source of reported basement flooding at this location.

2.8.6.13 It should be noted that the 2017 Groundwater Modelling Report, which assessed the potential impact of introducing inert infill materials below the water table on groundwater elevations in the vicinity of the Western Extension (which may potentially form a barrier to groundwater flow inducing increased up-gradient groundwater elevations and decreased down-gradient groundwater elevations) concluded that any potential for such impact was 'not considered significant'.

Unsaturated Thickness

2.8.6.14 Ground elevation data has been combined with maximum groundwater elevation data to produce an interpolated contour plot estimating minimum unsaturated thickness within the Proposed Development, as at *figure 14*.

2.8.6.15 Minimum unsaturated thickness is seen to range from approximately 3.4m to 1.9m, being thickest upon the western and south eastern boundaries of the Proposed Development, and thinning to the South.

Saturated Thickness

2.8.6.16 Insufficient data is available to estimate the basal elevation of the Aquifer as the majority of drilling undertaken in the local area has only partially penetrated the PF. Saturated thickness cannot therefore be accurately estimated.

2.8.7 Temporal Groundwater Elevations

2.8.7.1 The available groundwater level data collected at the Site piezometers is presented in hydrograph form at *figure 15*.

2.8.7.2 Groundwater elevations across the Site are seen to follow the typical trend applying to unconfined UK granular aquifers, such as that present at the Site, with peak winter elevations followed by a summer recession and subdued response to individual rainfall events.

2.8.7.3 The data does not indicate any persistent underlying long term trend of rising / falling groundwater elevations, with individual piezometers showing consistent ranges of between 0.8 and 2.6m.

2.8.8 Aquifer Parameters

2.8.8.1 Aquifer testing has been undertaken at the Site as part of previous hydrogeological investigations, as summarised in the 2017 Groundwater Modelling Report, and presented below at *table 7*.

Table 7 Summary Detail of Aquifer Parameter Testing

Location (*figure 11*)	Date	Geology	Method	Transmissivity (m^2/d)	Hydraulic Conductivity (m/d)	Note
CP02	2015	RTD/PFS	PT	6.71	1.54	Piezometer screen bridges RTD/PFS interface
				5.96	1.37	
CP04	2015	PFS	PT	24.75	5.77	Screen in PFS, PFC at interface, not sealed, leakage from RTD likely
CP05	2015	PFS/PFC	PT	0.43	0.1	Screen bridges PFS/PFC, PFC at interface with RTD, no seal at interface, leakage from RTD likely
BH7	2008	RTD	U		1.03	Piezometer designs not available
BH8	2008	RTD	U		1.65	Piezometer designs not available
BH10	2008	PF	U		0.57	Piezometer designs not available
BH12	2008	PF	U		0.44	Piezometer designs not available

RTD: River Terrace Deposits, PFS: Poole Formation Sands, PFC: Poole Formation Clay, PT: Short duration pump test, U: Unknown

2.8.8.2 The screen within piezometer CP05 is known to be partially located within a clay horizon within the PF. Permeability at this location is notably lower than recorded elsewhere and is thus not considered representative of the wider Aquifer. Similarly depressed permeability was recorded at piezometers BH10 and BH12 (for which logs are unavailable). This may potentially be for the same reasons.

2.8.8.3 Following model calibration within the 2017 Groundwater Modelling Report, representative lateral permeability for the Aquifer was adopted at 100m/d, with a vertical permeability of 10m/d and an aquifer porosity of 0.25-0.5. Such figures are however unlikely to be truly representative of actual field conditions (due to the means of their derivation).

2.8.8.4 Representative Aquifer permeability for the Site location is thus considered to range from 1m/d to 6m/d.

2.9 Water Resources Setting

2.9.1 Catchment Abstraction Management Strategy

Overview

2.9.1.1 The Site falls within the Dorset Catchment Abstraction Management Strategy (CAMS) Area, as governed by the Dorset Water Framework Directive Management Area Abstraction Licencing Strategy.

Surface Water Resource Availability Status

2.9.1.2 The Site location falls within an area with 'Water Available for Licencing' at all flows, meaning that there is more water than required by the needs of the environment and that new consumptive licenses may be granted dependent upon local impacts.

2.9.1.3 The Site location has a water resource availability of 95%, meaning that water should be available for abstraction at least 95% of the time.

2.9.1.4 The Site is located upstream of the Iford Bridge – Stour Assessment Point, against which Hands Off Flow (HOF) conditions may be applied, with a potential resource reliability of 67%.

Groundwater Resource Availability Status

2.9.1.5 Groundwater resource availability and licensing is governed by that of surface water throughout the CAMS area.

2.9.2 Water Framework Directive Groundwater Body Quantitative Status

2.9.2.1 The Site is located within the Lower Dorset Stour and Lower Hampshire Avon Groundwater Body of the South West Groundwater Management Catchment, within the South West River Basin District, and has a quantitative status of 'Good'.

2.9.3 Water Abstractions

Licenced Abstractions

2.9.3.1 The locations of licensed abstractions within the vicinity of the Site are illustrated at *figure 16* with summary details given below at *table 8*.

Table 8 Licenced Abstractions

Ref (*figure 16*)	Licence No.	Licence Holder	Source	Use
A	13/43/036/S/116	Eco Sustainable Solutions Ltd	SW	Spray Irrigation
B	13/43/036/G/132/R01	HH & DE Drew	GW	Minerals Production
C	13/43/037/G/132/R01	Wessex Water Services Ltd	GW	Water Supply
D	13/43/037/S/110	Mr A Ross	SW	Spray Irrigation
E	13/43/036/G/127	Mr P Richards	GW	Spray Irrigation
F	13/43/037/S/003	Dampneys Ltd	SW	Spray Irrigation

GW: Groundwater, SW: Surface Water

2.9.3.2 There are no licenced abstractions within the Proposed Development. There is one such abstraction located within the Site (Abstraction B) which is owned and operated by HHDED in support of Site operations (this being sourced from a borehole drilled to the PF).

2.9.3.3 Abstractions A, D and F are all made from surface water sources located upstream of the Proposed Development within the Stour and Moors River catchments. These abstractions are thus considered to be effectively hydraulically isolated from the Site.

2.9.3.4 Abstraction C is operated for water supply at Berry Hill sewage treatment works. The aquifer which forms the source of supply is not known though is considered likely to be

the Lower Aquifer. This abstraction is located upon the southern banks of the River Stour and is thus considered to be effectively hydraulically isolated from the Site.

2.9.3.5 Abstraction E forms a water supply for a garden centre and is indicated to be sourced from a shallow well with the RTD as its source of supply. This abstraction is located 1.8km to the west of the Site and is cross hydraulic gradient, offering a degree of hydraulic isolation from the Site.

De-regulated Abstractions

2.9.3.6 Data regarding deregulated abstractions (private water supplies of <20m^3/d for which an abstraction licence is not required) have been provided by Christchurch and East Dorset Council (CEDC) and Bournemouth Borough Council (BBC).

2.9.3.7 BBC and CEDC have both confirmed that they hold no record of any private water supplies within the Study Area.

2.9.4 Source Protection Zones

2.9.4.1 Details of groundwater Source Protection Zones (SPZs) in the vicinity of the Site have been provided by the EA. There are no SPZs present within the Study Area.

2.10 Hydrochemical Setting

2.10.1 Background

2.10.1.1 Information concerning the water quality of the Study Area has been obtained from:

- Published and third-party data sources.
- Site monitoring data.

2.10.2 Groundwater Quality

Groundwater Vulnerability

2.10.2.1 EA mapping shows the entirety of the Study Area to be defined as either '*Minor Aquifer, High Vulnerability*' or '*Minor Aquifer, Intermediate Vulnerability*'. This is assumed to be due to the presence of unconfined minor aquifers across the area.

2.10.2.2 Areas of the Proposed Development are classified as both '*High*' and '*Intermediate*' vulnerability.

Water Framework Directive Groundwater Body Chemical Status

2.10.2.3 As discussed, the Site is located within the Lower Dorset Stour and Lower Hampshire Avon Groundwater Body of the South West Groundwater Management Catchment, within the South West River Basin District, and has a qualitative status of 'Poor'.

Groundwater Quality Data

The Available Data

2.10.2.4 Groundwater quality data has been collected at the Site by HHDED from 6 no. piezometers within the Western Extension (CP01, CP05, CP06 and all 19 Series piezometers, as at ***figure 11***), covering the period December 2017 to July 2019.

2.10.2.5 Tabulated groundwater quality data for samples obtained from Site piezometers are provided at *appendix 4* with laboratory certificates included at *appendix 5*.

2.10.2.6 *Table 9* below shows average and maximum concentrations for a selected number of representative chemical species established from the data for the Site piezometers.

2.10.2.7 Average and maximum values for each location for each species are also expressed as a percentage of the average established for the Aquifer and of the most relevant Regulatory Water Quality Standard (RWQS[12]).

2.10.2.8 Where species concentrations are below the analytical Limit of Detection (LOD), this value has been assumed.

Table 9 Baseline Groundwater Quality Data						
Determinand	Temperature					
Units	°C					
RWQS	NS					
RWQS Type	NS					
LOD	U					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	19.90	9.91	168.62	84.00	NS	NS
CP05	17.50	10.36	148.28	87.80	NS	NS
CP06	19.30	10.03	163.54	85.03	NS	NS
BH1/19	17.00	14.25	144.05	120.75	NS	NS
BH2/19	15.30	13.20	129.64	111.85	NS	NS
BH3/19	15.50	13.05	131.34	110.58	NS	NS
Determinand	pH					
Units	pH units					
RWQS	NS					
RWQS Type	NS					
LOD	U					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	8.74	7.32	131.91	110.44	NS	NS
CP05	8.68	6.82	131.00	102.86	NS	NS
CP06	8.43	6.51	127.23	98.29	NS	NS
BH1/19	7.17	6.46	108.21	97.42	NS	NS
BH2/19	6.71	6.32	101.27	95.38	NS	NS
BH3/19	6.63	6.34	100.06	95.61	NS	NS
Determinand	Electrical Conductivity					
Units	µs.cm-1					
RWQS	2500					
RWQS Type	DWS					
LOD	U					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	183.90	150.18	83.32	68.04	7.36	6.01
CP05	472.60	351.15	214.11	159.09	18.90	14.05
CP06	313.60	170.38	142.08	77.19	12.54	6.82
BH1/19	136.70	132.15	61.93	59.87	5.47	5.29
BH2/19	284.90	282.50	129.07	127.99	11.40	11.30
BH3/19	243.10	238.00	110.14	107.83	9.72	9.52
Determinand	Dissolved Oxygen					

12 Generally UK Drinking Water Standards (Water Supply -Water Quality – Regulations 2000 (UK-DWS); alternative standards utilised where enumerated threshold concentrations are not provided by the UK-DWS.

Units	%					
RWQS	NS					
RWQS Type	NS					
LOD	U					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	79.30	49.30	161.14	100.19	NS	NS
CP05	86.60	43.20	175.97	87.78	NS	NS
CP06	101.20	40.72	205.64	82.75	NS	NS
BH1/19	42.60	41.75	86.56	84.84	NS	NS
BH2/19	86.40	57.85	175.56	117.55	NS	NS
BH3/19	71.60	62.45	145.49	126.90	NS	NS
Determinand	Eh Redox					
Units	mV					
RWQS	NS					
RWQS Type	NS					
LOD	U					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	73.80	5.93	225.77	18.13	NS	NS
CP05	60.90	12.28	186.30	37.57	NS	NS
CP06	90.40	26.07	276.55	79.76	NS	NS
BH1/19	82.20	52.75	251.46	161.37	NS	NS
BH2/19	95.50	55.85	292.15	170.85	NS	NS
BH3/19	80.60	43.25	246.57	132.31	NS	NS
Determinand	Ammoniacal Nitrogen					
Units	mg/l					
RWQS	0.5					
RWQS Type	DWS					
LOD	0.02					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	0.29	0.06	631.23	130.60	58.00	12.00
CP05	1.20	0.08	2611.99	177.92	240.00	16.35
CP06	0.42	0.06	914.20	139.12	84.00	12.78
BH1/19	0.02	0.02	43.53	43.53	4.00	4.00
BH2/19	0.04	0.03	87.07	65.30	8.00	6.00
BH3/19	0.02	0.02	43.53	43.53	4.00	4.00
Determinand	Arsenic					
Units	mg/l					
RWQS	0.01					
RWQS Type	DWS					
LOD	0.003 / 0.007					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	0.281	0.021	1859.86	138.13	2810.00	208.70
CP05	0.450	0.027	2978.42	181.29	4500.00	273.91
CP06	0.291	0.021	1926.04	141.58	2910.00	213.91
BH1/19	0.007	0.007	46.33	46.33	70.00	70.00
BH2/19	0.007	0.007	46.33	46.33	70.00	70.00
BH3/19	0.007	0.007	46.33	46.33	70.00	70.00
Determinand	Barium					
Units	mg/l					
RWQS	0.1					
RWQS Type	DWS					
LOD	U					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	0.51	0.14	923.51	254.61	506.00	139.50
CP05	0.09	0.04	169.74	69.85	93.00	38.27

CP06	0.22	0.04	396.05	74.69	217.00	40.92
BH1/19	0.01	0.01	22.81	20.17	12.50	11.05
BH2/19	0.09	0.08	158.24	146.10	86.70	80.05
BH3/19	0.02	0.02	36.50	34.59	20.00	18.95
Determinand	Cadmium					
Units	mg/l					
RWQS	0.005					
RWQS Type	DWS					
LOD	0.0008					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	0.009	0.001	1241.34	130.33	188.00	19.74
CP05	0.001	0.000	105.65	61.44	16.00	9.30
CP06	0.004	0.001	554.64	91.29	84.00	13.83
BH1/19	0.001	0.001	105.65	105.65	16.00	16.00
BH2/19	0.001	0.001	105.65	105.65	16.00	16.00
BH3/19	0.001	0.001	105.65	105.65	16.00	16.00
Determinand	Chloride					
Units	mg/l					
RWQS	250					
RWQS Type	DWS					
LOD	U					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	19.10	13.42	67.95	47.73	7.64	5.37
CP05	89.40	59.29	318.04	210.91	35.76	23.71
CP06	38.40	16.90	136.61	60.14	15.36	6.76
BH1/19	20.10	18.50	71.51	65.81	8.04	7.40
BH2/19	30.50	28.05	108.50	99.79	12.20	11.22
BH3/19	37.40	32.50	133.05	115.62	14.96	13.00
Determinand	Chromium					
Units	mg/l					
RWQS	0.05					
RWQS Type	DWS					
LOD	0.001					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	0.12	0.02	1887.04	326.75	230.00	39.83
CP05	0.05	0.01	820.45	119.14	100.00	14.52
CP06	0.02	0.01	328.18	104.88	40.00	12.78
BH1/19	0.00	0.00	16.41	16.41	2.00	2.00
BH2/19	0.00	0.00	16.41	16.41	2.00	2.00
BH3/19	0.00	0.00	16.41	16.41	2.00	2.00
Determinand	Copper					
Units	mg/l					
RWQS	2					
RWQS Type	DWS					
LOD	0.001					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	0.12	0.04	834.90	250.20	6.05	1.81
CP05	0.05	0.01	324.30	94.80	2.35	0.69
CP06	0.04	0.01	282.90	89.40	2.05	0.65
BH1/19	0.01	0.01	55.20	55.20	0.40	0.40
BH2/19	0.01	0.01	55.20	55.20	0.40	0.40
BH3/19	0.01	0.01	55.20	55.20	0.40	0.40
Determinand	Dissolved Organic Carbon					
Units	mg/l					
RWQS	NS					
RWQS Type	NS					

LOD	U					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	30.70	3.46	1246.00	140.59	NS	NS
CP05	12.00	2.69	487.04	109.25	NS	NS
CP06	7.20	2.06	292.22	83.71	NS	NS
BH1/19	2.00	2.00	81.17	81.17	NS	NS
BH2/19	3.13	2.57	127.04	104.10	NS	NS
BH3/19	2.00	2.00	81.17	81.17	NS	NS
Determinand	Fluoride					
Units	mg/l					
RWQS	1.5					
RWQS Type	DWS					
LOD	0.01					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	0.37	0.06	621.55	97.14	24.67	3.86
CP05	0.35	0.05	587.95	91.30	23.33	3.62
CP06	0.33	0.04	554.35	67.19	22.00	2.67
BH1/19	0.05	0.05	83.99	83.99	3.33	3.33
BH2/19	0.07	0.07	117.59	109.19	4.67	4.33
BH3/19	0.10	0.09	167.99	151.19	6.67	6.00
Determinand	Mercury					
Units	mg/l					
RWQS	0.001					
RWQS Type	DWS					
LOD	0.0001					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	0.0006	0.0001	334.55	67.88	60.00	12.17
CP05	0.0017	0.0002	947.88	99.39	170.00	17.83
CP06	0.0007	0.0001	390.30	70.30	70.00	12.61
BH1/19	0.0008	0.0005	446.06	250.91	80.00	45.00
BH2/19	0.0001	0.0001	55.76	55.76	10.00	10.00
BH3/19	0.0001	0.0001	55.76	55.76	10.00	10.00
Determinand	Molybdenum					
Units	mg/l					
RWQS	0.07					
RWQS Type	WHO					
LOD	0.0004					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	0.07	0.00	2624.10	133.58	103.71	5.28
CP05	0.12	0.01	4265.06	204.92	168.57	8.10
CP06	0.075	0.004	2707.23	153.06	107.00	6.05
BH1/19	0.001	0.001	36.14	36.14	1.43	1.43
BH2/19	0.001	0.001	36.14	36.14	1.43	1.43
BH3/19	0.001	0.001	36.14	36.14	1.43	1.43
Determinand	Total PAHs					
Units	mg/l					
RWQS	0.0001					
RWQS Type	DWS					
LOD	0.2					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	0.21	0.20	85.06	81.19	210000.00	200434.78
CP05	2.00	0.32	810.10	131.38	2000000.00	324347.83
CP06	2.00	0.36	810.10	144.41	2000000.00	356521.74
BH1/19	0.20	0.20	81.01	81.01	200000.00	200000.00
BH2/19	0.20	0.20	81.01	81.01	200000.00	200000.00
BH3/19	0.20	0.20	81.01	81.01	200000.00	200000.00

Determinand	Total Phenols					
Units	mg/l					
RWQS	0.0005					
RWQS Type	DWS					
LOD	0.01					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	0.01	0.01	100.00	100.00	2000.00	2000.00
CP05	0.01	0.01	100.00	100.00	2000.00	2000.00
CP06	0.01	0.01	100.00	100.00	2000.00	2000.00
BH1/19	0.01	0.01	100.00	100.00	2000.00	2000.00
BH2/19	0.01	0.01	100.00	100.00	2000.00	2000.00
BH3/19	0.01	0.01	100.00	100.00	2000.00	2000.00
Determinand	Sulphate					
Units	mg/l					
RWQS	250					
RWQS Type	DWS					
LOD	U					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	25.80	11.62	77.34	34.83	10.32	4.65
CP05	74.50	58.80	223.32	176.24	29.80	23.52
CP06	61.30	39.05	183.75	117.05	24.52	15.62
BH1/19	28.20	24.70	84.53	74.04	11.28	9.88
BH2/19	51.60	47.75	154.67	143.13	20.64	19.10
BH3/19	19.80	18.25	59.35	54.71	7.92	7.30
Determinand	Total Dissolved Solids					
Units	mg/l					
RWQS	NS					
RWQS Type	NS					
LOD	U					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	280.00	103.04	156.87	57.73	NS	NS
CP05	415.00	308.04	232.50	172.58	NS	NS
CP06	260.00	137.39	145.66	76.97	NS	NS
BH1/19	115.00	80.00	64.43	44.82	NS	NS
BH2/19	305.00	262.50	170.87	147.06	NS	NS
BH3/19	190.00	180.00	106.44	100.84	NS	NS
Determinand	TOC (Total Organic Carbon)					
Units	mg/l					
RWQS	NS					
RWQS Type	NS					
LOD	2					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	18.40	8.02	178.99	78.00	NS	NS
CP05	14.70	6.23	143.00	60.62	NS	NS
CP06	33.80	7.54	328.80	73.39	NS	NS
BH1/19	33.60	17.90	326.85	174.13	NS	NS
BH2/19	4.80	4.05	46.69	39.40	NS	NS
BH3/19	30.60	17.94	297.67	174.47	NS	NS
Determinand	Total TPH					
Units	mg/l					
RWQS	0.3					
RWQS Type	WHO					
LOD	25					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS

CP01	74.60	28.09	282.80	106.49	24866.67	9363.77
CP05	50.50	28.05	191.44	106.34	16833.33	9350.72
CP06	51.00	26.63	193.34	100.95	17000.00	8876.81
BH1/19	25.00	25.00	94.77	94.77	8333.33	8333.33
BH2/19	26.00	25.50	98.56	96.67	8666.67	8500.00
BH3/19	25.00	25.00	94.77	94.77	8333.33	8333.33
Determinand	Antimony					
Units	mg/l					
RWQS	0.005					
RWQS Type	DWS					
LOD	0.003					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	0.03	0.01	775.12	155.02	600.00	120.00
CP05	0.01	0.004	310.05	103.35	240.00	80.00
CP06	0.01	0.004	361.72	109.09	280.00	84.44
BH1/19	0.00	0.003	77.51	77.51	60.00	60.00
BH2/19	0.00	0.003	77.51	77.51	60.00	60.00
BH3/19	0.00	0.003	77.51	77.51	60.00	60.00
Determinand	BOD					
Units	mg/l					
RWQS	NS					
RWQS Type	NS					
LOD	4					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	5.38	4.20	86.13	67.19	NS	NS
CP05	13.00	5.38	208.12	86.11	NS	NS
CP06	85.50	15.89	1368.78	254.43	NS	NS
BH1/19	4.02	4.01	64.36	64.20	NS	NS
BH2/19	4.00	4.00	64.04	64.04	NS	NS
BH3/19	4.00	4.00	64.04	64.04	NS	NS
Determinand	Boron					
Units	mg/l					
RWQS	1					
RWQS Type	DWS					
LOD	0.2					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	0.22	0.20	107.31	100.89	21.50	20.21
CP05	0.20	0.20	99.82	99.82	20.00	20.00
CP06	0.20	0.20	99.82	99.82	20.00	20.00
BH1/19	0.20	0.20	99.82	99.82	20.00	20.00
BH2/19	0.20	0.20	99.82	99.82	20.00	20.00
BH3/19	0.20	0.20	99.82	99.82	20.00	20.00
Determinand	Calcium					
Units	mg/l					
RWQS	250					
RWQS Type	DWS					
LOD	U					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	66.20	35.20	150.63	80.10	26.48	14.08
CP05	72.10	63.16	164.06	143.71	28.84	25.26
CP06	34.70	26.53	78.96	60.36	13.88	10.61
BH1/19	16.60	16.25	37.77	36.98	6.64	6.50
BH2/19	116.00	83.50	263.95	190.00	46.40	33.40
BH3/19	43.80	39.05	99.66	88.86	17.52	15.62
Determinand	COD					
Units	mg/l					
RWQS	NS					

RWQS Type	NS					
LOD	1.5					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	17.00	5.93	211.52	73.77	NS	NS
CP05	51.00	15.80	634.57	196.59	NS	NS
CP06	26.20	9.84	326.00	122.47	NS	NS
BH1/19	2.00	1.75	24.89	21.77	NS	NS
BH2/19	7.40	7.40	92.08	92.08	NS	NS
BH3/19	7.60	7.50	94.56	93.32	NS	NS
Determinand	Magnesium					
Units	mg/l					
RWQS	50					
RWQS Type	DWS					
LOD	U					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	4.82	2.59	156.46	84.12	9.64	5.18
CP05	4.26	3.98	138.28	129.33	8.52	7.97
CP06	4.82	3.91	156.46	127.02	9.64	7.83
BH1/19	1.32	1.29	42.85	41.88	2.64	2.58
BH2/19	5.16	4.26	167.50	138.28	10.32	8.52
BH3/19	2.46	2.45	79.85	79.37	4.92	4.89
Determinand	Manganese					
Units	mg/l					
RWQS	0.05					
RWQS Type	DWS					
LOD	0.04					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	4.25	1.32	1185.81	368.58	8500.00	2642.00
CP05	0.05	0.03	13.95	9.29	100.00	66.57
CP06	0.15	0.06	40.74	15.39	292.00	110.29
BH1/19	0.79	0.61	220.42	170.20	1580.00	1220.00
BH2/19	0.14	0.10	39.90	28.04	286.00	201.00
BH3/19	0.04	0.03	12.28	8.51	88.00	61.00
Determinand	Nickel					
Units	mg/l					
RWQS	0.02					
RWQS Type	DWS					
LOD	U					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	0.17	0.05	667.34	173.23	870.00	225.83
CP05	0.05	0.01	184.86	56.71	241.00	73.93
CP06	0.07	0.03	283.05	106.96	369.00	139.44
BH1/19	0.01	0.01	23.78	23.59	31.00	30.75
BH2/19	0.00	0.00	13.04	9.97	17.00	13.00
BH3/19	0.12	0.06	441.06	229.54	575.00	299.25
Determinand	PCBs					
Units	mg/l					
RWQS	NS					
RWQS Type	NS					
LOD	1					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	1.00	1.00	92.31	92.31	NS	NS
CP05	1.00	1.00	92.31	92.31	NS	NS
CP06	1.00	1.00	92.31	92.31	NS	NS
BH1/19	1.00	1.00	92.31	92.31	NS	NS
BH2/19	2.00	1.50	184.62	138.46	NS	NS

BH3/19	1.00	1.00	92.31	92.31	NS	NS
Determinand	Phosphate					
Units	mg/l					
RWQS	0.4					
RWQS Type	ADW					
LOD	0.02					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	3.80	0.74	1255.70	244.53	950.00	185.00
CP05	0.35	0.07	115.66	22.19	87.50	16.79
CP06	0.37	0.12	122.27	39.18	92.50	29.64
BH1/19	0.14	0.08	46.26	26.44	35.00	20.00
BH2/19	0.10	0.10	33.04	33.04	25.00	25.00
BH3/19	0.93	0.71	307.32	234.62	232.50	177.50
Determinand	Selenium					
Units	mg/l					
RWQS	0.01					
RWQS Type	DWS					
LOD	0.006					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	0.06	0.01	690.90	153.53	630.00	140.00
CP05	0.08	0.01	822.50	149.88	750.00	136.67
CP06	0.04	0.01	416.73	99.19	380.00	90.44
BH1/19	0.01	0.01	65.80	65.80	60.00	60.00
BH2/19	0.01	0.01	65.80	65.80	60.00	60.00
BH3/19	0.01	0.01	65.80	65.80	60.00	60.00
Determinand	Sodium					
Units	mg/l					
RWQS	200					
RWQS Type	DWS					
LOD	U					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	13.90	10.97	96.94	76.47	6.95	5.48
CP05	30.70	28.63	214.10	199.65	15.35	14.31
CP06	11.40	9.82	79.50	68.49	5.70	4.91
BH1/19	9.16	8.77	63.88	61.16	4.58	4.39
BH2/19	11.30	10.95	78.80	76.36	5.65	5.48
BH3/19	17.50	16.90	122.04	117.86	8.75	8.45
Determinand	Total Oxidised Nitrogen					
Units	mg/l					
RWQS	50					
RWQS Type	DWS					
LOD	U					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	2.18	1.49	110.73	75.68	4.36	2.98
CP05	5.38	2.96	273.26	150.42	10.76	5.92
CP06	1.34	0.64	68.06	32.58	2.68	1.28
BH1/19	0.35	0.34	17.78	17.27	0.70	0.68
BH2/19	6.54	3.60	332.18	182.85	13.08	7.20
BH3/19	3.75	2.78	190.47	141.20	7.50	5.56
Determinand	Suspended Solids					
Units	mg/l					
RWQS	25					
RWQS Type	ADW					
LOD	U					

Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	4300.00	2652.86	81.61	50.35	17200.00	10611.43
CP05	3900.00	1732.86	74.02	32.89	15600.00	6931.43
CP06	11000.00	2677.14	208.78	50.81	44000.00	10708.57
BH1/19	10000.00	8750.00	189.80	166.07	40000.00	35000.00
BH2/19	490.00	300.00	9.30	5.69	1960.00	1200.00
BH3/19	19000.00	15500.00	360.61	294.18	76000.00	62000.00
Determinand	Zinc					
Units	mg/l					
RWQS	5					
RWQS Type	DWS					
LOD	U					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	1.20	0.28	1516.50	347.67	24.00	5.50
CP05	0.47	0.10	593.96	130.59	9.40	2.07
CP06	0.30	0.09	380.39	114.16	6.02	1.81
BH1/19	0.00	0.00	2.53	2.53	0.04	0.04
BH2/19	0.002	0.002	2.53	2.53	0.04	0.04
BH3/19	0.002	0.002	2.53	2.53	0.04	0.04
Determinand	Lead					
Units	mg/l					
RWQS	0.01					
RWQS Type	DWS					
LOD	0.004					
Piezometer	Maximum	Mean	Maximum as % of Aquifer Mean	Mean as % of Aquifer Mean	Maximum as % of RWQS	Mean as % RWQS
CP01	0.004	0.004	100.00	100.00	40.00	40.00
CP05	0.004	0.004	100.00	100.00	40.00	40.00
CP06	0.004	0.004	100.00	100.00	40.00	40.00
RWQS: Regulatory Water Quality Standard, DWS: UK Drinking Water Standard (2000), WHO: World Health Organisation (1984), ADW: UK Surface Waters, Abstraction for Drinking Water, 1996, U: Unknown, NS: No Standard, LOD: Limit of Detection						

Discussion

2.10.2.9 The available data demonstrates groundwaters present within the Aquifer to feature near neutral pH with relatively low electrical conductivity and below saturation dissolved oxygen.

2.10.2.10 The majority of tested determinands returned concentrations within expected background ranges and within the RWQS (where applicable). This includes a number of determinands which were typically recorded below the relevant LOD. This includes Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD), the latter two of which are qualitative indicators of water quality with regards to organic pollution.

2.10.2.11 Ammonical Nitrogen concentrations were typically observed below the LOD, though are routinely present at low concentrations, this being in excess of the RWQS on one occasion. This is likely attributable agricultural fertiliser use / de-icer use at the adjacent airport (which may also have contributed to occasional exceedance of the RWQS for Phosphate).

2.10.2.12 Arsenic concentrations were typically recorded below the LOD, though were occasionally observed in excess of the RWQS, this being consistent across the Site. This

is anticipated to be attributable to natural background concentrations derived from the oxidation of pyrite within the PF clays.

2.10.2.13 Cadmium and Chromium concentration were typically observed below the LOD with the exception of the initial sampling round at CP01 only. It is assumed that this may have resulted from the drilling process, with the source of these concentrations since having been flushed out via sampling.

2.10.2.14 Molybdenum was recorded in excess of the RWQS across the Site though on one sampling round only, being more typically recorded at or below the LOD. This is potentially attributable to sample contamination.

2.10.2.15 Manganese concentrations regularly breach the RWQS where detected. This is likely related to naturally occurring soil leaching, with elevated concentrations at CP01 potentially being attributable to its monitoring the Upper Aquifer only.

2.10.2.16 Nickel concentrations were recorded to be elevated across the Site, regularly breaching the RWQS. Nickel is commonly derived from stainless steel and its presence may be attributable to sampling equipment / borehole construction.

2.10.2.17 Suspended solids concentrations were shown to be high and in routine excess of the RWQS. This is likely to be attributable to the disturbance of basal sediments within the boreholes during sampling.

2.10.2.18 Barium, Antimony, Selenium and Mercury concentrations were also observed in periodic excess of the relevant RWQS.

2.10.2.19 Total Petroleum Hydrocarbons (TPH) were typically recorded at the LOD (though this in itself is in excess of the RWQS, as with Phenols and Poly Aromatic Hydrocarbons, PAHs), though when detected, were in significant excess of the RWQS across the whole Site. This is potentially attributable to the operation of light aircraft at the adjacent airport, which regularly results in the disposal of small volumes of aviation fuel to ground following fuel testing.

2.10.3 Surface Water Quality

WFD Classifications

2.10.3.1 The Site falls within the Stour Dorset Operational Catchment of the Dorset Management Catchment of the South West River Basin District, bridging both the Stour (Lower) and Moors waterbodies.

2.10.3.2 The Stour (Lower) waterbody has an ecological classification of ‘Moderate’ (due to biological and physio-chemical quality elements), and a chemical classification of ‘Good’.

2.10.3.3 The Moors waterbody has an ecological classification of ‘Moderate’ (due to biological quality elements), and a chemical classification of ‘Good’.

Surface Water Quality Data

The Available Data

2.10.3.4 Surface water quality data has been collected at the Site by HHDED from 2 no. sample locations (SWS1 and SWS2, *figure 11*), as present upon the Southern Stream and Leaden Stour, up and down stream of the Site respectively. The available data covers the period December 2017 to April 2018.

2.10.3.5 Tabulated surface water quality data for samples obtained from the Leaden Stour / Southern Stream are provided at *appendix 4* with laboratory certificates included at *appendix 5*.

2.10.3.6 *Table 10* below shows average and maximum concentrations for a selected number of representative chemical species established from the data for the Leaden Stour / Southern Stream.

2.10.3.7 Average and maximum values for each location for each species are also expressed as a percentage of the average established for the dataset as a whole and of the most relevant RWQS. Species concentrations above RWQS are shaded red. Where concentrations are in excess of the LOD, this value has been assumed.

Table 10 Baseline Surface Water Quality Data						
Determinand	Temperature					
Units	°C					
RWQS	NS					
RWQS Type	NS					
LOD	U					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	11.2	7.01	165.04	103.23	NS	NS
SWS2	10.3	6.57	151.77	96.77	NS	NS
Determinand	pH					
Units	pH units					
RWQS	NS					
RWQS Type	NS					
LOD	U					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	7.03	6.52	106.26	98.56	NS	NS
SWS2	7.15	6.71	108.07	101.44	NS	NS
Determinand	Electrical Conductivity					
Units	µs.cm-1					
RWQS	2500					
RWQS Type	DWS					
LOD	U					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	234.4	185.05	107.94	85.22	9.38	7.40
SWS2	274	249.25	126.18	114.78	10.96	9.97
Determinand	Dissolved Oxygen					
Units	%					
RWQS	NS					
RWQS Type	NS					
LOD	U					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	71.7	49.65	172.90	119.73	NS	NS
SWS2	70.1	33.29	169.04	80.27	NS	NS
Determinand	Eh Redox					

Units	mV					
RWQS	NS					
RWQS Type	NS					
LOD	U					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	27.3	9.35	439.53	150.54	NS	NS
SWS2	17.3	3.07	278.53	49.46	NS	NS
Determinand	Ammoniacal Nitrogen					
Units	mg/l					
RWQS	0.5					
RWQS Type	DWS					
LOD	0.02					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	0.17	0.04	295.65	62.80	34.00	7.22
SWS2	0.5	0.08	869.57	137.20	100.00	15.78
Determinand	Arsenic					
Units	mg/l					
RWQS	0.01					
RWQS Type	DWS					
LOD	0.003					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	0.373	0.03	1283.75	89.67	3730.00	260.56
SWS2	0.477	0.03	1641.68	110.33	4770.00	320.56
Determinand	Barium					
Units	mg/l					
RWQS	0.1					
RWQS Type	DWS					
LOD	U					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	0.215	0.03	638.53	101.80	215.00	34.28
SWS2	0.128	0.03	380.15	98.20	128.00	33.06
Determinand	Cadmium					
Units	mg/l					
RWQS	0.005					
RWQS Type	DWS					
LOD	0.0008					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	0.0008	0.00	201.40	92.31	16.00	7.33
SWS2	0.0014	0.000	352.45	107.69	28.00	8.56
Determinand	Chloride					
Units	mg/l					
RWQS	250					
RWQS Type	DWS					
LOD	U					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	27.2	21.97	113.78	91.89	10.88	8.79
SWS2	36.6	25.84	153.10	108.11	14.64	10.34
Determinand	Chromium					
Units	mg/l					
RWQS	0.05					
RWQS Type	DWS					
LOD	0.001					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS

SWS1	0.002	0.001	156.52	95.65	4.00	2.44
SWS2	0.003	0.001	234.78	104.35	6.00	2.67
Determinand	Copper					
Units	mg/l					
RWQS	2					
RWQS Type	DWS					
LOD	0.001					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	0.004	0.001	248.28	75.86	0.20	0.06
SWS2	0.013	0.002	806.90	124.14	0.65	0.10
Determinand	Dissolved Organic Carbon					
Units	mg/l					
RWQS	NS					
RWQS Type	NS					
LOD	U					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	24.1	10.61	217.54	95.79	NS	NS
SWS2	29.5	11.54	266.29	104.21	NS	NS
Determinand	Fluoride					
Units	mg/l					
RWQS	1.5					
RWQS Type	DWS					
LOD	0.01					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	0.35	0.06	510.12	88.26	23.33	4.04
SWS2	0.36	0.08	524.70	111.74	24.00	5.11
Determinand	Mercury					
Units	mg/l					
RWQS	0.001					
RWQS Type	DWS					
LOD	0.0001					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	0.0001	0.00	94.74	94.74	10.00	10.00
SWS2	0.0003	0.0001	284.21	105.26	30.00	11.11
Determinand	Molybdenum					
Units	mg/l					
RWQS	0.07					
RWQS Type	WHO					
LOD	0.0004					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	0.0999	0.0060	1817.28	108.74	142.71	8.54
SWS2	0.0808	0.01	1469.83	91.26	115.43	7.17
Determinand	Total PAHs					
Units	mg/l					
RWQS	0.0001					
RWQS Type	DWS					
LOD	0.2					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	0.2	0.20	100.00	100.00	200000.00	200000.00
SWS2	0.2	0.20	100.00	100.00	200000.00	200000.00
Determinand	Total Phenols					
Units	mg/l					
RWQS	0.0005					
RWQS Type	DWS					

LOD	0.01					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	0.01	0.01	100.00	100.00	2000.00	2000.00
SWS2	0.01	0.01	100.00	100.00	2000.00	2000.00
Determinand	Sulphate					
Units	mg/l					
RWQS	250					
RWQS Type	DWS					
LOD	U					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	56.7	31.43	193.57	107.31	22.68	12.57
SWS2	37	27.15	126.32	92.69	14.80	10.86
Determinand	Total Dissolved Solids					
Units	mg/l					
RWQS	NS					
RWQS Type	NS					
LOD	U					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	295	190.28	145.98	94.16	NS	NS
SWS2	290	213.89	143.51	105.84	NS	NS
Determinand	TOC (Total Organic Carbon)					
Units	mg/l					
RWQS	NS					
RWQS Type	NS					
LOD	2					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	33.1	13.94	192.51	81.09	NS	NS
SWS2	62.3	20.45	362.34	118.91	NS	NS
Determinand	Total TPH					
Units	mg/l					
RWQS	0.3					
RWQS Type	WHO					
LOD	25					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	48	27.97	175.88	102.49	16000.00	9324.07
SWS2	40.5	26.61	148.40	97.51	13500.00	8870.37
Determinand	Antimony					
Units	mg/l					
RWQS	0.005					
RWQS Type	DWS					
LOD	0.003					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	0.003	0.00	70.59	70.59	60.00	60.00
SWS2	0.013	0.006	305.88	129.41	260.00	110.00
Determinand	BOD					
Units	mg/l					
RWQS	NS					
RWQS Type	NS					
LOD	4					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	4	4.00	93.13	93.13	NS	NS

SWS2	6.36	4.59	148.08	106.87	NS	NS
Determinand	Boron					
Units	mg/l					
RWQS	1					
RWQS Type	DWS					
LOD	0.2					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	0.2	0.20	100.00	100.00	20.00	20.00
SWS2	0.2	0.20	100.00	100.00	20.00	20.00
Determinand	Calcium					
Units	mg/l					
RWQS	250					
RWQS Type	DWS					
LOD	U					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	44.9	40.45	96.02	86.50	17.96	16.18
SWS2	60.8	53.08	130.02	113.50	24.32	21.23
Determinand	COD					
Units	mg/l					
RWQS	NS					
RWQS Type	NS					
LOD	1.5					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	123	47.85	343.70	133.71	NS	NS
SWS2	32.7	23.73	91.37	66.29	NS	NS
Determinand	Magnesium					
Units	mg/l					
RWQS	50					
RWQS Type	DWS					
LOD	U					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	3.61	3.31	103.22	94.57	7.22	6.62
SWS2	3.86	3.69	110.36	105.43	7.72	7.38
Determinand	Manganese					
Units	mg/l					
RWQS	0.05					
RWQS Type	DWS					
LOD	0.04					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	0.054	0.04	81.20	65.41	108.00	87.00
SWS2	0.158	0.09	237.59	134.59	316.00	179.00
Determinand	Nickel					
Units	mg/l					
RWQS	0.02					
RWQS Type	DWS					
LOD	U					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	0.0084	0.01	124.21	109.43	42.00	37.00
SWS2	0.0073	0.01	107.95	90.57	36.50	30.63
Determinand	PCBs					
Units	mg/l					
RWQS	NS					
RWQS Type	NS					
LOD	1					

Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	1	1.00	100.00	100.00	NS	NS
SWS2	1	1.00	100.00	100.00	NS	NS
Determinand	Phosphate					
Units	mg/l					
RWQS	0.4					
RWQS Type	ADW					
LOD	0.02					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	0.02	0.02	25.53	25.53	5.00	5.00
SWS2	0.37	0.14	472.34	174.47	92.50	34.17
Determinand	Selenium					
Units	mg/l					
RWQS	0.01					
RWQS Type	DWS					
LOD	0.006					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	0.022	0.01	112.82	60.26	220.00	117.50
SWS2	0.091	0.03	466.67	139.74	910.00	272.50
Determinand	Sodium					
Units	mg/l					
RWQS	200					
RWQS Type	DWS					
LOD	U					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	15.6	14.53	99.21	92.37	7.80	7.26
SWS2	18.1	16.93	115.10	107.63	9.05	8.46
Determinand	Total Oxidised Nitrogen					
Units	mg/l					
RWQS	50					
RWQS Type	DWS					
LOD	U					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	1.47	0.74	155.35	78.28	2.94	1.48
SWS2	2.52	1.15	266.31	121.72	5.04	2.30
Determinand	Suspended Solids					
Units	mg/l					
RWQS	25					
RWQS Type	ADW					
LOD	U					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	23	12.50	88.46	48.08	92.00	50.00
SWS2	92	39.50	353.85	151.92	368.00	158.00
Determinand	Zinc					
Units	mg/l					
RWQS	5					
RWQS Type	DWS					
LOD	U					
Location	Maximum	Mean	Maximum as % of Local Mean	Mean as % of Local Mean	Maximum as % of RWQS	Mean as % RWQS
SWS1	0.037	0.03	113.85	96.15	0.74	0.63
SWS2	0.057	0.03	175.38	103.85	1.14	0.68

RWQS: Regulatory Water Quality Standard, DWS: UK Drinking Water Standard (2000), WHO: World Health Organisation (1984), ADW: UK Surface Waters, Abstraction for Drinking Water, 1996, U: Unknown, NS: No Standard, LOD: Limit of Detection

Discussion

2.10.3.8 The available data shows surface water quality to feature near neutral pH with high dissolved Oxygen and relatively low electrical conductivity.

2.10.3.9 The majority of tested determinands returned concentrations within expected background ranges and within the RWQS (where applicable). This includes a number of determinands which were typically recorded below the relevant LOD.

2.10.3.10 BOD and COD, both of which are qualitative indicators of water quality with regards to organic pollution, were recorded to be typically elevated relative to groundwater quality, likely being attributable to the rural catchment of the Leaden Stour / Southern Stream. This was also the case for Dissolved Organic Carbon.

2.10.3.11 Arsenic concentrations were typically recorded at the LOD but significantly breached the RWQS where detected. This is in agreement with the available groundwater quality data and is likely due to the presence of PF clays within the Leaden Stour / Southern Stream catchment.

2.10.3.12 Manganese concentrations were shown to be elevated at both sample locations and were detected in excess of the RWQS. This is in agreement with the available groundwater quality data and is likely due to leaching from soils.

2.10.3.13 Suspended solids concentrations were typically observed to be relatively low, though breached the RWQS on two occasions at location SWS2. This may potentially be due to high / turbid flows at the time of sampling or sediment disturbance during sample collection.

2.10.3.14 Molybdenum, Antimony and Selenium concentrations were also observed in periodic excess of the relevant RWQS.

2.10.3.15 Total Petroleum Hydrocarbons (TPH) were typically recorded at the LOD (though this in itself is in excess of the RWQS, as with Phenols and Poly Aromatic Hydrocarbons, PAHs), though when detected, were in significant excess of the RWQS across the whole Site. This is in agreement with the available groundwater quality data.

2.10.4 Potential Sources of Pre-existing contamination

Landfill Sites

2.10.4.1 The locations of local operational and historical landfills are illustrated at *figure 17;* outline details for which are at *table 11*.

2.10.4.2 Data supplied by the EA confirms that there are no operational or recorded historic landfills within or directly abutting the Site.

2.10.4.3 The majority of local landfills are identified to be upon the southern side of the River Stour and are thus effectively hydraulically isolated from the Site. The remaining sites, Parley Court Farm, Chapel Lane and Avon Common Landfill, are all located at distance from the Site, with the former having receive only inert wastes, and the latter two being

yet to receive any wastes (with no biodegradable waste acceptance permitted in future).

Table 11 Summary Detail for Landfill in the Vicinity of the Site

Identification	Distance (km)*	Operator	Status	Class	Note
Adjacent Muscliff Purification Works	0.6km SW	Unknown	Historic		Operator and content unknown
Hicks Farm	1km S	Unknown	Historic		Operator and content unknown
Riverside Area	1.2km SW	Unknown	Historic		Operator and content unknown
Throop Mill Car Park	1.2km S	Unknown	Historic		Operator and content unknown
Throop House	1.2km S	M Gardner	Active	I, C&I	A05: Non-biodegradable wastes
Avon Common Landfill	1.3km NW	Tarmac Limited	Active	I, C&I	A05: Non-biodegradable wastes
Parley Court Farm	1.6km NW	Sita products and Services Ltd	Historic	I	
Chapel Lane	1.65km NW	Suez UK	Active	I	L05: Inert Landfill, No waste received to date
Land North of Stockhouse	2.5km NW	Unknown	Historic		Operator and content unknown
North of Whitelegg Way	2.5km NW	Unknown	Historic		Operator and content unknown
New Road North of Sewage Works	2.6km SW	Unknown	Historic		Operator and content unknown
Bradpole Road Recreation	2.6km S	Unknown	Historic		Operator and content unknown

*= At shortest distance between Proposed Development and protected site.

3 CONCEPTUAL HYDROGEOLOGICAL MODEL

3.1 The Site is underlain by 2-7m of the sands and gravels of the RTD, which is in turn underlain by some 30-160m of the sands, silts and clays of the PF.

3.2 The RTD form an unconfined superficial aquifer (the Upper Aquifer) featuring diffuse, intergranular groundwater flow and rapid, vertical recharge.

3.3 The PF also forms an unconfined aquifer (the Lower Aquifer) featuring diffuse, intergranular groundwater flow and rapid vertical recharge. Low permeability silt / clay horizons present within the PF form poorly interconnected aquicludes of limited extent which serve to retard infiltration and reduce vertical permeability where present.

3.4 The presence of low permeability horizons within the Lower Aquifer can exert a strong control on groundwaters at the local scale, potentially leading to the presence of perched groundwaters within the unsaturated zone and confined conditions at depth. All incident recharge waters are ultimately considered to contribute to the Aquifer saturated zone.

3.5 The discontinuous nature of the PF aquicludes and the lack of a continuous aquiclude at the interface of the RTD and PF allows the Upper Aquifer and Lower Aquifer to feature a high degree of hydraulic continuity, effectively functioning as a single aquifer unit (the Aquifer) with the regional LC aquiclude forming its base.

3.6 The Aquifer is of regional extent with its boundaries being formed by the limit of its distribution. Major local watercourses (such as the River Stour, River Avon and Moors River, are however considered to form internal boundaries as they gain flow from the Aquifer (groundwater flows being towards and in line with these features).

3.7 Groundwater flows within the Site are seen to be made to the south and east, from the bulk of the Aquifers distribution upon the plateau occupied by Bournemouth Airport, towards and in line with the Moors River and River Stour.

3.8 Groundwater levels within the Aquifer as present at the Site are seen to typically range from 3.34maOD to 9.23maOD, ranging by an average of 1.52m at individual locations.

3.9 Within the Proposed Development area, minimum unsaturated thickness is seen to range from 3.4 to 1.9m, thinning to the south.

3.10 Aquifer permeability is relatively high (estimated at between 1m/d and 6m/d), though vertical permeability is likely to be relatively low within the PF due to the presence of silt / clay horizons.

3.11 The Aquifer is known to support local licenced abstractions though no SPZs are present within the Study Area.

4 THE HRA1 RECOVERY OPERATION

4.1 Overview

4.1.1 The HRA1 Recovery Operation details restoration of the Site as consented by the Permission (return of the Western Extension to approximately original ground elevations via placement of imported inert materials solely within the Aquifer unsaturated zone).

4.1.2 As discussed at *section 2.3*, current Site operations involve the sequential working of the Western Extension in 5 discrete phases as at *figure 2.* The works will be progressed to a depth not exceeding 7maOD and maintaining a 0.5m standoff from maximum recorded groundwater elevations (in line with Permission conditions). This is to result in a base of workings as estimated at *figure 18*, ranging from 8.8maOD to 7.1maOD, falling to the south.

4.1.3 The base of workings within each phase will be compacted prior to the progressive placement of infill materials following on from the phased mineral extraction of the Site. This will then be covered via the replacement of stripped and stored soils native to the Site, ultimately returning the Western Extension to approximately original ground elevations.

4.2 Lining System

4.2.1 The HRA1 Recovery Operation is to partially penetrate the unsaturated zone of The Aquifer. No in-situ geological barrier will thus be present upon the base of workings.

4.2.2 EA guidance for the deposit of inert wastes onto land[13] details requirement for provision of an artificial EBS under such circumstances, this being of equivalent attenuating effect to a 1m thick liner of permeability $1*10^{-7}$m/s (the Design Standard).

4.2.3 The same EA guidance however states that where demonstrated appropriate (no potential hazard presented by infill), completion without use of an EBS may be permissible.

4.2.1.1 Initial assessment will simulate the placement of inert infill materials directly upon the base of workings following compaction of the in-situ basal Aquifer materials only (assumed of hydraulic properties equivalent to in situ Aquifer material). If demonstrated permissible, this method of completion will be adopted by HRA1.

4.2.1.2 If required, this will be followed by description of, and further assessment simulating formation of, an artificial EBS encompassing the base and sidewalls of the Western Extension.

4.3 Capping

4.3.1 Other than emplacement of soil cover, no engineered capping system has been specified or will be required for the HRA1 Recovery Operation.

13 Environment Agency, 'Environmental Permitting Regulations: Inert Waste Guidance, Standards and Measures for the Deposit of Inert Waste Onto Land'

4.4 Extent, Depth and Elevation of Infilling

4.4.1 As at *figure 2*, the phased working of the 15.7ha Western Extension area involves mineral extraction, and thus subsequent infilling, over an area of some 12.1ha.

4.4.2 As at *figure 18*, this is to be to a depth ranging from 8.8maOD to 7.1maOD, falling southwards.

4.4.3 Comparison of the base of workings to current (and thus post restoration) ground elevations, has allowed estimation of the thickness of deposited infill as at *figure 19*, being shown to range from 1.5m to 2.6m (to average 1.98m), being thickest upon the eastern and western boundaries. This represents an estimated volume of deposited materials of some 358,950 tonnes (to include lining materials if required).

4.5 Waste Types

4.5.1 The site will be permitted to accept inert wastes only. Inert wastes are defined by the Landfill Directive (1999/31/EC), article 2(e) as: '*waste that does not undergo any significant physical, chemical or biological transformations. Inert waste will not dissolve, burn or otherwise physically or chemically react, biodegrade or adversely affect other matter with which it comes into contact in a way likely to give rise to environmental pollution or harm human health. The total leachability and pollutant content of the waste and the ecotoxicity of the leachate must be insignificant, and in particular not endanger the quality of surface water and / or groundwater*'.

4.5.2 Section 2.1.1 of the 2002 Council Decision (The Council Decision), *'Establishing Criteria and Procedures for the Acceptance of Waste at Landfills Pursuant to Article 16 of and Annex II to Directive 1999/31/EC' (the Landfill Directive)*, lists a number of waste types that are considered inert without need for testing (subject to being single stream of a single waste type or combination of types).

4.5.3 Other waste types are also classified as inert provided that they meet the leaching limit values (determined by testing) outlined at section 2.1.2.1 of the Council Decision.

4.5.4 It is proposed that all such wastes will meet with the above criteria, and any accepted wastes that are not listed at Section 2.1.1 of the Council decision will be tested to ensure compliance with section 2.1.2.1 of that decision (where necessary).

4.6 Leachate Management

4.6.1 Assuming full implementation of control and compliance procedures, the imported wastes will be inert and therefore incapable of producing potentially contaminating leachate. Leachate management will thus not be required.

5 HRA1 CONCEPTUAL SITE MODEL

5.1 Background

5.1.1.1 The principal elements of the HRA1 Recovery Operation and its hydrogeological setting, which together comprise the Source-Pathway-Receptor model to be quantified at HRA1, are described below.

5.1.1.2 A simplified visual representation of the CSM is presented at *figure 20,* with cross sections and schematic representation being provided at *figure 21*.

5.2 Source

5.2.1 The source of potential contamination for the purposes of HRA1 is the full extent of the HRA1 Recovery Operation, as illustrated at *figure 19* (encompassing all areas of the Western Extension that are scheduled for mineral extraction).

5.2.2 Potential leachate is represented at HRA1 by chemical species selected from the EA's 18-no. (leaching test specific[14]) determinand Waste Acceptance Criteria (WAC) schedule for inert wastes[15] with the addition of ammoniacal nitrogen.

5.2.3 Given the inert nature of infill to be deposited, ammoniacal nitrogen would not be expected to be generated at HRA1, as reflected by its absence with the EA's schedule of inert WAC limits. It has however been included as this species is commonly expected to be included at HRA by the EA.

5.2.4 In lieu of sufficient leaching test data for inert material streams specific to the HRA1 Recovery Operation, for all chemical species excepting ammoniacal nitrogen, lower limit concentrations for the selected species have been defined by reference to WAC results of materials tested as part of proposals for excavation to landfill associated with the re-development of the former Battersea power station[16].

5.2.5 In view of the industrial history of the Battersea Site, selection of these WAC results to represent lower-limit leachate concentrations within the HRA1 Recovery Operation represents a conservative (*i.e.* tending toward worst-case) approach to HRA.

5.2.6 Upper limit concentrations for the source term species selected for HRA have been ascribed by reference to their statutory maximum WAC limits and thus implicitly represents a worst-case approach to assessment.

5.2.7 No relevant ammoniacal nitrogen leaching data are available; neither is there a WAC limit set for this species.

5.2.8 In lieu of this information, the EA have previously advised that the source term concentrations for ammoniacal nitrogen should be based upon prevailing worst-case values derived from the groundwater quality data-set for the Site; upper and lower

14 BS EN 12457.

15 As transposed from Council Decision annex 2003/33/EC).

16 "Site Investigation Report, Battersea Power Station", Concept Site Investigations for Battersea Project Land Company, report reference 13/25/25-FR02, dated 13/08/13. Investigations comprised 40-no. 2-part batch leaching tests (performed in accordance with BSEN 12457/3) upon samples obtained from 4-no. site investigation boreholes and 23-no. trial pits as part of proposed excavations and presumed deposit to landfill. Summary data is included here at appendix 6.

source term values for ammoniacal nitrogen have thus been based upon the groundwater quality data established at *section 2.10.2*.

5.2.9 The screening and selection of determinands representing the inert source at HRA1 is presented at *table 12*. This has been undertaken to ensure that modelled determinands include those suitable for accurate characterisation at HRA1, and for subsequent derivation of control / compliance measures. Determinands not meeting these requirements, though considered necessary for inclusion as key determinands, or to provide a representative spread of potential contaminants, have also been selected.

Table 12 HRA1 Determinand Screening and Selection, Inert Source

Determinand	Note	Selection (Yes / No)
Arsenic	Baseline water quality exceeds RWQS. Selected as considered key determinand.	Y
Barium	Baseline water quality exceeds RWQS.	N
Cadmium	Baseline water quality exceeds RWQS.	N
Chromium	Source term data exceeds WAC.	N
Copper	Meets data availability / WAC & RWQS limit requirements.	Y
Mercury	Baseline water quality exceeds RWQS. Selected as considered key determinand.	Y
Molybedenum	Source term data exceeds WAC.	N
Nickel	Meets WAC limit requirements though baseline quality exceeds RWQS.	Y
Lead	Insufficient baseline water quality data available.	N
Antimony	Source term data exceeds WAC. Baseline water quality exceeds RWQS.	N
Selenium	Source term data exceeds WAC. Baseline water quality exceeds RWQS.	N
Zinc	Meets WAC & RWQS limit requirements.	Y
Chloride	Meets data availability / WAC & RWQS limit requirements.	Y
Fluoride	Source term data exceeds WAC.	N
Sulphate	Source term data exceeds WAC. Selected as considered key determinand.	Y
Total Dissolved Solids	Source term data exceeds WAC.	N
Phenols	Baseline water quality exceeds RWQS.	N
Dissolved Organic Carbon	No RWQS though baseline water quality data includes outliers.	N
Ammonical Nitrogen*	Absent in source term data. Baseline data exceeds RWQS. Selected as considered key determinand.	Y
*Not included in WAC schedule.		

5.2.10 Adopted upper and lower source term concentrations for the selected determinands are presented below at *table 13*.

Table 13 Lower and Upper Source Term Concentrations Adopted by HRA

Chemical	Lower Leachate Concentration*	Upper Leachate Concentration**	Chemical	Lower Leachate Concentration*	Upper Leachate Concentration**
Arsenic	0.0056	0.05	Zinc	0.018	0.4
Copper	0.014	0.2	Chloride	6.47	80
Mercury	0.00007	0.001	Sulphate***	100	600
Nickel	0.0041	0.04	Ammoniacal Nitrogen	0.02	0.42

All units are mg/l.
*: For all determinands excepting ammoniacal nitrogen, these concentrations have been enumerated with the average WAC testing results established for the Battersea re-development site investigations. For ammoniacal nitrogen, the concentration has been set at the lowest recorded value reported by the available baseline groundwater chemistry data.
**: For all determinands excepting ammoniacal nitrogen, these concentrations have been set at the maximum WAC limits permissible for inert waste as specified by regulation. For ammoniacal nitrogen, the concentration has been set at the highest recorded value reported by the available baseline groundwater chemistry data excepting exceedance of RWQS.
***: As detailed in the 2002 Council Decision, Sulphate WAC limits of 1,000 mg/kg can be exceeded up to 6,000mg/kg at L/S10 subject to eluate percolation test concentrations a C0 of 1,500mg/l. The average leachate concentration for sulphate established from the Battersea redevelopment data-set exceeds the upper leachate concentration based upon WAC limits and is therefore discounted from analysis. Sulphate has thus been ascribed a lower leachate concentration based on the 'Lower' WAC limit and an upper leachate concentration based on the 'Upper' WAC limit.
Note 1: the WAC testing data and maximum permissible concentrations specified by regulation are stated in units of mg/kg for solid phase samples obtained using a 10:1 liquid to solid ratio, in an eluate of 10l, as specified by BSEN 12457/3. HRA leachate concentrations have therefore been established in units of mg/l by dividing the WAC concentrations by a factor of 10.
Note 2: To further the conservative approach to HRA, where laboratory concentrations were determined below the LOD, the LOD has been assumed.

5.3 Pathway

5.3.1 The potential pathway for leachate to enter the water environment and processes occurring within that pathway are constituted by several elements, each of which is described in-turn below.

5.3.2 Migration Pathway

5.3.2.1 The potential leachate migration pathway thus simulated by HRA1 is as follows:

- Vertically downwards through the base of the infill material (and EBS where applied).
- Vertically downwards through the Aquifer unsaturated zone to the watertable at depths 0.5m below the base of infill.
- Horizontally down the hydraulic gradient (south-eastwards) within the saturated zone of the Aquifer.

5.3.3 Chemical Retardation (Kd Values)

5.3.3.1 Retardation is assumed to occur in the EBS (where applied), and within both the unsaturated and saturated zones of the Aquifer.

5.3.3.2 Lower and upper values for partition coefficients (Kd values) of individual chemical species have been based upon those presented within the LandSim Manual[17] (the "Manual Value").

17 Golder Associates, 'The Landsim Manual', Environment Agency R&D Publication 120, including 2004 and 2007 addendums.

5.3.3.3 Lower Kd values within the HRA are set at the minimum Manual Value, whilst upper values have been specified at 25% of the maximum Manual Value[18] and thus represent a conservative approach to HRA.

5.3.3.4 The Kd value ranges thus adopted by HRA are shown below at *table 14*.

Table 14 Lower and Upper Partition Coefficients (Kd Values) Adopted by HRA

Chemical	Lower Kd	Upper Kd	Chemical	Lower Kd	Upper Kd
Arsenic	25	62.5	Zinc	1	150
Copper	40	6,875	Chloride*	$1e^{-9}$	
Mercury	450	959	Sulphate*	$1e^{-9}$	
Nickel	20	200	Ammoniacal Nitrogen	0.5	2

All units are l/kg.
*Conservative species, thus no effective retardation assumed.

5.4 Receptors

5.4.1 The controlled waters receptor being assessed is groundwater present within the Aquifer adjacent to the HRA1 Recovery Operation.

5.4.2 In order to assess potential impacts upon this receptor, a Point of Compliance (POC) has been identified immediately down hydraulic gradient from the Recovery Operation, in the form of piezometer BH2/19, *figure 11*.

18 Excepting Kd values for Ammoniacal Nitrogen, which, due to the very limited range advised by the LandSim documentation, are set at the maximum Manual Values.

6 HRA1 RISK ASSESSMENT MODEL

6.1 HRA1 Tier Selection

6.1.1 Although the HRA1 Recovery Operation will receive only inert wastes, initial screening has indicated a requirement for complex quantitative HRA for the following reasons:

- The Secondary Aquifer status of the Aquifer underlying the HRA1 Recovery Operation.
- The proximity of the HRA1 Recovery Operation to the water environment (*i.e.* a known watertable within the Aquifer encompassing the Site).

6.1.2 HRA1 has thus been undertaken using LandSim, a computer-based stochastic risk modelling programme developed by Golder Associates in conjunction with the EA.

6.2 Background

6.2.1 Development of the HRA1 model has included the following steps:

- Definition of, and results from, initial assessment scenario (iHRA1) and modelled input parameters.
- Discussion of requirement for simulation of an EBS and additional assessment in this regard if required.
- Description and results of sensitivity analysis of iHRA1 model (sHRA1).
- Assessment of potential impact of rogue loads on iHRA1 model results (rHRA1).
- Assessment of model results relative to baseline groundwater quality (bHRA1).

6.3 Initial Assessment Scenario (iHRA1)

6.3.1 The initial model ('iHRA1') includes a range of hypothetical conservative input values intended, from the outset, to provide a conservative simulation of potential risk posed to controlled waters by the HRA1 Recovery Operation.

6.3.2 IHRA1 includes an operational stage of the HRA1 Recovery Operation simulated over the 3-years of proposed infilling operations.

6.3.3 The HRA1 Recovery Operation is represented as a single phase, closely reflecting the proposed completion of the Site.

6.3.4 The model simulates a post-closure stage extending 20,000 years. As the wastes to be infilled will be inert, the model does not simulate leachate management.

6.3.5 Representation of the Proposed Development within the modelled LandSim domain (which is rotated 90˚ counter clockwise from National-Grid in order to orient the axes of the Site parallel with the prevailing groundwater flow direction) is shown at *figure 22*.

6.3.2 iHRA1 Model Parameterisation

6.3.2.1 Input parameter values and structural assumptions adopted at iHRA1, together with justifications for their selection are given at *table 15* to *table 20* below.

Table 15 iHRA1 Model Parameterisation: Layout		
Parameter (units)	Value	Justification
Location x (m)	451	Representative area to encompass Site and potential receptors.
Location y (m)	567	
Length x (m)	285	Model dimensions set as representative of designs.
Length y (m)	425	
Duration of Management Control (yrs)	3	From planning and permit application documents.

Table 16 iHRA1 Model Parameterisation: Infiltration		
Parameter (units)	Value	Justification
Infiltration to Open Waste (mm/yr)	158.8	Exposed infill will form closed depression of lower permeability than underlying Aquifer material. Rainfall runoff to temporarily pond on surface prior to infiltration. Set as 100% of Effective Rainfall calculated for open water (*table 6*).
Post Infilling Infiltration mm/yr)	107.4	Effective Rainfall for grassland (*table 6*), plus 10% allowance for climate change, less 65% runoff (see NCB nomogram at *appendix 7*; ground slope: 0.006, restoration to cultivated land / short grass). 279mm x 1.1 x 0.35 = 107.4mm.
End of Infilling (years from commencement of waste disposal)	3	From Planning & Permit Application Documents.

Table 17 iHRA1 Model Parameterisation: Cell Geometry		
Parameter (units)	Value	Justification
Length x at base (m)	279	Model dimensions & phasing set as representative of designs.
Length y at base (m)	419	
Number of Cells	1	
Basal Area (ha)	11.7	
Crest Area (ha)	12.1	
Final Waste Thickness (m)	1.98	
Waste Porosity (fraction)	T: 0.1, 0.2, 0.3	Nominal values taken from literature review.
Waste Dry Density (kg/l)	T: 1.4, 1.5, 1.8	
Waste Field capacity (fraction)	T: 0.1, 0.2, 0.3	
Head of Leachate for Surface Water Breakout (m)	1.7	Model dimensions set as representative of designs.
T: X, Y, Z: Triangular parameter distribution assumed; X, Y, Z representing bounding lower, mid and upper model values.		

Table 18 iHRA1 Model Parameterisation: Leachate Inventory		
Parameter	Value	Justification
Arsenic	LT: 0.0056, 0.028, 0.05	Conservative values ascribed (i.e. tending towards worst-case model prediction. See *section 5.2* for further detail).
Copper	LT: 0.014, 0.11, 0.2	
Mercury	LT: 0.00007, 0.00054, 0.001	
Nickel	LT: 0.0041, 0.022, 0.04	
Zinc	LT: 0.018, 0.21, 0.4	
Chloride	LT: 6.47, 43.24, 80	
Sulphate	LT: 100, 350, 600	
Ammoniacal Nitrogen	LT: 0.02, 0.22, 0.42	
All units are mg/l. LT: X, Y, Z: Log-Triangular parameter distribution assumed; X ,Y, Z representing bounding lower, mid and upper model values. Kappa value constants (C & m values) used in derivation of declining source terms for all chemical species set at LandSim default values.		

Table 19 iHRA1 Model Parameterisation: Unsaturated Pathway		
Parameter (units)	Value	Justification
Geological Unit	Poole Formation	From CHM, informed by piezometer monitoring data and Site design.
Pathway Length	0.5	
Flow Model	Porous Medium	
Moisture Content (fraction)	LT: 0.002 , 0.005, 0.007	Nominal values taken from literature review undertaken as part of formulation of CHM.
Hydraulic Conductivity (m/s)	U: 1.15741e-6, 1.15741e-4	10% of estimated range in lateral conductivity (as in CHM) to represent vertical anisotropy
Vertical Dispersivity (m/s)	0.05	Manual Value (10% of pathway length).
LT: X, Y, Z: Log-Triangular parameter distribution assumed; X, Y, Z representing bounding lower, mid and upper model values. U: X,Y: Uniform parameter distribution along a range with minima ad maxima described by X & Y. Partition coefficients (Kd) used in retardation calculation determined as described at *section 5.3*.		

Table 20 iHRA1 Model Parameterisation: Saturated Pathway		
Parameter (units)	Value	Justification
Geological Unit	Poole Formation	From CHM.
Pathway Length (m)	Minimum: 0.5 Maximum: 285.5	Fixed by LandSim.
Pathway Width (m)	425	From CHM, informed by piezometer monitoring data and Site design.
Aquifer Thickness (m)	U: 90, 160	From CHM.
Relative Vertical Dispersivity (dimensionless)	U: 2.86, 5.71	Range set at between 1% and 2% of Pathway Length
Hydraulic Conductivity (m/s)	U: 1.15741e-5, 1.157407e-3	From CHM.
Regional Gradient (dimensionless)	LT: 0.0044, 0.0046, 0.006	From CHM, informed by piezometer monitoring data.
Pathway Porosity (fraction)	U: 0.25, 0.5	Nominal values taken from literature review undertaken as part of formulation of CHM.
Longitudinal Dispersivity (m)	51.05	Manual Value. 10% of Pathway Length to Locatable Compliance Point.
Transverse Dispersivity (m)	15.315	Manual Value. 30% of value used for Longitudinal Dispersivity.
U: X, Y: Uniform parameter distribution along a range with minima ad maxima described by X & Y. LT: X, Y, Z: Log-Triangular parameter distribution assumed; X, Y, Z representing bounding lower, mid and upper model values. Partition coefficients (Kd) used in retardation calculation determined as described at *section 5.3*.		

6.3.3 iHRA1 Model Results

Head on Engineered Barrier System (EBS)

6.3.3.1 The iHRA model predicts that infiltration rates through the base of infill (as at *appendix 8*), both during infilling and following closure, exceed recharge rates (impediment of infiltration is minor in absence of an EBS). 0m of head generation is thus predicted.

6.3.3.2 There is no indicated risk of surface breakout.

Simulated Leakage Through Engineered Barrier System

6.3.3.3 The iHRA model predicts leakage rates through the base of infill (as at *appendix 8*) as follows:

- For the operational phase of the HRA1 Recovery Operation, leakage is determined at 52.4m^3/d at all confidence intervals.
- For the post closure phase of the HRA1 Recovery Operation, leakage is determined at 35.5m^3/d at all confidence intervals.

6.3.3.4 The reduction in leakage occurs at the 3rd-year of the model simulation, representing the decline in infiltration anticipated following restoration of the HRA1 Recovery Operation's surface to agriculture at the level of surrounding land, thus facilitating substantial runoff from the restored site.

6.3.3.5 Review of modelling output confirms that, given the ascribed parameterisation, the model correctly simulates the volume of leachate generation and leakage throughout the modelled period.

Leachate Source Concentration

6.3.3.6 Predicted declining leachate source concentrations of the 8-no. chemical species included within the numerical model are illustrated at *appendix 8*.

6.3.3.7 Simulated peak and final (20,000-years) source concentrations, together with their relevant RWQS, are presented below at *table 21* in summary.

Table 21 iHRA1 Simulated Source Concentration Within HRA1 Recovery Operation

Species	RWQS (mg/l)	90th Percentile			95th Percentile		
		Peak (mg/l)	Final (mg/l)	Years to <RWQS	Peak (mg/l)	Final (mg/l)	Years to <RWQS
Ammoniacal Nitrogen	0.5	1.93E-01	0	0	2.05E-01	0	0
Arsenic	0.01	2.64E-02	0	57	2.78E-02	0	57
Chloride	250	3.97E+01	0	0	4.17E+01	0	0
Copper	2	9.83E-02	0	0	1.05E-01	0	0
Mercury	0.001	6.44E-04	0	0	7.65E-04	7.71E-05	0
Nickel	0.02	2.11E-02	0	2	2.24E-02	0	3
Sulphate	250	3.49E+02	0	4	3.62E+02	0	4
Zinc	5	1.80E-01	0	0	1.90E-01	0	0

6.3.3.8 At the 90th percentile confidence interval:

- All modelled source concentrations excepting Arsenic, Nickel and Sulphate are immediately below their respective RWQS values.

- Source concentrations for Arsenic, Nickel and Sulphate decline below their respective RWQS values at 57yrs, 2yrs and 4yrs respectively.
- All chemical species are diminished to an effective zero-concentration within the modelled timescale of 20,000-years; with the majority attaining this within a substantially shorter time-period.

6.3.3.9 At the 95th percentile confidence interval:

- All modelled source concentrations excepting Arsenic, Nickel and Sulphate are immediately below their respective RWQS values.
- Source concentrations for Arsenic, Nickel and Sulphate decline below their respective RWQS values at 57yrs, 3yrs and 4yrs respectively.
- All chemical species are diminished to an effective zero-concentration within the modelled timescale of 20,000-years; with the majority attaining this within a substantially shorter time-period (excepting Mercury).

6.3.3.10 These model simulations indicate the likely undiluted and unretarded source term concentrations within the infill itself.

6.3.3.11 The values are not subject to any assessment of environmental acceptability, but instead are given to provide context for the presentation of later modelled simulations illustrating individual chemical species concentrations within leachate draining from the infill.

Concentration in Groundwater

6.3.3.12 Simulated concentrations over time in groundwater immediately downstream of the HRA1 Recovery Operation, for all chemical species under assessment at iHRA1 are illustrated *appendix 8*.

6.3.3.13 Simulated peak and final (20,000-years) concentrations in groundwater, together with relevant RWQS, are presented below at *table 22* in summary.

Table 22 iHRA1 Simulated Concentrations in Groundwater, HRA1 Recovery Operation

Species	RWQS (mg/l)	90th Percentile			95th Percentile		
		Peak (mg/l)	Final (mg/l)	Years to <RWQS	Peak (mg/l)	Final (mg/l)	Years to <RWQS
Ammoniacal Nitrogen	0.5	3.53E-04	1.53E-17	0	4.61E-04	2.91E-17	0
Arsenic	0.01	2.52E-05	2.48E-14	0	2.99E-05	4.81E-11	0
Chloride	250	2.21E-01	1.38E-15	0	3.09E-01	3.02E-15	0
Copper	2	3.72E-07	2.23E-07	0	5.62E-07	2.96E-07	0
Mercury	0.001	2.52E-08	1.14E-08	0	1.58E-07	1.58E-07	0
Nickel	0.02	3.90E-06	3.26E-10	0	4.96E-06	1.19E-08	0
Sulphate	250	2.34E+00	7.18E-15	0	3.55E+00	1.53E-14	0
Zinc	5	2.66E-05	7.25E-11	0	3.56E-05	1.06E-08	0

6.3.3.14 At both the 90th and 95th percentile confidence intervals, none of the modelled chemical species are predicted to exceed RWQS in groundwater immediately adjacent the HRA1 Recovery Operation.

6.3.4 iHRA1 Discussion

6.3.4.1 Initial assessment indicates that completion of the HRA1 Recovery Operation without use of an EBS does not present a potentially significant hazard to groundwater, and completion in this manner is thus adopted for continued assessment.

6.4 Sensitivity Analysis (sHRA1)

6.4.1 Landsim allows deterministic modelling, thus accounting for variability in modelled parameters, as ascribed at iHRA1 in *tables 15* to *20*.

6.4.2 Further sensitivity analysis has been undertaken to examine those parameters with greatest influence upon model simulation, and to account for uncertainty within model parameters where this persists.

6.4.2 sHRA1 Model Parameterisation

6.4.2.1 The variables subject to sensitivity analysis are detailed below at *table 23*. Within each sHRA1 model run, all variables other than those assigned for sensitivity analysis have been maintained at the values described at *section 6.3.2* for iHRA1.

Table 23 sHRA1 Model Parameterisation

Parameter (units)	Model Name	sHRA Value	Justification
Infiltration to Open Waste (mm/yr)	s1HRA1	206.44	Annual average rainfall varies by up to 30% between years, as at *table 5*. 30% increase applied.
Post Infilling Infiltration (mm/yr)		139.62	
Infiltration to Open Waste (mm/yr)	s2HRA1	111.16	Annual average rainfall varies by up to 30% between years, as at *table 5*. 30% decrease applied.
Post Infilling Infiltration (mm/yr)		75.18	
Unsaturated Pathway Hydraulic Conductivity	S3HRA1	U: 1.15741e-5, 1.157407e-3	Vertical anisotropy allowance estimated. Set in line with Aquifer permeability to reflect discontinuous nature of interbedded clays.
Saturated Pathway Hydraulic Conductivity	S4HRA1	U: 1.15741e-5, 6.94444e-5	Range in Aquifer permeability (and constrained vertical permeability at 10% thereof) reduced to reflect representative range from CHM
Unsaturated Pathway Hydraulic Conductivity		U: 1.15741e-6, 6.94444e-6	
Arsenic Kd	S5HRA1	U: 25, 125	Upper Kd values at iHRA set at 25% of Manual Values excepting Chloride and Sulphate. Actual attenuation may exceed this. Set to 50% of Manual Values.
Copper Kd		U: 40, 13750	
Mercury Kd		U: 450, 1918	
Nickel Kd		U: 20, 400	
Zinc Kd		U: 1, 300	
Ammonical N Kd		U: 05, 4	

6.4.3 sHRA1 Model Results

6.4.3.1 Simulated concentrations over time in groundwater immediately downstream of the HRA1 Recovery Operation, for all chemical species under assessment at sHRA1 are illustrated *appendix 8*.

6.4.3.2 The degree of change in simulated concentrations at sHRA1 from that predicted at iHRA1 are presented below at *table 24* in summary.

Table 24 sHRA1 Change in Simulated Concentrations in Groundwater Adjacent the HRA1 Recovery Operation

Model Name	Species	90th Percentile			95th Percentile		
		Change in Peak (mg/l)	Change in Peak (%)	Years to <RWQS	Change in Peak (mg/l)	Change in Peak (%)	Years to <RWQS
s1HRA1	Ammoniacal Nitrogen	4.58E-05	12.97	0	3.70E-05	8.02	0
	Arsenic	1.95E-06	7.75	0	2.21E-06	7.39	0
	Chloride	4.13E-02	18.73	0	4.96E-02	16.05	0
	Copper	8.18E-08	21.97	0	9.95E-08	17.72	0
	Mercury	1.11E-09	4.42	0	4.74E-08	30.00	0
	Nickel	3.93E-07	10.08	0	6.43E-07	12.98	0
	Sulphate	4.76E-01	20.33	0	7.75E-01	21.86	0
	Zinc	4.22E-06	15.88	0	7.73E-06	21.75	0
s2HRA1	Ammoniacal Nitrogen	-6.77E-05	-19.17	0	-8.74E-05	-18.94	0
	Arsenic	-3.96E-06	-15.68	0	-3.54E-06	-11.82	0
	Chloride	-4.72E-02	-21.38	0	-5.97E-02	-19.32	0
	Copper	-7.22E-08	-19.41	0	-1.33E-07	-23.73	0
	Mercury	-4.33E-09	-17.19	0	-8.20E-08	-51.95	0
	Nickel	-5.57E-07	-14.28	0	-5.25E-07	-10.60	0
	Sulphate	-4.67E-01	-19.91	0	-7.23E-01	-20.40	0
	Zinc	-2.60E-06	-9.79	0	-1.98E-07	-0.56	0
s3HRA1	Ammoniacal Nitrogen	-5.63E-06	-1.59	0	3.46E-06	0.75	0
	Arsenic	-8.19E-07	-3.25	0	-2.46E-08	-0.08	0
	Chloride	-7.45E-03	-3.38	0	1.11E-02	3.61	0
	Copper	1.61E-08	4.33	0	-8.46E-09	-1.51	0
	Mercury	1.31E-09	5.20	0	1.37E-06	868.81	0
	Nickel	-1.18E-07	-3.02	0	-1.25E-07	-2.52	0
	Sulphate	3.70E-02	1.58	0	-1.03E-01	-2.89	0
	Zinc	6.60E-06	24.83	0	1.15E-05	32.34	0
s4HRA1	Ammoniacal Nitrogen	4.60E-04	130.27	0	5.02E-04	108.87	0
	Arsenic	2.08E-05	82.32	0	2.23E-05	74.34	0
	Chloride	4.88E-01	221.12	0	5.08E-01	164.61	0
	Copper	5.46E-07	146.83	0	1.06E-06	189.20	0
	Mercury	9.71E-09	38.53	0	1.60E-07	101.31	0
	Nickel	3.22E-06	82.41	0	5.06E-06	102.21	0
	Sulphate	6.15E+00	262.17	0	6.15E+00	173.60	0
	Zinc	3.33E-05	125.17	0	8.09E-05	227.45	0
s5HRA1	Ammoniacal Nitrogen	-9.59E-05	-27.19	0	-1.21E-04	-26.31	0
	Arsenic	-7.79E-06	-30.87	0	-7.77E-06	-25.96	0
	Chloride	0.00E+00	0.00	0	0.00E+00	0.00	0
	Copper	-1.82E-07	-48.94	0	-2.80E-07	-49.79	0
	Mercury	-7.05E-09	-27.98	0	1.41E-06	891.32	0
	Nickel	-1.75E-06	-44.71	0	-2.06E-06	-41.56	0
	Sulphate	0.00E+00	0.00	0	0.00E+00	0.00	0
	Zinc	-1.29E-05	-48.58	0	-1.73E-05	-48.63	0

6.4.4 sHRA1 Discussion

6.4.4.1 Outline findings of the sensitivity analysis are described below at *table 25*.

Table 25 sHRA1 Model Findings

Parameter (units)	Model Name	Discussion	Sensitivity
Infiltration to Open Waste (mm/yr)	s1HRA1	Increases in infiltration rates resulted in slight increases in species concentrations in groundwater, of between 8% and 30% of that indicated at iHRA1. All modelled concentrations remained within RWQS at all times.	Low
Post Infilling Infiltration (mm/yr)			
Infiltration to Open Waste (mm/yr)	s2HRA1	Decreases in infiltration rates resulted in slight decreases in species concentrations in groundwater, of between 0.5% and 52% of that indicated at iHRA1. All modelled concentrations remained within RWQS at all times.	Low
Post Infilling Infiltration (mm/yr)			
Unsaturated Pathway Hydraulic Conductivity	S3HRA1	Increases in unsaturated pathway hydraulic conductivity typically resulted in minor variation in species concentrations in groundwater, of between -2.9% and 3.6% of that indicated at iHRA1. A more significant increase in Zinc concentrations, and a major increase in Mercury concentrations were however observed. All modelled concentrations remained within RWQS at all times.	High
Saturated Pathway Hydraulic Conductivity	S4HRA1	Decreases in pathway hydraulic conductivity resulted in a moderate increase in species concentrations in groundwater of between 74% and 227% of that indicated at iHRA1. All modelled concentrations remained within RWQS at all times.	Moderate
Unsaturated Pathway Hydraulic Conductivity			
Arsenic Kd	S5HRA1	Increases in Kd values typically resulted in slight decreases in species concentrations in groundwater, of between -26% and -50% of that indicated at iHRA1. A major increase in Mercury concentrations was however observed. All modelled concentrations remained within RWQS at all times.	High
Copper Kd			
Mercury Kd			
Nickel Kd			
Zinc Kd			
Ammonical N Kd			

6.4.4.2 Sensitivity analysis has identified varying degrees of sensitivity to modelled parameters. Areas of high sensitivity are however limited to specific chemical species (Mercury), and variation of these parameters has at no time indicated the HRA1 Recovery Operation to pose an unacceptable risk to groundwater quality.

6.5 Rogue Load Assessment (rHRA1)

6.5.1 An assessment of the potential for impact on the Aquifer that could result from the deposition of materials exceeding the WAC limits applicable to the Site (Rogue Loads) has been undertaken.

6.5.2 The iHRA1 model has been repeated for a hypothetical scenario wherein all wastes deposited contain species concentrations set in line with C_0 percolation test values as defined within the Council Decision.

6.5.3 C_0 percolation test values for inert materials are representative of the initial flush of contaminants following their placement. As the full waste mass will not be deposited simultaneously, and C_0 values would not be expected to persist for sustained duration, application of such source term concentrations across the full infill mass for the full model duration represents significant exceedance of WAC limits, presenting a conservative approach for the estimation of the potential impacts of rogue load deposition.

6.5.2 rHRA1 Model Parameterisation

6.5.2.1 The variables subject to rogue load assessment are detailed below at *table 26*. All variables other than those assigned for such analysis have been maintained at the values described at *section 6.3.2* for iHRA1.

Table 26 rHRA1 Model Paramaterisation: Source Term Concentrations

Chemical	Source Concentration (% change from iHRA Upper Value)	Chemical	Source Concentration (% change from iHRA Upper Value)
Arsenic	0.06 (20)	Zinc	1.2 (200)
Copper	0.6 (200)	Chloride	460 (475)
Mercury	0.002 (100)	Sulphate	1,500 (150)
Nickel	0.12 (200)	Ammoniacal Nitrogen*	0.63 (50)

All units are mg/l.
*: Ammoniacal Nitrogen concentrations have been derived from Site monitoring data and are increased by 50% for the purposes of Rogue Load assessment in lieu of their inclusion within the Council Decision.
All source term concentrations ascribed as single value.

6.5.3 rHRA1 Model Results

6.5.3.1 Simulated concentrations over time in groundwater immediately downstream of the HRA1 Recovery Operation, for all chemical species under assessment at rHRA1 are provided at *appendix 8*.

6.5.3.2 The degree of change in simulated concentrations at rHRA1 from that predicted at iHRA1 are presented below at *table 27* in summary.

Table 27 rHRA1 Change in Simulated Concentrations in Groundwater Adjacent the HRA1 Recovery Operation

Model Name	Species	90th Percentile			95th Percentile		
		Change in Peak (mg/l)	Change in Peak (%)	Years to <RWQS	Change in Peak (mg/l)	Change in Peak (%)	Years to <RWQS
rHRA1	Ammoniacal Nitrogen	1.05E-03	297.56	0	1.27E-03	274.97	0
	Arsenic	1.30E-05	51.59	0	1.62E-05	54.24	0
	Chloride	2.70E+00	1222.18	0	3.80E+00	1229.37	0
	Copper	1.57E-06	423.21	0	2.12E-06	377.00	0
	Mercury	1.12E-08	44.29	0	-1.16E-07	-73.64	0
	Nickel	8.00E-06	205.01	0	1.06E-05	214.18	0
	Sulphate	9.52E+00	406.30	0	1.39E+01	391.11	0
	Zinc	1.55E-04	582.92	0	2.23E-04	628.28	0

6.5.4 rHRA1 Discussion

6.5.4.1 The rHRA1 results provide an assessment of continued and sustained Rogue-Load deposition (in effect all imported material falling significantly outside the inert waste criteria required for acceptance to the Site).

6.5.4.2 The Rogue Load assessment is considered to represent an extreme failure of management and protocol for operation of the Site.

6.5.4.3 Although this is not expected to be reflective of the actual infill operation, it should be noted that all determinands assessed at rHRA1 remain within the relevant RWQS as at iHRA1 and sHRA1.

6.5.4.4 The Rogue Load assessment indicates the chemical species to which model results are most sensitive in terms of source concentrations are Chloride, Sulphate and Zinc (showing a percentage change from iHRA1 of 1,229%, 391% and 628% respectively).

6.6 Baseline Water Quality Assessment (bHRA1)

6.6.1 Further assessment of the iHRA1 model has been undertaken via introduction of baseline groundwater quality data as characterised at *section 2.10.2*. This allows consideration of the combined effect of potential contaminant release from the HRA1 Recovery Operation and baseline groundwater quality relative to RWQS.

6.6.2 bHRA1 Model Parameterisation

6.6.2.1 The variables subject to baseline water quality assessment are detailed below at *table 28*. All variables other than those assigned for such analysis have been maintained at the values described at *section 6.3.2* for iHRA1.

Table 28 bHRA1 Model Paramaterisation: Background Groundwater Quality

Chemical	Background Concentration	Chemical	Background Concentration
Arsenic	LT: 0.003, 0.02, 0.45	Zinc	LT: 0.002, 0.128, 1.2
Copper	LT: 0.001, 0.02, 0.12	Chloride	LT: 10, 29.59, 89.4
Mercury	LT: 0.0001, 0.00015, 0.0017	Sulphate	LT: 3, 35.99, 74.5
Nickel	LT: 0.0003, 0.03, 0.174	Ammoniacal Nitrogen*	LT: 0.02, 0.06, 1.2

All units are mg/l.
LT: X, Y, Z: Log-Triangular parameter distribution assumed; X, Y, Z representing bounding minimum, average and maximum recorded baseline concentrations across the full available data set.

6.6.3 bHRA1 Model Results

6.6.3.1 Simulated concentrations over time in groundwater immediately downstream of the HRA1 Recovery Operation, for all chemical species under assessment at bHRA1 are illustrated *appendix 8*.

6.6.3.2 The degree of change in simulated concentrations at bHRA1 relative to maximum baseline concentrations characterised at *section 2.10.2* are presented below at *table 29* in summary.

Table 29 bHRA1 Change in Simulated Concentrations in Groundwater Adjacent the HRA1 Recovery Operation							
Model Name	Species	90th Percentile			95th Percentile		
		Change from Baseline Peak (mg/l)	Change from Baseline Peak (%)	Years to <RWQS	Change from Baseline Peak (mg/l)	Change from Baseline Peak (%)	Years to <RWQS
bHRA1	Ammoniacal Nitrogen	-8.33E-01	-69.40	0	-6.90E-01	-57.52	NA
	Arsenic	-3.20E-01	-71.09	NA	-2.51E-01	-55.78	NA
	Chloride	-3.39E+01	-37.93	0	-2.58E+01	-28.82	0
	Copper	-7.61E-02	-63.40	0	-5.75E-02	-47.94	0
	Mercury	-9.66E-04	-56.80	0	-7.64E-04	-44.96	0
	Nickel	-1.12E-01	-64.43	NA	-9.57E-02	-54.97	NA
	Sulphate	-2.81E+01	-37.75	0	-2.26E+01	-30.32	0
	Zinc	-8.13E-01	-67.76	0	-6.58E-01	-54.85	0

6.6.4 bHRA1 Discussion

6.6.1 Adaptation of the iHRA1 model to account for baseline groundwater quality results in a significant and universal increase in species concentrations in groundwater relative to iHRA1. It should be noted that model results show immediate and permanent exceedance of RWQS for Arsenic, Nickel and Sulphate at the 90th percentile confidence interval, with the addition of Ammoniacal Nitrogen at the 95th percentile confidence interval. This is due to peak background concentrations in groundwater for these chemical species exceeding their associated RWQS.

6.6.2 Examination of model output relative to background concentrations however results in a uniform reduction in modelled concentrations in groundwater immediately downstream of the HRA1 Recovery Operation, for all modelled chemical species, of between 29% and 71%.

6.6.3 This effect is a result of the low species concentrations predicted to be generated by the HRA1 Recovery Operation relative to background groundwater quality, dilution of which results in a net reduction in species concentrations across the modelled domain. This indicates that the HRA1 Recovery Operation will not have a significant impact on prevailing groundwater quality.

6.7 Model Conservatism

6.7.1 The Landsim model developed at HRA1 is considered to be conservative (*i.e.* it produces simulations that tend toward over-estimation of likely concentrations); the principal conservative influences being summarised below at *table 30*.

Table 30 Principal Conservative Factors Adopted by Quantitative HRA1		
Modelled Parameters	Model Representation	Comment
Leachate Source Concentrations	Minimum Values: Individual chemical species ascribed values set at averages established from results of 40-no. WAC leaching tests undertaken as part of an investigation associated with a proposed redevelopment involving excavation of materials to be sent to an inert waste disposal site. Maximum Values: Set at maximum WAC limits for inert waste.	The leaching test data used to set minimum source term concentrations for individual chemical species were obtained from tests undertaken upon samples from a site with long and intensive industrial history and are therefore considered likely to describe concentrations that are substantially elevated above the norm for the waste stream that is anticipated to supply the HRA1 Recovery Operation. Adoption of the upper WAC for inert waste to establish maximum leachate source concentrations will inevitably over-state the total chemical loading within the modelled infill. This is because, in reality, the actual species concentrations within waste accepted at the Recovery Operation will almost always be lower than the WAC limits.
Innate Species Retardation	Minimum partition coefficients (Kd values) for individual chemical species have been set at the lower Manual Values. Maximum Kd values are set at 25% of the upper Manual Values.	On balance, when considering all chemical species assessed by the model, the adoption of a range of Kd values within the lowest 25th percentile of the Manual Values is considered likely to underestimate the degree of attenuation that will occur in reality.

7 THE HRA2 RECOVERY OPERATION

7.1 Overview

7.1.1 The HRA2 Recovery Operation details restoration of the Site as proposed under the Deepening Application (return of the Western Extension to approximately original ground elevations via placement of imported inert materials both within the Aquifer unsaturated and saturated zones).

7.1.2 As discussed at *section 2.3.2*, the Proposed Development is to involve the sequential working of the Western Extension in 5 discrete phases as at *figure 2.* The works will be progressed to a depth equivalent to the base of the RTD (excepting the 125m standoff from Dales House), resulting a basal elevation of between 3maOD and 7maOD, falling southwards and westwards, as at *figure 23*. A safe and efficient working environment will be maintained via dewatering abstraction.

7.1.3 The base of workings within each phase will be compacted prior to the progressive placement of infill materials following on from the phased mineral extraction of the Site. This will then be covered via the replacement of stripped and stored soils native to the Site, ultimately returning the Western Extension to approximately original ground elevations.

7.2 Lining System

7.2.1 The HRA2 Recovery Operation is to partially penetrate the saturated zone of The Aquifer. No in-situ geological barrier will thus be present upon the base of workings.

7.2.2 As previously discussed with regards to the HRA1 Recovery Operation, provision of an artificial EBS meeting the Design Standard is required in such circumstance unless completion without such an EBS can be demonstrated tonot pose significant risk to the water environemnt.

7.2.1.1 As at HRA1, Initial assessment will simulate the placement of inert infill materials directly upon the base of workings following compaction of the in-situ basal Aquifer materials only. If demonstrated permissible, this method of completion will be adopted by HRA2.

7.2.1.2 If required, this will be followed by further description and assessment simulating formation of an artificial EBS encompassing the base and sidewalls of the HRA2 Recovery Operation.

7.3 Capping

7.3.1 Other than emplacement of soil cover, no engineered capping system has been specified or will be required for the HRA2 Recovery Operation.

7.4 Extent, Depth and Elevation of Infilling

7.4.1 As at *figure 2*, the phased working of the 15.7ha Western Extension area involves mineral extraction, and thus subsequent infilling, over an area of some 12.1ha.

7.4.2 This area is to be deepened relative to the HRA1 Recovery Operation over some 10.2ha, as it excludes the 125m standoff from Dales House.

7.4.3 The deepened areas of the Western Extension will be excavated to the base of the RTD, to a depth ranging from 7maOD to 3maOD, falling southwards and westwards. The standoff from Dales House is to be maintained at a basal elevation in line with the HRA1 Recovery Operation, of between 8.4m and 7.2m, falling southwards. The base of workings will also form the base of infill, as presented at *figure 23*.

7.4.4 Comparison of the proposed base of workings to current (and thus post restoration) ground elevations, has allowed estimation of the thickness of deposited infill as at *figure 24*, being shown to range from 1.6m to 7.7m (to average 4.2m), being thickest upon the southern and western boundaries, and thinnest within the standoff from Dales House upon the centre of the southern Site boundary. This represents an estimated volume of deposited materials of some 690,666 tonnes (to include lining materials if required).

7.4.5 Maximum groundwater elevation data (*figure 11*) has been combined with data regarding base of the RTD / proposed maximum working depths (as above), to create an interpolated contour plot showing the maximum expected depth of infill placement beneath maximum groundwater elevations in the surrounding Aquifer, as at *figure 25*. Infilling is expected to be made between 0.8m and 4.8m (to average 2.34m) beneath peak groundwater elevations.

7.5 Waste Types

7.5.1.1 Waste types to be accepted at the HRA2 Recovery Operation are in line with those described for the HRA1 Recovery Operation at *section 4.5* (these materials being inert).

7.6 Leachate Management

Assuming full implementation of control and compliance procedures, the imported wastes will be inert and therefore incapable of producing potentially contaminating leachate. Leachate management will thus not be required.

8 HRA2 CONCEPTUAL SITE MODEL

8.1 Background

8.1.1.1 The principal elements of the HRA2 Recovery Operation and its hydrogeological setting, which together comprise the Source-Pathway-Receptor model to be quantified by HRA2, are described below.

8.1.1.2 A simplified visual representation of the CSM is presented at *figure 26,* with cross sections being provided at *figure 27*.

8.2 Source

8.2.1 The source of potential contamination for the purposes of HRA2 is the full extent of the HRA2 Recovery Operation, as illustrated at *figure 24* (encompassing all areas of the Western Extension that are scheduled for mineral extraction).

8.2.2 Potential leachate is represented at HRA2 in line with that described for HRA1, as at *section 5.2*.

8.3 Pathway

8.3.1 The potential pathway for leachate to enter the water environment and processes occurring within that pathway are constituted by several elements, each of which is described in-turn below.

8.3.2 Migration Pathway

8.3.1 The potential pathway for leachate to enter the water environment and processes occurring within that pathway are constituted by several elements, each of which is described in-turn below.

8.3.3 Migration Pathway

8.3.3.1 The potential leachate migration pathway thus simulated by HRA2 is as follows:

- Laterally through the base of the infill material.
- Horizontally down the hydraulic gradient (south-eastwards) within the saturated zone of the Aquifer.

8.3.4 Chemical Retardation (Kd Values)

8.3.4.1 Retardation is assumed to occur in the EBS (where applied), and within saturated zones of the Aquifer.

8.4 Receptors

8.4.1 The controlled waters receptor being assessed is groundwater present within the Aquifer adjacent to the HRA2 Recovery Operation.

8.4.2 In order to assess potential impacts upon this receptor, a Point of Compliance (POC) has been identified immediately down hydraulic gradient from the Recovery Operation, in the form of piezometer BH2/19, *figure 11*.

9 HRA2 RISK ASSESSMENT MODEL

9.1 HRA2 Tier Selection

9.1.1 Although the HRA2 Recovery Operation will receive only inert wastes, initial screening has indicated a requirement for complex quantitative HRA for the following reasons:

- The Secondary Aquifer status of the Aquifer underlying the HRA2 Recovery Operation.
- The proximity of the HRA2 Recovery Operation to the water environment (*i.e.* a known watertable within the Aquifer encompassing the Site).
- The proposed placement of infill materials within the Aquifer saturated zone.

9.1.2 It is not possible to undertake assessment at HRA2 in line with HRA1 methodologies, as assessment of infill placed within the saturated zone of an aquifer is not sufficiently supported by Landsim. HRA2 has thus been undertaken using RAM 3, a computer-based risk modelling programme developed by Environmental Simulations International.

9.2 Background

9.2.1 Development of the HRA2 model has included the following steps:

- Assessment of the hydraulics of the HRA2 Recovery Operation.
- Definition of, and results from, initial assessment scenario (iHRA2) and modelled input parameters.
- Discussion of requirement for simulation of an EBS and additional assessment in this regard if required.
- Description and results of sensitivity analysis of iHRA2 model (sHRA2).
- Assessment of potential impact of rogue loads on iHRA2 model results (rHRA2).

9.3 Assessment of HRA2 Hydraulics

9.3.1 A mass balance has been conducted to assess the potential for build-up of incident rainfall derived recharge, within the HRA2 Recovery Operation.

9.3.2 The mass balance has calculated the potential ingress volume based on the areal extent of the infill area, the effective rainfall (*table 6*) and expected gradient of the landform. The mass balance results are summarised at *table 31*.

9.3.3 The mass balance estimates that outflows from the HRA2 Recovery Operation will exceed inflows from infiltration, precluding the risk of excessive leachate accumulation, and thus any need for leachate management.

Table 31 Mass Balance Assessment: Water Levels Within HRA2 Recovery Operation		
Parameter (units)	Value	Justification
Input		
[X] Length x (m)	285	Model dimensions set as representative of areal extent of Recovery Operation (12.1ha).
[Y] Length y (m)	425	
[Z] Annual input from rainfall (mm/a)	107.4	Effective Rainfall for grassland (*table 6*), plus 10% allowance for climate change, less 65% runoff (see NCB nomogram at *appendix 7*; ground slope: 0.006, restoration to cultivated land / short grass). 279mm x 1.1 x 0.35 = 107.4mm.
[R] Recharge Volume (m^3/a)	13,008.8	R = Z / 1000 * X *Y
Output		
[I] Head Gradient	0.028	Function of maximum elevation of infill (10.6maOD), average head upon down gradient boundary (6.6maOD), and flow length (0.5*X).
[K] Permeability of Infill (m/s)	1e-5	Literature value for waste materials[19]
[A] Cross-sectional area of liner (m2)	6,825	Function of infill perimeter in groundwater contact (1,625m) and average waste thickness (4.2m).
[Q] Flow through liner (m^3/s)	2.1e-2	Calculated flow through the liner using Darcy fundamental flow equation (Q = AKI). The head gradient x permeability of the liner x cross sectional area of lining.
Annual outflow capacity (m^3/a)	60,457.72	Calculated flow that can pass through the liner for the head specified above.
Mass Balance		
Balance	-47,448.9	Negative value indicates potential outflows exceed predicted ingress, i.e. leachate will not build up / exceed the level specified above.

9.4 Initial Assessment Scenario (iHRA2)

9.4.1 The initial model ('iHRA2') includes a range of hypothetical conservative input values intended, from the outset, to provide a conservative simulation of potential risk posed to controlled waters by the HRA2 Recovery Operation.

9.4.2 The HRA2 Recovery Operation is represented as a single phase, closely reflecting the proposed infill pattern.

9.4.3 As the wastes to be infilled will be inert, the model does not simulate leachate management.

9.4.2 iHRA2 Model Parameterisation

9.4.2.1 Input parameter values and structural assumptions adopted in the RAM model, together with justifications for their selection are given at *table 32* to *table 36* below.

19 Williams, P T, 'Waste treatment and Disposal', Wiley and Sons, 2005.

Table 32 iHRA2 Model Parameterisation: Proposed Inert Source		
Parameter (units)	Value	Justification
Length x (m)	285	Model dimensions set as representative of areal extent of HRA2 Recovery Operation (12.1ha).
Length y (m)	425	
Depth of Infill (m)	4.2	Average thickness required to restore to existing ground elevations.
Field Capacity	0.2	Literature value ascribed in lieu of primary data[20]
Arsenic Concentration (mg/l)	0.05	Upper (worst case) source term concentrations as detailed at *table 13*.
Copper Concentration (mg/l)	0.2	
Mercury Concentration (mg/l)	0.001	
Nickel Concentration (mg/l)	0.04	
Zinc Concentration (mg/l)	0.4	
Chloride Concentration (mg/l)	80	
Sulphate Concentration (mg/l)	600	
Ammoniacal Nitrogen Concentration (mg/l)	0.42	

Table 33 iHRA2 Model Parameterisation: Inert Infill Pathway		
Parameter (units)	Value	Justification
Thickness (m)	4.2	Average thickness of waste materials.
Hydraulic Conductivity (m/s)	1e-5	Literature value for waste materials.
Hydraulic Gradient	0.028	From Mass Balance as at *table 31*.
Porosity	0.42	Literature value[21].
Tortuosity	10	From RAM manual, worked examples and literature[22]..
Dispersivity (m)	0.42	10% of infill thickness.
Travel Distance (m)	142.5	50% of waste length X (radial from infill centre).

Table 34 iHRA2 Model Parameterisation: Aquifer Pathway		
Parameter (units)	Value	Justification
Thickness (m)	87.1	Lower estimate of Aquifer thickness in Site vicinity (90m) less maximum unsaturated thickness on down gradient boundary as at *figure 14* (2.9m)
Hydraulic Conductivity (m/s)	1.15741e-5	Lower end of estimated range in Aquifer permeability.
Hydraulic Gradient	0.0046	Average baseline Aquifer hydraulic gradient
Porosity	0.25	Lower estimate from literature in lieu of primary data
Tortuosity	10	From RAM manual, worked examples and published literature.
Dispersivity (m)	8.71	10% of Aquifer thickness
Travel Distance (m)	20.1	Down hydraulic gradient distance to piezometer BH2/19 from infill.

20 Velasquez, T, Cruz-Rivera, R, Rojas-Valencia, N, Monje-Ramirez I, 'Determination of Field Capacity of Municipal Solid Waste with Surcharge Simulation', Waste Management and Research, 21: 137-144, 2003.

21 Todd, D, K, 'Groundwater Hydrology, 2nd Edition', John Wiley & Sons, 1980

22 'Contaminant Fluxes from Hydraulically Contained Landfills', Science Report SCO310/SR:EA:2004

Mixing Depth (m)	87.1	Set at Aquifer thickness as above.
Mixing Width (m)	425	From CHM, informed by piezometer monitoring data and Site design.

Table 35 iHRA2 Model Parameterisation: Attenuation		
Parameter (units)	Value	Justification
Aquifer Dry Bulk Density (kg/m^3)	1,650	From published literature.
Inert Infill Dry Bulk Density (mg/m^3)		
Aquifer FOC	0.002	From worked examples and published literature[23]
Inert Infill FOC	0.05	
Partition Coefficients (Kd)	Lower (conservative) partition coefficients as at *table 14*	

Table 36 iHRA2 Model Parameterisation: Water Balance		
Parameter (units)	Value	Justification
Effective Rainfall (mm/a)	107.4	Effective Rainfall for grassland (*table 6*), plus 10% allowance for climate change, less 65% runoff (see NCB nomogram at *appendix 7*; ground slope: 0.006, restoration to cultivated land / short grass). 279mm x 1.1 x 0.35 = 107.4mm.
Infiltration Factor	1	Assumes 100% of Effective Rainfall as above is available for infiltration.

9.4.3 iHRA2 Model Results

Concentration in Groundwater

9.4.3.1 Simulated concentrations over time in groundwater immediately downstream of the HRA2 Recovery Operation, for all chemical species under assessment at iHRA2 are illustrated at *appendix 9*.

9.4.3.2 Simulated peak and final (10,000-years) concentrations in groundwater, together with relevant RWQS, are presented below at *table 37* in summary.

Table 37 iHRA2 Simulated Concentrations in Groundwater, HRA2 Recovery Operation				
Species	RWQS (mg/l)	Peak (mg/l)	Final (mg/l)	Years to <RWQS
Ammoniacal Nitrogen	0.5	2.37E-02	0.00	0
Arsenic	0.01	9.23E-05	1.81E-11	0
Chloride	250	8.11E+00	0.00	0
Copper	2	1.01E-04	6.87E-09	0
Mercury	0.001	5.43E-08	5.43E-08	0
Nickel	0.02	1.19E-04	7.29E-13	0
Sulphate	250	6.08E+01	0.00	0
Zinc	5	1.32E-02	0.00	0

9.4.3.3 None of the modelled chemical species are predicted to exceed RWQS in groundwater immediately adjacent the HRA2 Recovery Operation.

23 'Effects of Contaminant Concentration on Potential for Natural Attenuation', R&D Technical Report P2-228/TR:EA:2002

9.4.3.4 The chemical species posing greatest risk to the water environment are indicated to be Sulphate and Ammoniacal Nitrogen, with predicted contaminant concentrations of 24% and 4.7% of RWQS respectively.

9.4.4 iHRA2 Discussion

9.4.4.1 Initial assessment indicates that completion of the HRA2 Recovery Operation without use of an EBS does not present a potentially significant hazard to groundwater, and completion in this manner is thus adopted for continued assessment.

9.5 Sensitivity Analysis (sHRA2)

9.5.1 Sensitivity analysis of the iHRA2 model has been undertaken to examine those parameters with greatest influence upon model simulation, and to account for uncertainty within model parameters where this persists.

9.5.2 sHRA1 Model Parameterisation

9.5.2.1 The variables subject to sensitivity analysis are detailed below at *table 38*. Within each sHRA2 model run, all variables other than those assigned for sensitivity analysis have been maintained at the values described at *section 9.4.2* for iHRA2.

Table 38 sHRA2 Model Parameterisation

Parameter (units)	iHRA Value	sHRA Value	Model Name	Justification
Field Capacity	0.2	0.1	s1HRA2	Application of upper and lower estimates from literature sources.
		0.3	s2HRA2	
Contaminant source term concentrations (mg/l)	Upper as at *table 13.*	Lower as at *table 13.*	s3HRA2	Examination range of expected contaminant source term concentrations.
Inert Infill Hydraulic Conductivity (m/s)	1e-5	1e-6	s4HRA2	Application of upper and lower estimates of waste permeability.
		1e-4	s5HRA2	
Aquifer Thickness (m)/ Mixing Depth (m) / Dispersity (m)	87.1 / 87.1 / 8.71	157.1 / 157.1 / 15.71	s6HRA2	Application of upper estimate of Aquifer thickness.
		21.78 / 21.78 / 2.178	s7HRA2	75% reduction in Aquifer thickness to assess potential effect of vertical anisotropy.
Aquifer Hydraulic Conductivity (m/s)	1.15741e-5	1.157407e-3	s8HRA	Application of upper limit of potential Aquifer hydraulic conductivity.
Aquifer Hydraulic Gradient	0.0046	0.0044	s9HRA2	Application of upper and lower hydraulic gradients indicated by groundwater monitoring data.
		0.006	s10HRA2	
Aquifer Dry Bulk Density (mg/m^3)	1,650	1,281	s11HRA2	Adjustment of Aquifer dry bulk density to reflect potential range indicated by literature review.
Aquifer FOC	0.002	1.2	s12HRA2	Application of upper estimate of Aquifer FOC from literature review.
Contaminant partition coeffcients Kd (l/kg)	Lower as at *table 14.*	Upper as at *table 14.*	s13HRA2	Application of upper estimates of partition coefficients (Kd values).

9.5.3 sHRA2 Model Results

9.5.3.1 Simulated concentrations over time in groundwater immediately downstream of the HRA2 Recovery Operation, for all chemical species under assessment at sHRA2 are illustrated *appendix 9*.

9.5.3.2 The degree of change in simulated concentrations at sHRA2 from that predicted at iHRA2 are presented below at *table 39* in summary.

Table 39 sHRA2 Change in Simulated Concentrations in Groundwater Adjacent the HRA2 Recovery Operation

Model Name	Species	Change in Peak (mg/l)	Change in Peak (%)	Years to <RWQS
s1HRA2	Ammoniacal Nitrogen	-8.17E-03	-34.55	0
	Arsenic	-4.30E-05	-46.64	0
	Chloride	-2.00E+00	-24.63	0
	Copper	-5.11E-05	-50.35	0
	Mercury	-2.72E-08	-50.03	0
	Nickel	-5.70E-05	-47.90	0
	Sulphate	-1.50E+01	-24.63	0
	Zinc	-3.68E-03	-27.86	0
s2HRA2	Ammoniacal Nitrogen	4.64E-03	19.62	0
	Arsenic	3.64E-05	39.48	0
	Chloride	1.03E+00	12.68	0
	Copper	5.18E-05	51.07	0
	Mercury	2.72E-08	50.10	0
	Nickel	5.06E-05	42.49	0
	Sulphate	7.71E+00	12.68	0
	Zinc	5.40E-03	40.94	0
s3HRA2	Ammoniacal Nitrogen	-2.25E-02	-95.24	0
	Arsenic	-8.19E-05	-88.80	0
	Chloride	-7.45E+00	-91.91	0
	Copper	-9.44E-05	-93.00	0
	Mercury	-5.05E-08	-93.00	0
	Nickel	-1.07E-04	-89.75	0
	Sulphate	-5.07E+01	-83.33	0
	Zinc	-1.26E-02	-95.50	0
s4HRA2	Ammoniacal Nitrogen	0.00E+00	0.00	0
	Arsenic	0.00E+00	0.00	0
	Chloride	0.00E+00	0.00	0
	Copper	0.00E+00	0.00	0
	Mercury	0.00E+00	0.00	0
	Nickel	0.00E+00	0.00	0
	Sulphate	0.00E+00	0.00	0
	Zinc	0.00E+00	0.00	0
s5HRA2	Ammoniacal Nitrogen	0.00E+00	0.00	0
	Arsenic	0.00E+00	0.00	0
	Chloride	0.00E+00	0.00	0
	Copper	0.00E+00	0.00	0
	Mercury	0.00E+00	0.00	0
	Nickel	0.00E+00	0.00	0
	Sulphate	0.00E+00	0.00	0
	Zinc	0.00E+00	0.00	0
s6HRA2	Ammoniacal Nitrogen	-9.74E-03	-41.19	0
	Arsenic	1.10E-05	11.92	0
	Chloride	-3.14E+00	-38.72	0
	Copper	8.95E-05	88.27	0
	Mercury	2.73E-08	50.27	0
	Nickel	-1.62E-05	-13.57	0
	Sulphate	-2.35E+01	-38.72	0
	Zinc	-3.23E-03	-24.45	0
s7HRA2	Ammoniacal Nitrogen	2.93E-02	124.05	0
	Arsenic	-5.78E-05	-62.66	0
	Chloride	1.69E+01	208.10	0
	Copper	3.88E-04	382.36	0
	Mercury	2.25E-07	414.14	0

	Nickel	-1.09E-04	-91.69	0
	Sulphate	1.27E+02	208.10	0
	Zinc	3.72E-02	282.15	0
s8HRA2	Ammoniacal Nitrogen	-2.29E-02	-96.69	0
	Arsenic	-4.12E-05	-44.68	0
	Chloride	-7.96E+00	-98.18	0
	Copper	6.72E-05	66.25	0
	Mercury	7.32E-08	134.77	0
	Nickel	-7.38E-05	-62.03	0
	Sulphate	-5.97E+01	-98.18	0
	Zinc	-1.24E-02	-94.35	0
s9HRA2	Ammoniacal Nitrogen	1.93E-04	0.82	0
	Arsenic	-6.82E-06	-7.39	0
	Chloride	2.24E-01	2.76	0
	Copper	7.28E-06	7.17	0
	Mercury	3.57E-09	6.58	0
	Nickel	-5.61E-06	-4.71	0
	Sulphate	1.68E+00	2.76	0
	Zinc	3.75E-04	2.84	0
s10HRA2	Ammoniacal Nitrogen	-2.01E-03	-8.50	0
	Arsenic	3.64E-05	39.42	0
	Chloride	-1.39E+00	-17.13	0
	Copper	6.55E-05	64.53	0
	Mercury	1.36E-08	25.07	0
	Nickel	2.39E-05	20.12	0
	Sulphate	-1.04E+01	-17.13	0
	Zinc	1.02E-03	7.74	0
s11HRA2	Ammoniacal Nitrogen	2.53E-03	10.69	0
	Arsenic	6.48E-05	70.18	0
	Chloride	2.38E-09	0.00	0
	Copper	9.86E-05	97.14	0
	Mercury	2.71E-08	49.95	0
	Nickel	5.67E-05	47.60	0
	Sulphate	1.79E-08	0.00	0
	Zinc	3.75E-03	28.44	0
s12HRA2	Ammoniacal Nitrogen	0.00E+00	0.00	0
	Arsenic	0.00E+00	0.00	0
	Chloride	0.00E+00	0.00	0
	Copper	0.00E+00	0.00	0
	Mercury	0.00E+00	0.00	0
	Nickel	0.00E+00	0.00	0
	Sulphate	0.00E+00	0.00	0
	Zinc	0.00E+00	0.00	0
s13HRA2	Ammoniacal Nitrogen	-1.25E-02	-52.72	0
	Arsenic	-6.06E-05	-65.63	0
	Chloride	0.00E+00	0.00	0
	Copper	-1.01E-04	-99.95	0
	Mercury	8.31E-09	15.31	0
	Nickel	-1.06E-04	-89.20	0
	Sulphate	0.00E+00	0.00	0
	Zinc	-1.30E-02	-98.57	0

9.5.4 sHRA2 Discussion

9.5.4.1 Outline findings of the sensitivity analysis are described below at *table 40*.

Table 40 sHRA2 Model Findings			
Parameter (units)	Model Name	Discussion	Sensitivity
Field Capacity	s1HRA2 s2HRA2	Increases and decreases in field capacity induced moderate corresponding increases and decreases in contaminant concentrations.	Moderate
Contaminant source term concentrations (mg/l)	s3HRA2	Reductions in source term concentrations resulted in corresponding significant reductions in contaminant concentrations.	High
Inert Infill Hydraulic Conductivity (m/s)	s4HRA2 s5HRA2	Changes in inert infill permeability had no effect on contaminant concentrations (due to no dilution / attenuation being applied to this element of the model).	Very Low
Aquifer Thickness (m)/ Mixing Depth (m) / Dispersity (m)	s6HRA2 s7HRA2	Changes in Aquifer thickness and related parameters resulted in species specific increases / decreases in contaminant concentrations of moderate to significant magnitude.	High
Aquifer Hydraulic Conductivity (m/s)	s8HRA	Increases in Aquifer permeability resulted in significant decreases in contaminant concentrations, excepting Mercury, which observed a significant increase.	High
Aquifer Hydraulic Gradient	s9HRA2 s10HRA2	Changes in Aquifer hydraulic gradient induced varied increases and decreases in contaminant concentrations.	Moderate
Aquifer Dry Bulk Density (mg/m^3)	s11HRA2	Reductions in Aquifer dry bulk density resulted in significant increases in contaminant concentrations.	High
Aquifer FOC	s12HRA2	Changes in Aquifer Fraction of Organic Carbon had no effect on contaminant concentrations.	Very Low
Contaminant partition coeffcients Kd (l/kg)	s13HRA2	Application of upper estimates of partition coefficients for modelled species resulted in significant decreases in contaminant concentrations excepting Mercury (slight increase), Chloride and Sulphate (which were not varied).	High

9.5.4.2 Sensitivity analysis has identified varying degrees of sensitivity to modelled parameters, though modelled concentrations within groundwater immediately downstream of the HRA2 Recovery Operation remained within relevant RWQSs for all model runs. Variation of these parameters has thus at no time indicated the HRA2 Recovery Operation to pose an unacceptable risk to groundwater quality.

9.6 Rogue Load Assessment (rHRA2)

9.6.1 An assessment of the potential for impact on the Aquifer that could result from the deposition of materials exceeding the WAC limits applicable to the Site (Rogue Loads) has been undertaken.

9.6.2 The iHRA2 model has been repeated for a hypothetical scenario wherein all wastes deposited contain species concentrations set in line with C_0 percolation test values as defined within the Council Decision.

9.6.3 C_0 percolation test values for inert materials are representative of the initial flush of contaminants following their placement. As the full waste mass will not be deposited simultaneously, and C_0 values would not be expected to persist for sustained duration, application of such source term concentrations across the full infill mass for the full model duration represents significant exceedance of WAC limits, presenting a

conservative approach for the estimation of the potential impacts of rogue load deposition.

9.6.2 rHRA2 Model Parameterisation

9.6.2.1 The variables subject to rogue load assessment are detailed below at *table 41*. All variables other than those assigned for such analysis have been maintained at the values described at *section 9.4.2* for iHRA2.

Table 41 rHRA2 Model Parameterisation: Source Term Concentrations

Chemical	Source Concentration (% change from iHRA Upper Value)	Chemical	Source Concentration (% change from iHRA Upper Value)
Arsenic	0.06 (20)	Zinc	1.2 (200)
Copper	0.6 (200)	Chloride	460 (475)
Mercury	0.002 (100)	Sulphate	1,500 (150)
Nickel	0.12 (200)	Ammoniacal Nitrogen*	0.63 (50)

All units are mg/l.
*: Ammoniacal Nitrogen concentrations have been derived from Site monitoring data and are increased by 50% for the purposes of Rogue Load assessment in lieu of their inclusion within the Council Decision.

9.6.3 rHRA2 Model Results

9.6.3.1 Simulated concentrations over time in groundwater immediately downstream of the HRA2 Recovery Operation, for all chemical species under assessment at rHRA2 are presented at *appendix 9*.

9.6.3.2 The degree of change in simulated concentrations at rHRA2 from that predicted at iHRA2 are presented below at *table 42* in summary.

Table 42 rHRA2 Change in Simulated Concentrations in Groundwater Adjacent the HRA2 Recovery Operation

Model Name	Species	Change in Peak (mg/l)	Change in Peak (%)	Years to <RWQS
rHRA2	Ammoniacal Nitrogen	1.18E-02	50.00	0
	Arsenic	1.85E-05	20.00	0
	Chloride	3.85E+01	475.00	0
	Copper	2.03E-04	200.00	0
	Mercury	5.43E-08	100.00	0
	Nickel	2.38E-04	200.00	0
	Sulphate	9.12E+01	150.00	0
	Zinc	2.64E-02	200.00	0

9.6.4 rHRA2 Discussion

9.6.4.1 The rHRA2 results provide an assessment of continued and sustained Rogue-Load deposition (in effect all imported material falling significantly outside the inert waste criteria required for acceptance to the Site).

9.6.4.2 The Rogue Load assessment is considered to represent an extreme failure of management and protocol for operation of the Site.

9.6.4.3 Although this is not expected to be reflective of the actual infill operation, it should be noted that all determinands assessed at rHRA2 remain within the relevant RWQS as at iHRA2 and sHRA2.

9.7 Baseline Water Quality Assessment

9.7.1 Further assessment of iHRA2 model output has been undertaken to allow comparison of modelled concentrations in groundwater against baseline groundwater quality as characterised at *section 2.10.2*. This allows consideration of the combined effect of potential contaminant release from the HRA1 Recovery Operation and baseline groundwater quality, as at *table 43* below.

Table 43 iHRA2 Simulated Concentrations in Groundwater Relative to Baseline Quality

Species	RWQS (mg/l)	iHRA2 Peak (mg/l)	Baseline Maxima (mg/l)	iHRA2 as % of Baseline Maxima (%)
Ammoniacal Nitrogen	0.5	2.37E-02	1.2	1.98
Arsenic	0.01	9.23E-05	0.45	0.02
Chloride	250	8.11E+00	89.4	9.07
Copper	2	1.01E-04	0.12	0.08
Mercury	0.001	5.43E-08	0.0017	0.003
Nickel	0.02	1.19E-04	0.174	0.07
Sulphate	250	6.08E+01	74.5	81.61
Zinc	5	1.32E-02	1.2	1.1

9.7.2 Assessment demonstrates that baseline concentrations in groundwater exceed those estimated at iHRA2 for all modelled chemical species. This indicates that the HRA2 Recovery Operation will not result in deterioration of prevailing groundwater quality, regardless of mixing ratio.

9.8 Model Conservatism

9.8.1 The RAM model developed at HRA2 is considered to be conservative (*i.e.* it produces simulations that tend toward over-estimation of likely concentrations); the principal conservative influences being summarised below at *table 44*.

Table 44 Principal Conservative Factors Adopted by Quantitative HRA2		
Modelled Parameters	Model Representation	Comment
Leachate Source Concentrations	Minimum Values: Individual chemical species ascribed values set at averages established from results of 40-no. WAC leaching tests undertaken as part of an investigation associated with a proposed redevelopment involving excavation of materials to be sent to an inert waste disposal site. Maximum Values: Set at maximum WAC limits for inert waste.	The leaching test data used to set minimum source term concentrations for individual chemical species were obtained from tests undertaken upon samples from a site with long and intensive industrial history and are therefore considered likely to describe concentrations that are substantially elevated above the norm for the waste stream that is anticipated to supply the HRA2 Recovery Operation. Adoption of the upper WAC for inert waste to establish maximum leachate source concentrations will inevitably over-state the total chemical loading within the modelled infill. This is because, in reality, the actual species concentrations within waste accepted at the HRA2 Recovery Operation will almost always be lower than the WAC limits.
Innate Species Retardation	Minimum partition coefficients (Kd values) for individual chemical species have been set at the lower Manual Values. Maximum Kd values are set at 25% of the upper Manual Values	On balance, when considering all chemical species assessed by the model, the adoption of a range of Kd values within the lowest 25th percentile of the Manual Values is considered likely to underestimate the degree of attenuation that will occur in reality.

10 CONTROL AND COMPLIANCE MONITORING

10.1 Background

10.1.1 Groundwater Control Levels are site-specific assessment criteria used to determine whether the HRA1 / HRA2 Recovery Operation is performing as designed and intended, and to draw attention to the development of adverse trends in the monitoring data.

10.1.2 Groundwater Control Levels should be regarded as an early warning system and breaches should lead to appropriate investigation or implementation of corrective measures.

10.1.3 Breaches of Groundwater Control Levels should not, however, ordinarily be interpreted as an indication that groundwater pollution has occurred.

10.1.4 In more detail, the purpose of Groundwater Control Levels is to:

- Highlight variations between the conceptual model (including the results of quantitative risk assessment) and observed conditions.
- Identify unambiguous adverse trends which are indicative of leachate impacts.
- Allow for variation in natural water quality from baseline conditions.
- Give sufficient time to take corrective or remedial action before Compliance Limits are breached.

10.1.5 EA guidance[24] requires that Groundwater Compliance Limits for potentially polluting substances be set at the point where pollution can be said to have occurred and can be detected by monitoring.

10.1.6 A change in groundwater quality to a concentration below the compliance limits would be acceptable, but a concentration at or above the compliance limit would be unacceptable.

10.2 Selection of Monitoring Points

10.2.1 A review has been undertaken of the groundwater quality monitoring data (*section 2.10.2*) and the location of Site piezometers relative to the HRA1 / HRA2 Recovery Operation and groundwater flow direction (*figure 11*).

10.2.2 Review indicates that piezometer BH2/19 constitutes the most appropriate monitoring point for down-gradient Groundwater Control Level and Compliance Limit surveillance to be undertaken during and following operation of the HRA1 / HRA2 Recovery Operation.

10.3 Derivation of Control Levels and Compliance Limits

10.3.1 Derivation of Control Levels and Compliance Limits has involved a two-stage process involving:

- Selection of appropriate chemical species.

24 "Additional guidance for hydrogeological risk assessments for landfills and the derivation of groundwater control levels and compliance limits", EA Horizontal Guidance Note H1 – Annex J3, Version 2.1, December 2011.

- Justification and enumeration of level and limit values.

10.3.2 Enumeration of level and limit values has been based:

- Upon characteristic statistics calculated from background water quality data-sets compiled for the Aquifer.
- Where necessary, upon the results of HRA numerical model simulations.

10.3.2 Initial Screening

10.3.2.1 Groundwater quality monitoring undertaken between November 2018 and January 2019 has determined that 4-no. of the 8-no. chemical species modelled at HRA1 and HRA2 are present in groundwater sampled from Site piezometers at concentrations exceeding their respective RWQS.

10.3.2.2 Of these species Arsenic, Mercury and Nickel have therefore been excluded from further consideration.

10.3.2.3 Although Ammoniacal Nitrogen background concentrations have also been observed in excess of RWQS, this species forms a key indicator of leachate contamination, and is thus advanced for further examination of its potential utility in the derivation of groundwater Control Levels and Compliance Limits, together with the remaining 4-no. modelled species (Chloride, Copper, Sulphate and Zinc).

10.3.3 Statistical Analysis of Background Data

10.3.3.1 In accordance with EA guidance[25], statistical techniques are to be applied to assess the suitability of the background groundwater quality data-compiled for Site piezometers with respect to setting groundwater Control Levels and Compliance Limits.

10.3.3.2 This involves the computation of D'Agostino's Test[30] to determine the distribution characteristics of the time-series data for the relevant determinands detailed above, which requires assessment of:

- The characteristic statistical distribution for each chemical species.
- The mean of this data plus 2 and 3 standard deviations ($\mu + x\sigma$).
- Whether these values have been exceeded by the maximum recorded background concentration (bqMAX).
- Whether these values exceed RWQS.

10.3.3.3 It is generally accepted that derivation of Control Level and Compliance Limit values as a function of the statistical characteristics of a groundwater quality data-set valid when:

- That data-set is either normally or log-normally distributed.
- Both the $\mu + 2\sigma$ and $\mu + 3\sigma$ exceed bqMAX.
- Both the $\mu + 2\sigma$ and $\mu + 3\sigma$ are below RWQS.

25" Techniques for the Interpretation of Landfill Monitoring Data" (Guidance Notes), EA Final technical report P1-471, 2002.

10.3.3.4 Where such conditions are met, the general expectation is that Control Levels and Compliance Limits may be appropriately defined at the $\mu + 2\sigma$ and $\mu + 3\sigma$ values respectively[26].

10.3.3.5 Analysis has been conducted upon both up-gradient monitoring points (combined data for BH1/19 and CP05) and for down gradient monitoring points (combined data for BH2/19 and CP06). Up gradient piezometers have not been assessed with regards to Ammoniacal Nitrogen due to historic exceedance of RWQS at piezometer CP05.

10.3.3.6 The results of this analysis are presented at *appendix 10*, with summary detail at *table 45* below.

Table 45 Characteristic Statistics of Selected Background Quality Data

Chemical	bqMAX*	Distribution	$\mu + 2\sigma$	$\mu + 3\sigma$	RWQS
Up-Gradient					
Chloride	89.4	ND	*91*	*108*	250
Copper	0.05	ND / LND	0.047[1] / *0.106*	0.062 / *0.34*	2
Sulphate	74.5	NA	NA	NA	250
Zinc	0.47	LND	*0.87*	5.97[2]	5
Down Gradient					
Chloride	38.4	NA	NA	NA	250
Copper	0.04	ND / LND	0.039[1]/ *0.061*	0.05 / *0.13*	2
Sulphate	61.3	NA	NA	NA	250
Zinc	0.3	ND / LND	*0.33* / 1.08	*0.45* / 5.58[2]	5
Ammoniacal Nitrogen	0.42	LND	0.61[2]	1.71[2]	0.5

RWQS: Regulatory Water Quality Standard; generally, UK Drinking Water Standards (Water Supply -Water Quality – Regulations 2000 (UK-DWS); alternative standards utilised where enumerated threshold concentrations are not provided by the UK-DWS (See *table 9*).
bqMAX: Maximum recorded background concentration.
ND: Normally distributed, LND: Log-normally distributed, NA - Neither normal or log-normally distributed.
[1]: Exceeded by bqMAX
[2]: Exceeds RWQS
Italic: Suitable for application in derivation of Control Level / Compliance Limit
*: bqMAX specific to piezometers assessed.
All units in mg/l

10.4 Enumerated Control Levels and Compliance Limits

10.4.1.1 Enumeration of Control Levels and Compliance Limits has been undertaken on a tiered approach, as follows:

- Defined by statistical analysis as at *section 10.3.3* for down gradient piezometers.

26 $\mu + 2\sigma$ (two-standard deviations around the mean) = 95.45% around the mean = 97.725th percentile*.
$\mu + 3\sigma$ (three-standard deviations around the mean) = 99.73% around the mean = 99.865th percentile*.
(* - percentiles being the notation most widely used for reporting of model simulations by LandSim).
Due to the probabilistic nature of LandSim (meaning that successive model simulations are highly unlikely to generate identical results unless all parameters are ascribed single values), the limited manner in which model output is reported and the limited number of user-specifiable time-slices, it is almost impossible to obtain accurate concentration forecasts at precisely $\mu + 2\sigma$ and $\mu + 3\sigma$. The model instead reports maximum simulated concentrations at fixed percentile intervals of 1, 5, 10, 50, 90, 95 and 99 for the entire model run. Whilst LandSim also reports μ and σ, these are specific to the (4-no.) time-slices specified by the user at the beginning of the model simulation. These are highly unlikely to match timing of peak model concentrations (which can vary over several thousands of years between model runs) and which are obviously reported only after the model has been run. Hence the heuristic approach adopted here of equating LandSim's 95th percentile output to $\mu + 2\sigma$ and its 99th percentile output to $\mu + 3\sigma$).

- Defined by statistical analysis as at *section 10.3.3* for up gradient piezometers where down gradient results are unsuitable (improper statistical distribution, results below baseline maxima, results above RWQS).
- Defined by modelled results (HRA1 / HRA2) where statistical analysis results are unsuitable (improper statistical distribution, results below baseline maxima, results above RWQS).
- Compliance Limits set at baseline maxima + 50% of the difference between baseline maxima and RWQS, Control Levels set at baseline maxima + 50% of the difference between baseline maxima and Compliance Limits, where model results unsuitable (below baseline maxima).

10.4.1.2 The resulting Control Levels and Compliance Limits, applicable to both the HRA1 Recovery Operation and HRA2 Recovery Operation, to apply to piezometer BH2/19, *figure 11*, are presented at *table 46*, and are presented graphically at *figure 28*.

Table 46 BH2/19 Control Levels and Compliance Limits

Chemical	Control Level	Derivation	Compliance Limit	Derivation
Chloride	91	Statistical analysis, up gradient.	108	Statistical analysis, up gradient.
Copper	0.06	Statistical analysis, down gradient.	0.13	Statistical analysis, down gradient.
Sulphate	118.38	50% between baseline maxima and Compliance Limit,	162.25	50% between baseline maxima and RWQS.
Zinc	0.33	Statistical analysis, down gradient.	0.45	Statistical analysis, down gradient.
Ammoniacal Nitrogen	0.44	50% between baseline maxima and Compliance Limit,	0.46	50% between baseline maxima and RWQS.

All units in mg/l

10.5 Monitoring / Reporting Requirements

10.5.1 Monitoring Requirements

10.5.1.1 The groundwater monitoring recommended to undertaken in association with the HRA1 / HRA2 Recovery Operation is detailed at *table 47*, with monitoring locations being presented at *figure 11*.

10.5.1.2 These requirements are to be documented in the Site Hydrometric Monitoring Scheme (HMS), within which further monitoring requirements are specified.

Table 47 Recommended Monitoring			
Location (*figure 11*)	Field Determinands	Laboratory Determinands	Frequency
BH1/19 BH2/19 BH3/19 SWS1 SWS2	Weather, Sample Colour, Sample Odour, Water Level, pH, Temperature, Electrical Conductivity, Dissolved Oxygen, Redox Potential, groundwater level (dip to water converted to OD).	Ammoniacal Nitrogen, Antimony, Arsenic, Barium, BOD, Boron, Cadmium, Calcium, Chloride, Chromium, COD, Copper, Dissolved Organic Carbon, Fluoride, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, PAHs, PCBs, Phenols, Phosphate, Selenium, Sodium, Sulphate, Total Dissolved Solids, Total Organic Carbon, Total Oxidised Nitrogen, Total Petroleum Hydrocarbons, Total Suspended Solids, Zinc.	Quarterly in advance of and during the operational phase, 6 monthly following closure.

10.5.2 Routine Quarterly Assessment

10.5.2.1 Immediately upon receipt of laboratory data, results for down-gradient piezometer BH2/19 should be compared with the prescribed groundwater Control Levels and Compliance Limits (*table 46)*.

10.5.2.2 In the event that either Control Levels or Compliance Limits are found to have been breached during routine quarterly assessment, the monitoring frequency shall be increased to monthly.

10.5.2.3 Monitoring shall return to a quarterly frequency only following 2-no. consecutive monthly monitoring rounds undertaken without breach of Control Levels and / or 3-no. consecutive monitoring rounds undertaken without breach of Compliance Limits.

10.5.2.4 In the event that Control Levels are breached for 3-no. successive monthly monitoring rounds, or Compliance Limits breached for 2-no. successive monthly monitoring rounds, then the relevant Contingency Actions described at *table 48* below shall be implemented.

10.5.2.5 These requirements are to be documented in the Site Hydrometric Monitoring Scheme (HMS), within which further monitoring requirements are specified.

Table 48 Continency Actions		
Contingency Action	Control Level Breach	Compliance Limit Breach
Advise Site management	✓	✓
Advise the environmental manager of the operating company	✓	✓
Advise the Environment Agency		✓
Confirm by repeat sampling and analysis	✓	✓
Review existing monitoring information	✓	✓
Review site management and operations, and implement actions to prevent future failure of a compliance limit	✓	
Review the assumptions incorporated into the site conceptual model	✓	✓
Review existing hydrogeological risk assessment, control levels and compliance limits*	✓	✓
If risks are unacceptable set in place procedures for implementing corrective measures in consultation with or required by the Environment Agency		✓
* This should include a re-evaluation of whether the baseline conditions have changed since the last risk assessment.		

11 SUMMARY AND CONCLUSIONS

11.1 BCL have undertaken a hydrological and hydrogeological baseline study and quantitative Hydrogeological Risk Assessment (HRA) of a planned Waste Recovery Operation using imported inert materials at Hurn Court Farm Quarry, Hurn, Dorset. This is to facilitate the restoration of the Western Extension to existing workings for which planning consent was granted in 2016 (ref: 8/16/2011/DCC), and to account for the proposed deepening of the Western Extension (allowing sub water table works) for which planning permission is pending.

11.2 Assessment has commenced with the compilation and assessment of publicly available and Site-specific data sources, allowing baseline conditions to be characterised.

11.3 This has been followed by description of the design and working methods of the recovery operation under both scenarios.

11.4 The above have been combined in development of a Conceptual Hydrogeological Model (CHM) and Conceptual Site Model (CSM) for each scenario, using a source, pathway, receptor methodology.

11.5 The CSM for each scenario has been separately subjected to appropriate quantitative risk assessment. The resultant risk assessment models have been subject to sensitivity analysis to identify modelled parameters that have the strongest control on model results and to account for variability in input parameters where expected. The risk assessment models have further been applied to assess the potential impact of the deposition of Rogue Loads within the Recovery Operation.

11.6 For all chemical species assessed, under all assessment scenarios, simulation indicates that those chemicals already present below relevant regulatory water quality standards will remain under those standards when accounting for the simulated contribution of leachate from the Recovery Operation, without need for use of engineered containment.

11.7 Numerical risk assessment has thus demonstrated that the recovery of inert waste at the Site will not introduce significant risk to the groundwater quality at the Site.

11.8 Model predictions additionally show that the Recovery Operation will operate without generation of a head of leachate in excess of the available freeboard within the liner (i.e. [potential] leakage will significantly exceed infiltration).

11.9 It is concluded that there is no requirement for any additional control or management measures beyond the waste acceptance quality control procedures (generic to inert infill materials) that will attend the Recovery Permit.

11.10 It is however necessary to establish a programme for monitoring of water quality, against which any impacts resulting from the Recovery Operation can be assessed against Control Levels and Compliance Limits.

11.11 Analysis of baseline groundwater chemistry data has thus been undertaken, from which such Control Levels and Compliance Limits have been derived, with appropriate monitoring and reporting also having been specified.

11.12 It is therefore concluded that, based on currently available information, the Recovery Operation can be undertaken in full compliance with relevant water resource regulations. There are considered to be no over-riding hydrogeologically or hydrologically based reasons why the proposal should not receive a Recovery Permit.

11.13 This conclusion assumes that any such permit, if granted, should be conditioned by implementation and adherence to any relevant recommendations advanced within this report and other such Permit conditions that may be reasonably imposed by the Environment Agency.

11.14 This applies for both the completion of the Site under current planning permission, and its proposed deepening.

Peter Simpson, BSc, MSc,FGS
Senior Hydrogeologist

BCL Consultant Hydrogeologists Limited
27th May 2020

S/HHDED/HC/HRA20/03

H.H. & D.E. Drew Limited

Hurn Court Farm Quarry

Hurn, Dorset

Application for Waste Recovery Permit
Site Restoration Using Imported Inert Infill

Hydrogeological Risk Assessment

Version 3
27th May 2020

Figures

BCL HYDRO
BCL Consultant Hydrogeologists Limited

Technology Centre, Wolverhampton Science Park, Glashier Drive, Wolverhampton
West Midlands, WV10 9RU. Tel: 01902 824111, Fax: 01902 824112
email: info@bclhydro.co.uk, web: http://www.bclhydro.co.uk
Registered Office: 33, Wolverhampton Road, Cannock, West Midlands, WV11 1AP
Registered in England & Wales. Company Registration Number: 4043373

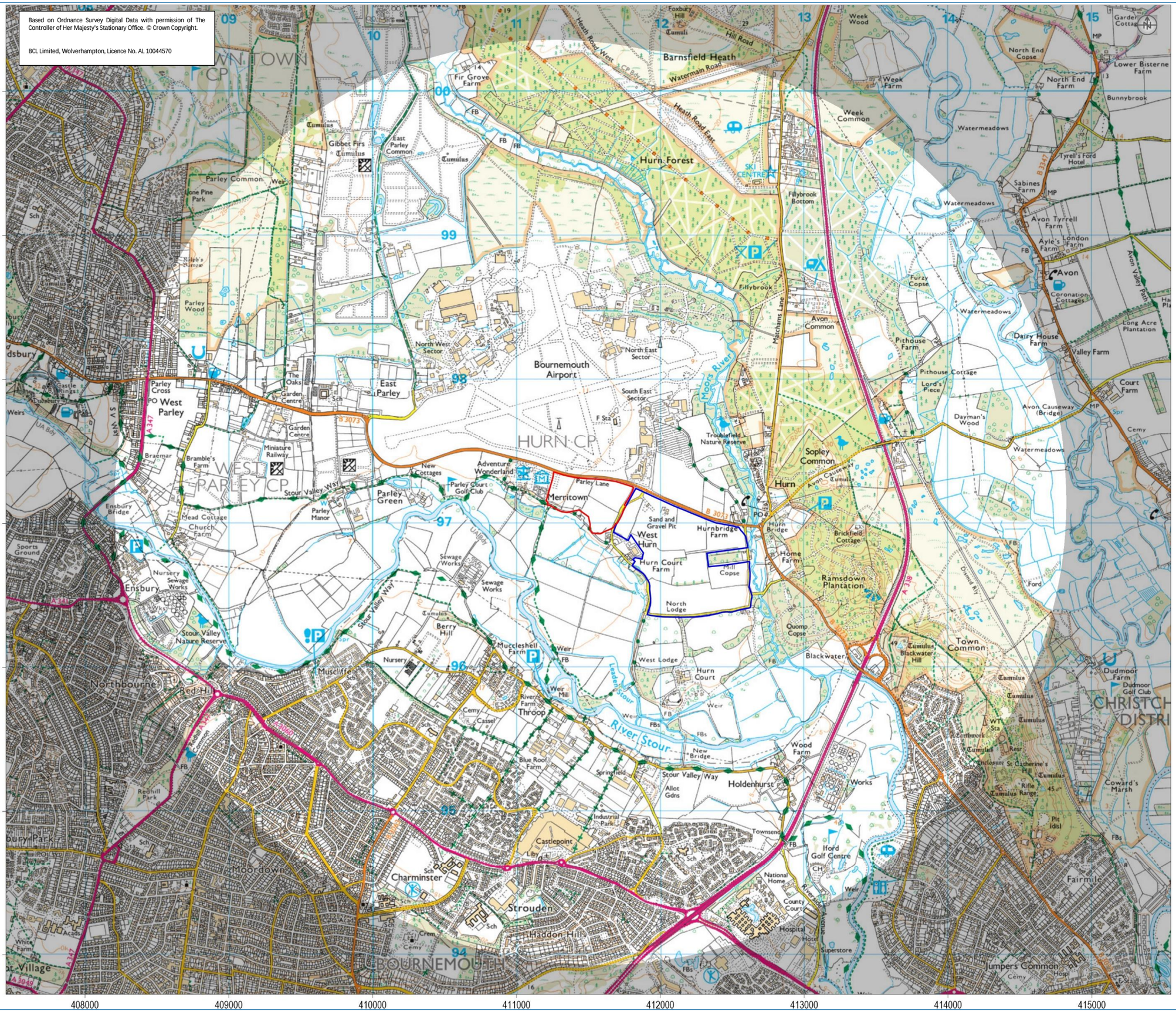

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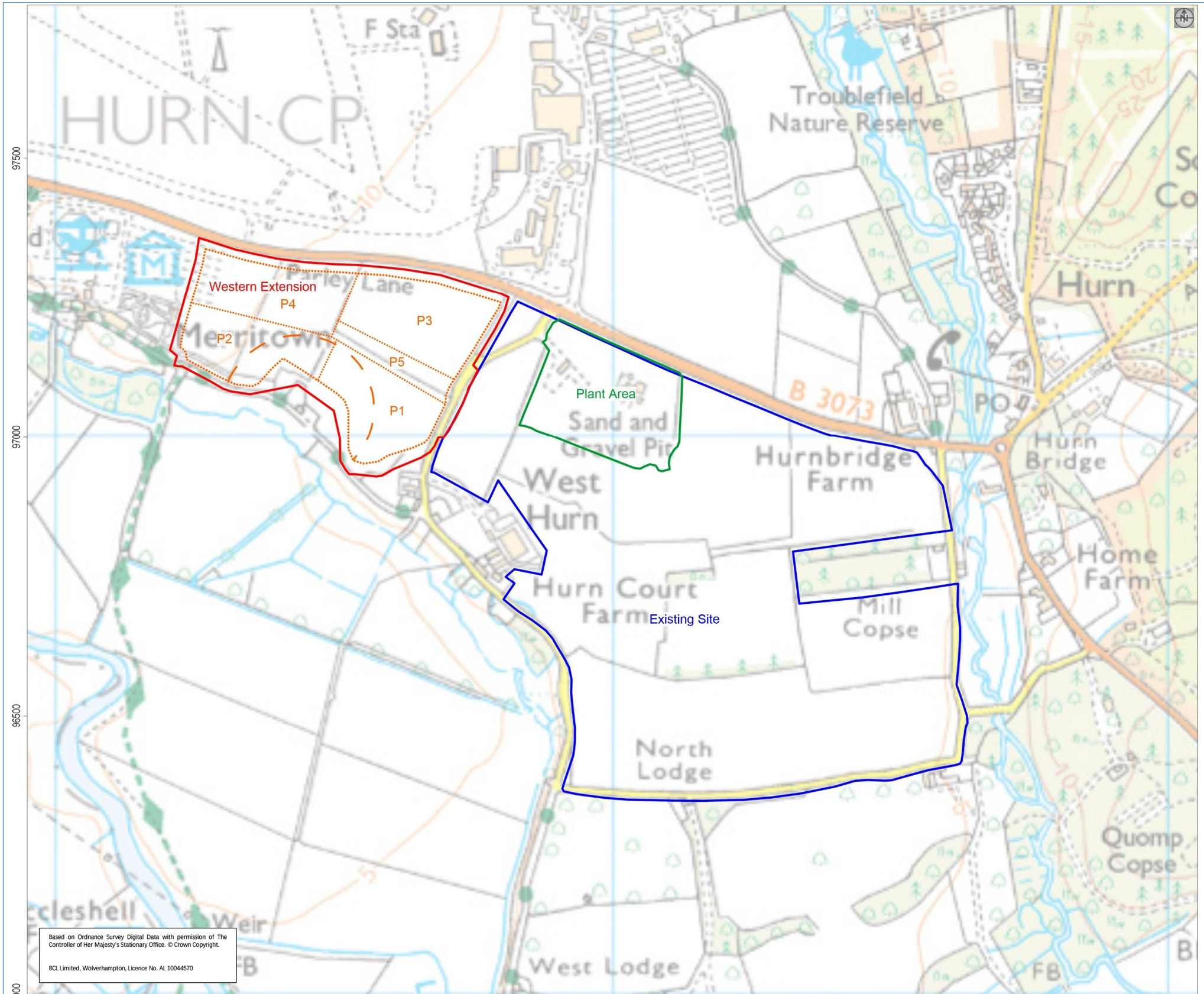
Figure 1 Site Location and Study Area

Drawn By: PS	**Scale: 1:25,000**
Date: 19/03/2020	**Format: A3L**



BCL HYDRO

- Site Boundary
- Proposed Development Boundary
- Plant Area
- Phase Boundary
- Area Dewatered

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Figure 2 Site Layout and Phasing

Drawn By: PS	**Scale: 1:6,500**
Date: 19/03/2020	**Format: A3L**

BCL HYDRO

- Site Boundary
- Proposed Development Boundary
- Phase Boundary
- Area Dewatered
- Active Extraction Phase
- Active Sump (Mobile)
- Pumped Flow (Piped)
- Gravity Flow (Piped)
- Western Extension Lagoon (WEL)
- Flow Monitoring Point
- Discharge Point

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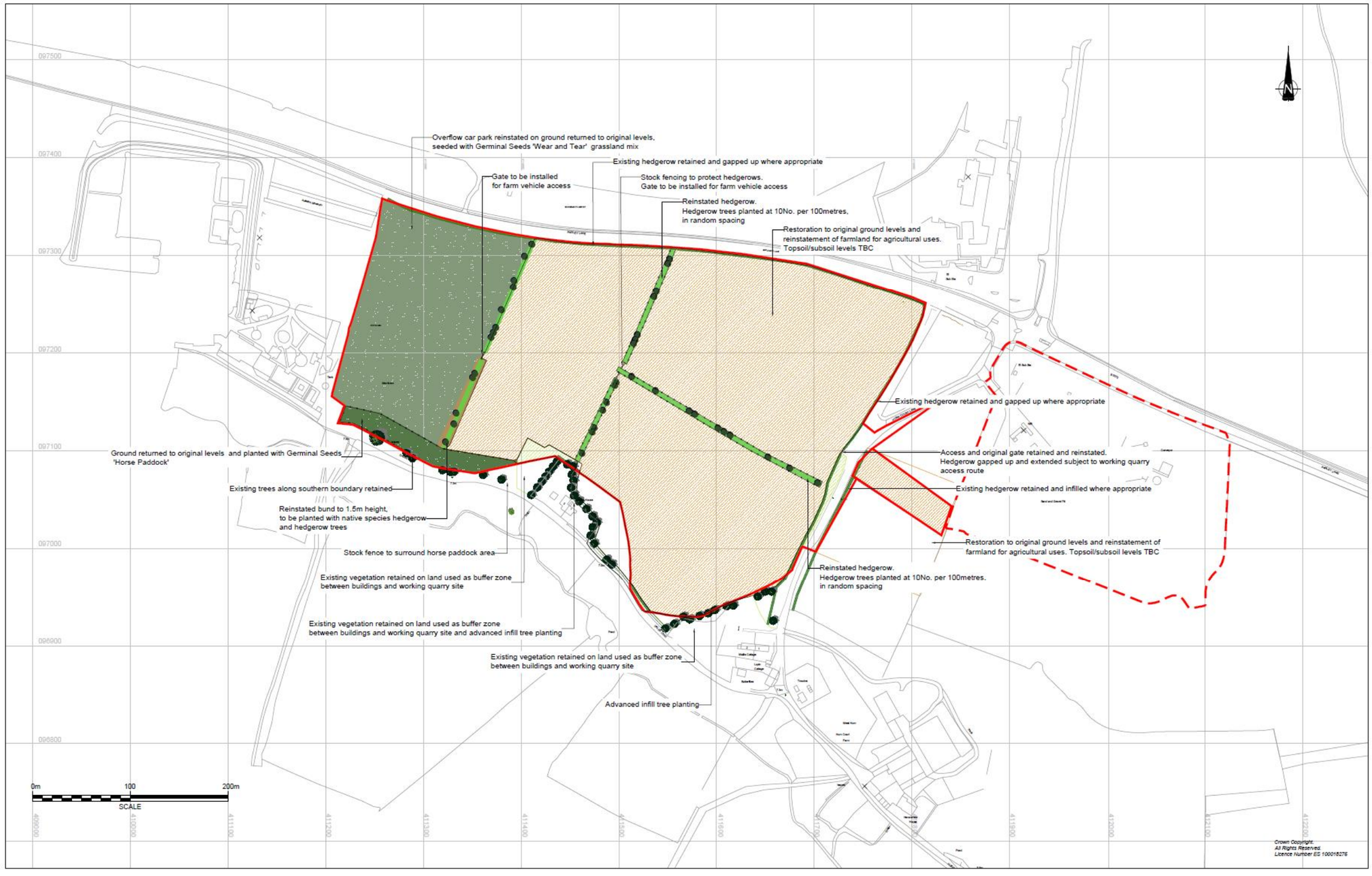
Figure 3 Proposed Development Water Management

Drawn By: PS	**Scale: 1:3,500**
Date: 19/03/2020	**Format: A3L**



KEY

- Site Boundary
- Plant Site Boundary
- Stock Fence
- Existing Hedgerow Retained
- Proposed Native Species Hedgerow to Reinstate Existing Hedgerow Removed
- Reinstated Bund
- Reinstated Agricultural Land, Planted with Germinal Seeds 'Agricultural Reinstatement' (A25)
- Reinstated Horse Paddock Area, planted with Germinal Seeds 'Horse Paddock' mix
- Overflow Car Park Area, planted with Germinal Seeds 'Wear and Tear' mix (A24)
- Retained Vegetation
- Existing Trees
- New Hedgerow Trees

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Figure 4 Concept Restoration

Drawn By: PS	**Scale: N/A**
Date: 19/03/2020	**Format: A3L**

St Leonards and St Ives Heaths SSSI
Dorset Heathlands RAMSAR
Dorset Heaths SAC
Dorset Heathlands SPA

River Avon SSSI
River Avon SAC

Hurn Common SSSI
Dorset Heaths SAC
Dorset Heathlands SPA

Parley Common SSSI
Dorset Heathlands RAMSAR
Dorset Heaths SAC
Dorset Heathlands SPA

Troublefield DWT Reserve

Sopley Common DWT Reserve

Avon Valley SSSI
Avon Valley RAMSAR
Avon Valley SPA

Town Common SSSI
Dorset Heathlands RAMSAR
Dorset Heaths SAC
Dorset Heathlands SPA

Moors River System SSSI

Stour Valley LNR

100000
99000
98000
97000
96000
95000
94000

408000
409000
410000
411000
412000
413000
414000
415000

BCL HYDRO

- Site Boundary
- Proposed Development Boundary
- SSSI
- RAMSAR
- SAC
- SPA
- LNR / DWT

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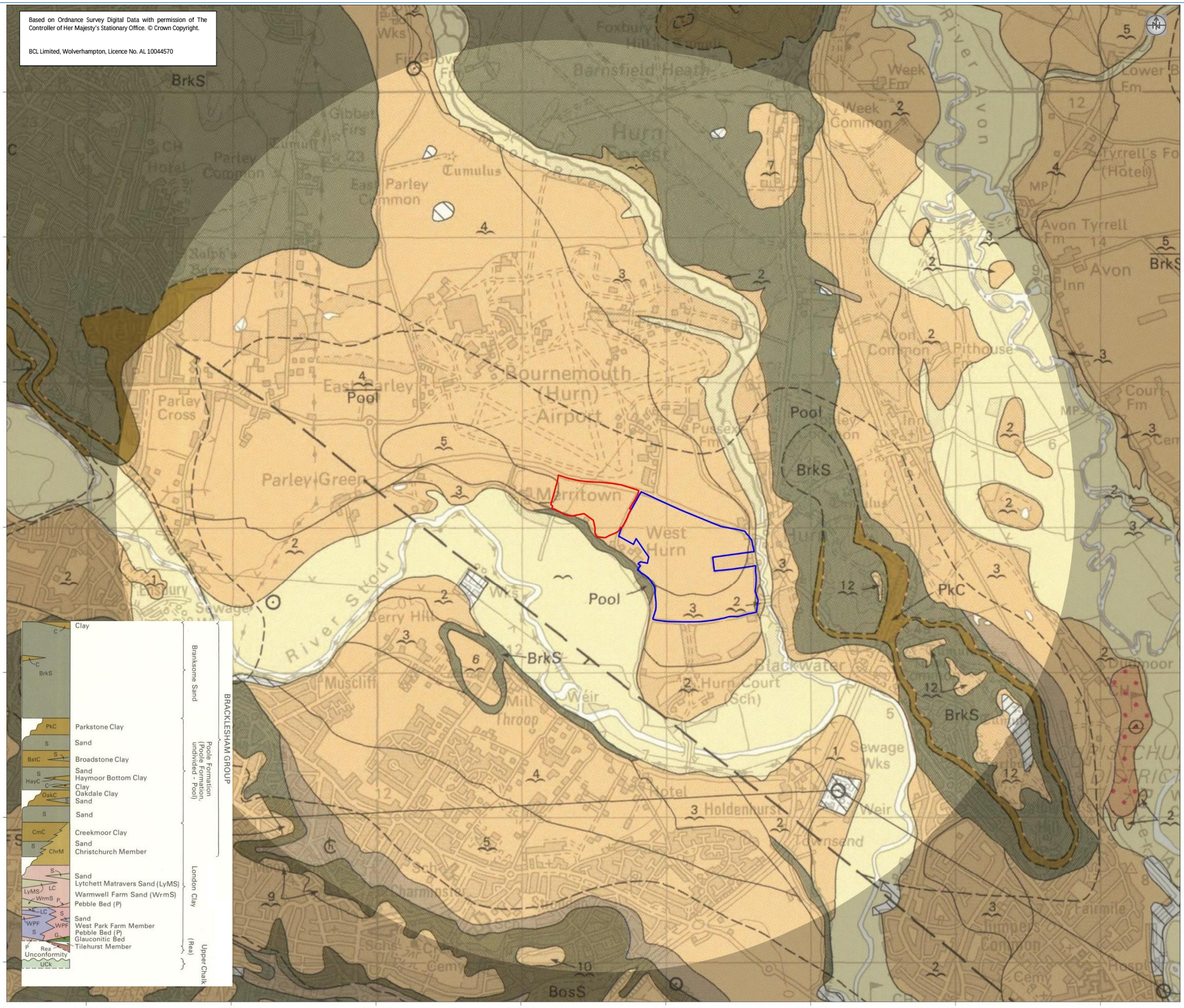
Figure 5 Ecological Sites

Drawn By: PS	**Scale: 1:25,000**
Date: 19/03/2020	**Format: A3L**



Site Boundary

Proposed Development Boundary

- Peat
- Alluvium
- River Terrace Deposits 1-14 as numbered (mainly gravel)
- River Terrace Deposits (mainly loam and clay) resting on River Terrace Gravels
- River Terrace Deposits, undifferentiated
- Older River Gravels, Terrace 2
- Marine Beach Deposits, present day or Tidal Flat
- Marine or Estuarine Alluvium
- Storm Gravel Beach Deposits
- Head
- Head Gravel

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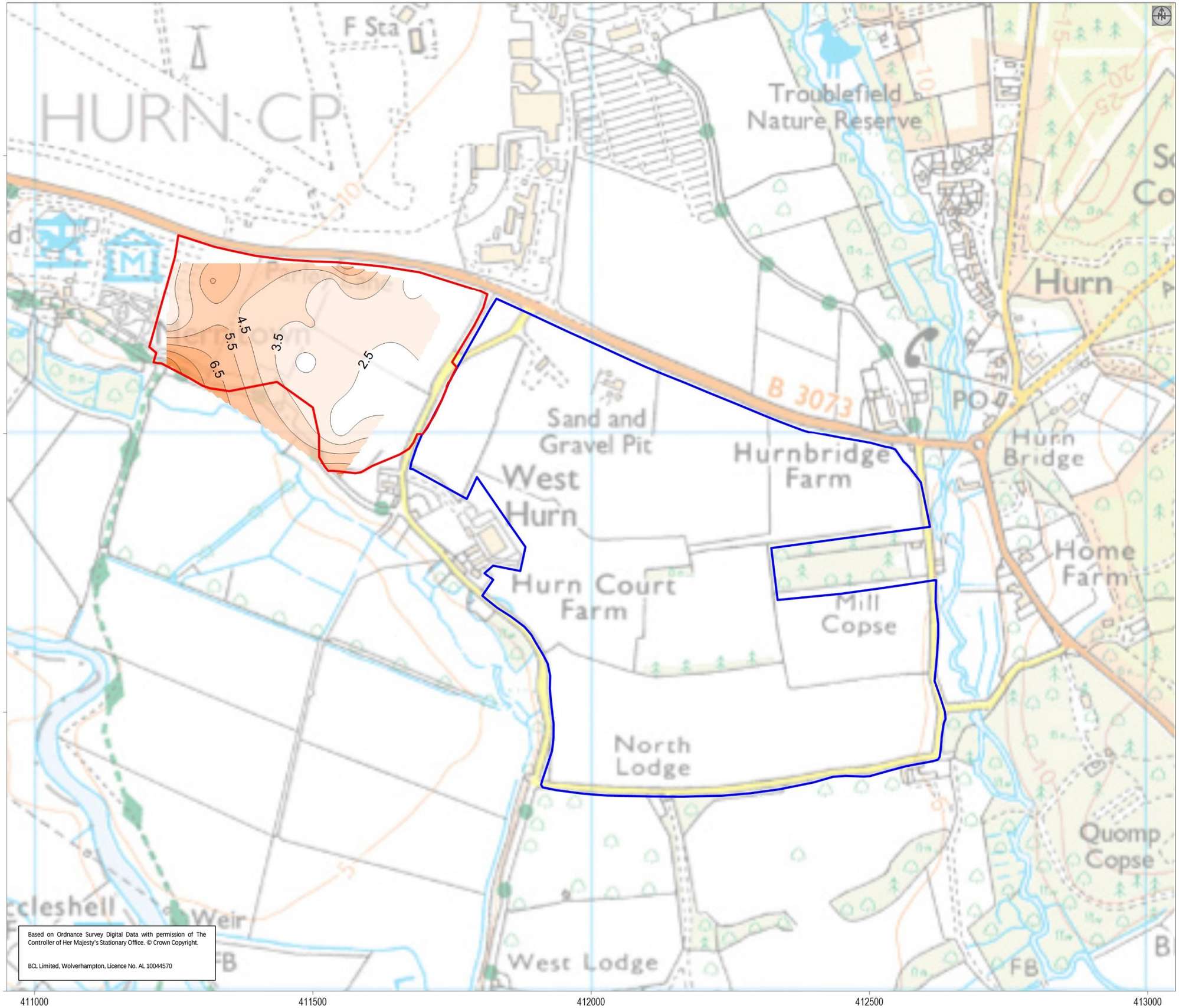
Figure 6 Geological Setting

Drawn By: PS	**Scale: 1:25,000**
Date: 19/03/2020	**Format: A3L**



BCL HYDRO

Site Boundary

Proposed Development Boundary

Thickness of River Terrace Deposits (m)

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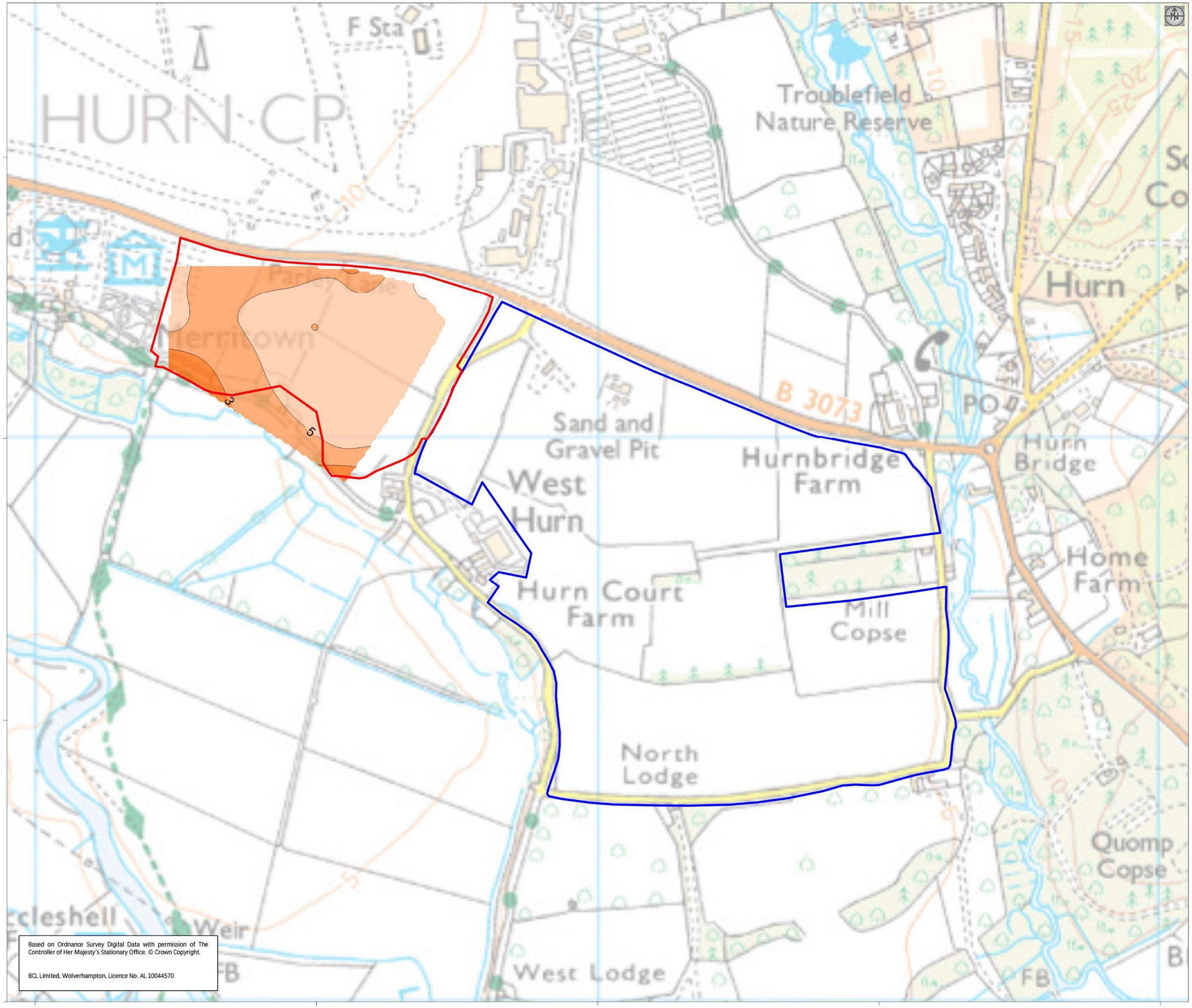
Figure 7 Thickness of River Terrace Deposits

Drawn By: PS	**Scale: 1:6,500**
Date: 19/03/2020	**Format: A3L**



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Site Boundary

Proposed Development Boundary

Base of River Terrace Deposits (m)

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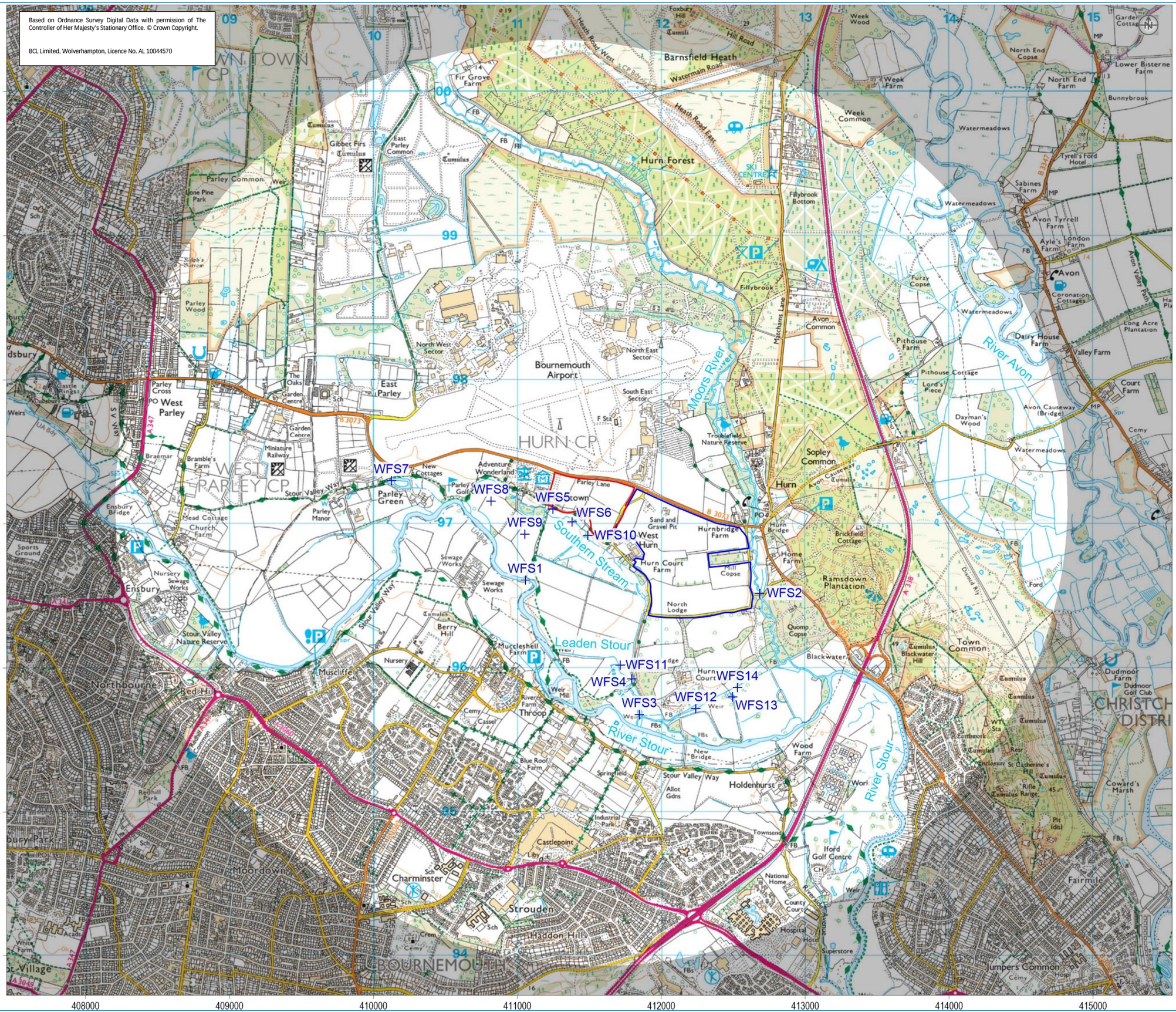
Figure 8 Base of River Terrace Deposits

Drawn By: PS	**Scale: 1:6,500**
Date: 19/03/2020	**Format: A3L**



Site Boundary

Proposed Development Boundary

Water Features Survey Location

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Figure 9 Hydrological Setting

Drawn By: PS	**Scale: 1:25,000**
Date: 19/03/2020	**Format: A3L**

100000
99000
98000
97000
96000
95000
94000

408000 409000 410000 411000 412000 413000 414000 415000

BCL HYDRO

- Site Boundary
- Proposed Development Boundary
- FRZ1
- FRZ2
- FRZ3

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Figure 10 Flood Risk Mapping

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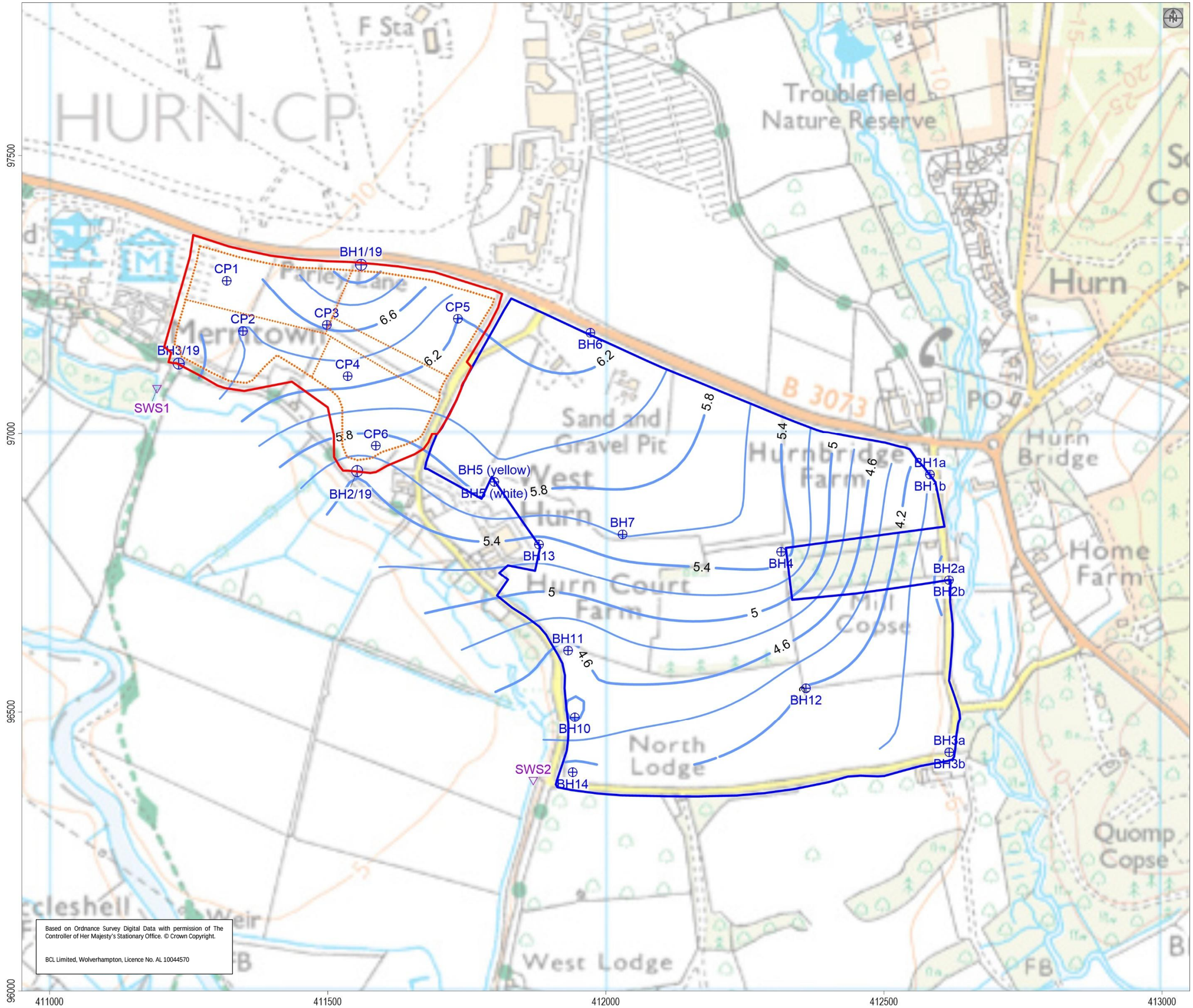

BCL HYDRO

- Site Boundary
- Proposed Development Boundary
- Piezometer Location
- Groundwater Elevation Contours (maOD)
- Surface Water Sample Point

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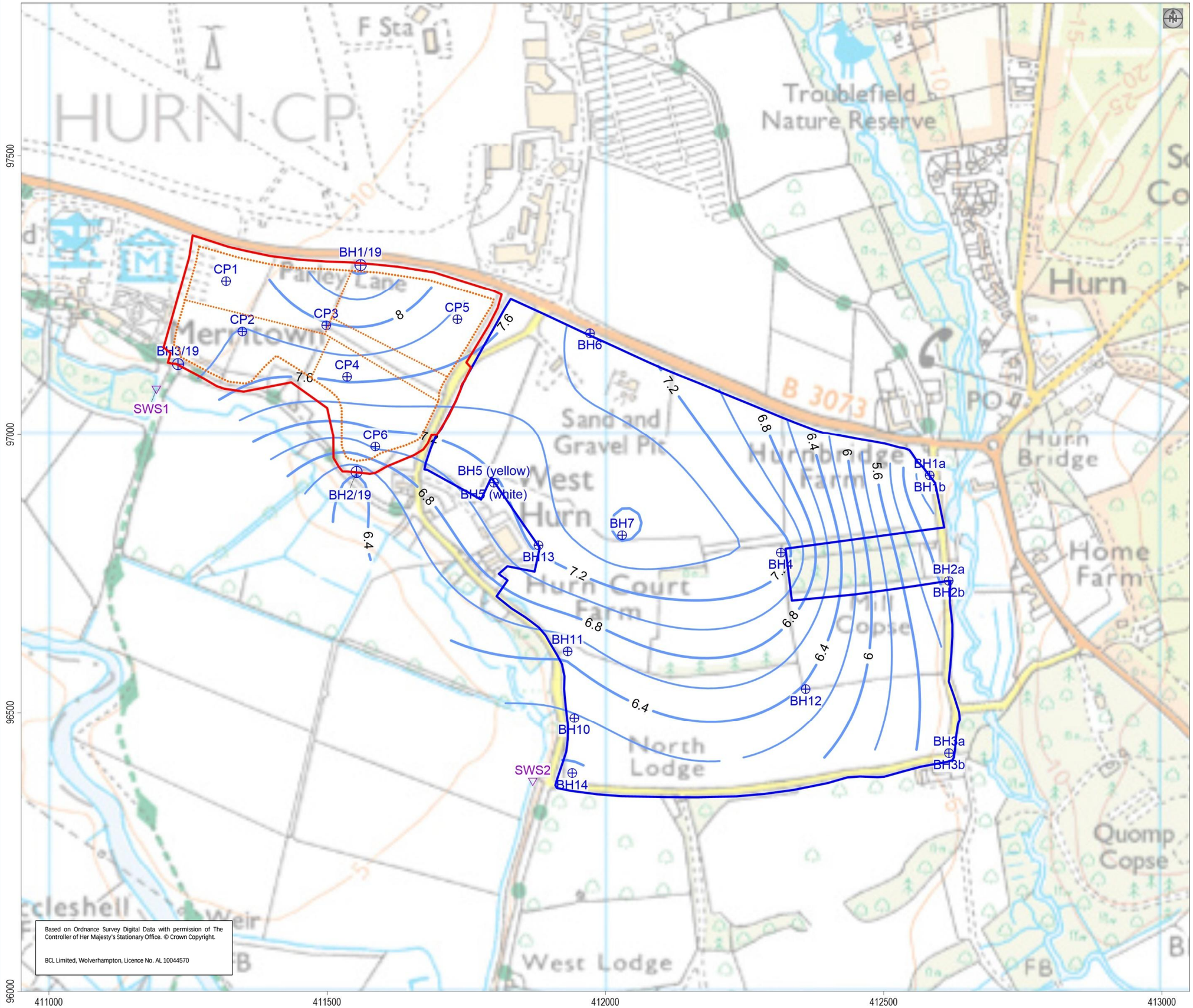
Figure 11 Minimum Groundwater Elevations

Drawn By: PS	**Scale: 1:6,500**
Date: 19/03/2020	**Format: A3L**



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BCL HYDRO

- Site Boundary
- Proposed Development Boundary
- Piezometer Location
- Groundwater Elevation Contours (maOD)
- Surface Water Sample Point

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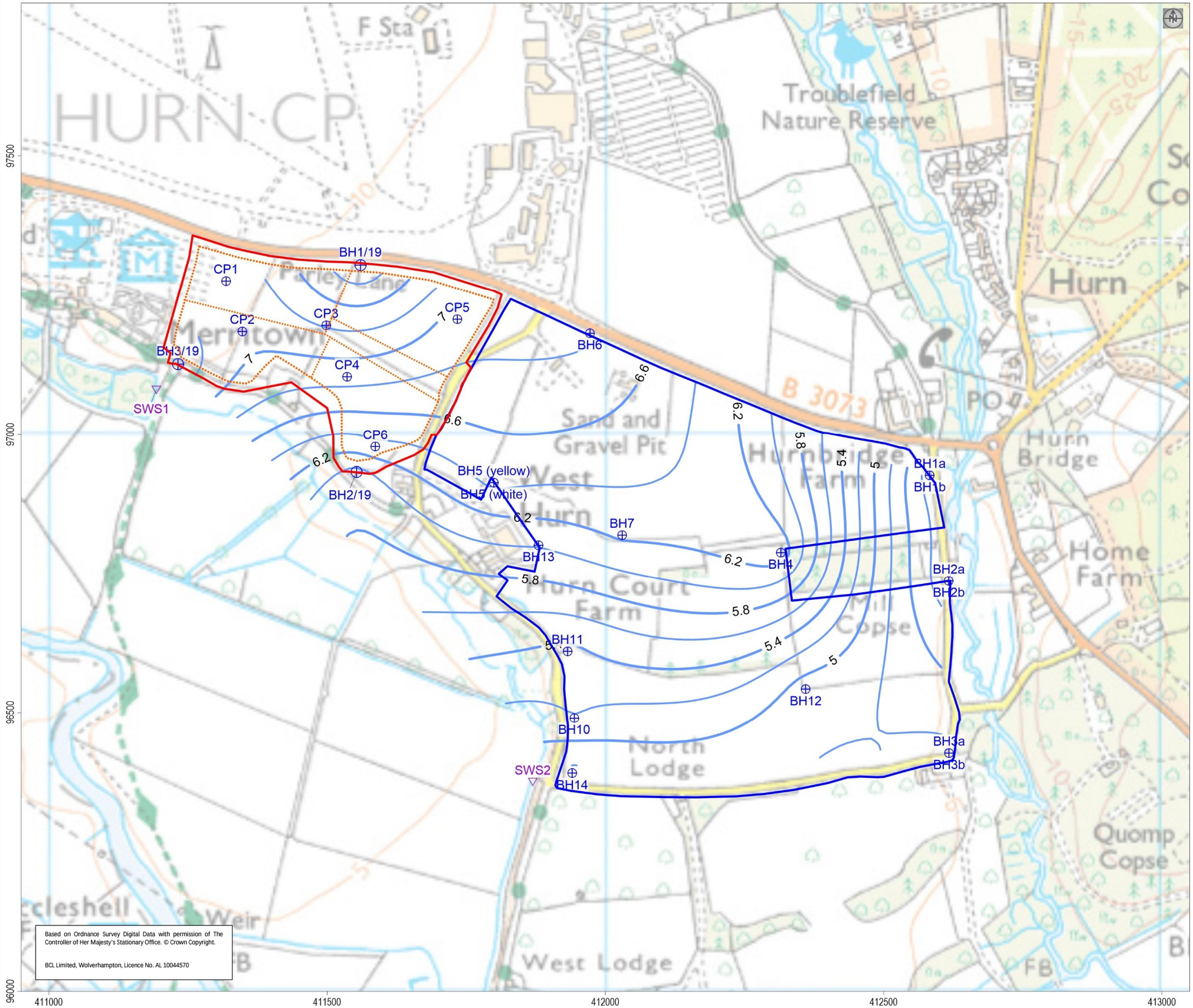
Figure 12 Maximum Groundwater Elevations

Drawn By: PS	**Scale: 1:6,500**
Date: 19/03/2020	**Format: A3L**



BCL HYDRO

- Site Boundary
- Proposed Development Boundary
- Piezometer Location
- Groundwater Elevation Contours (maOD)
- Surface Water Sample Point

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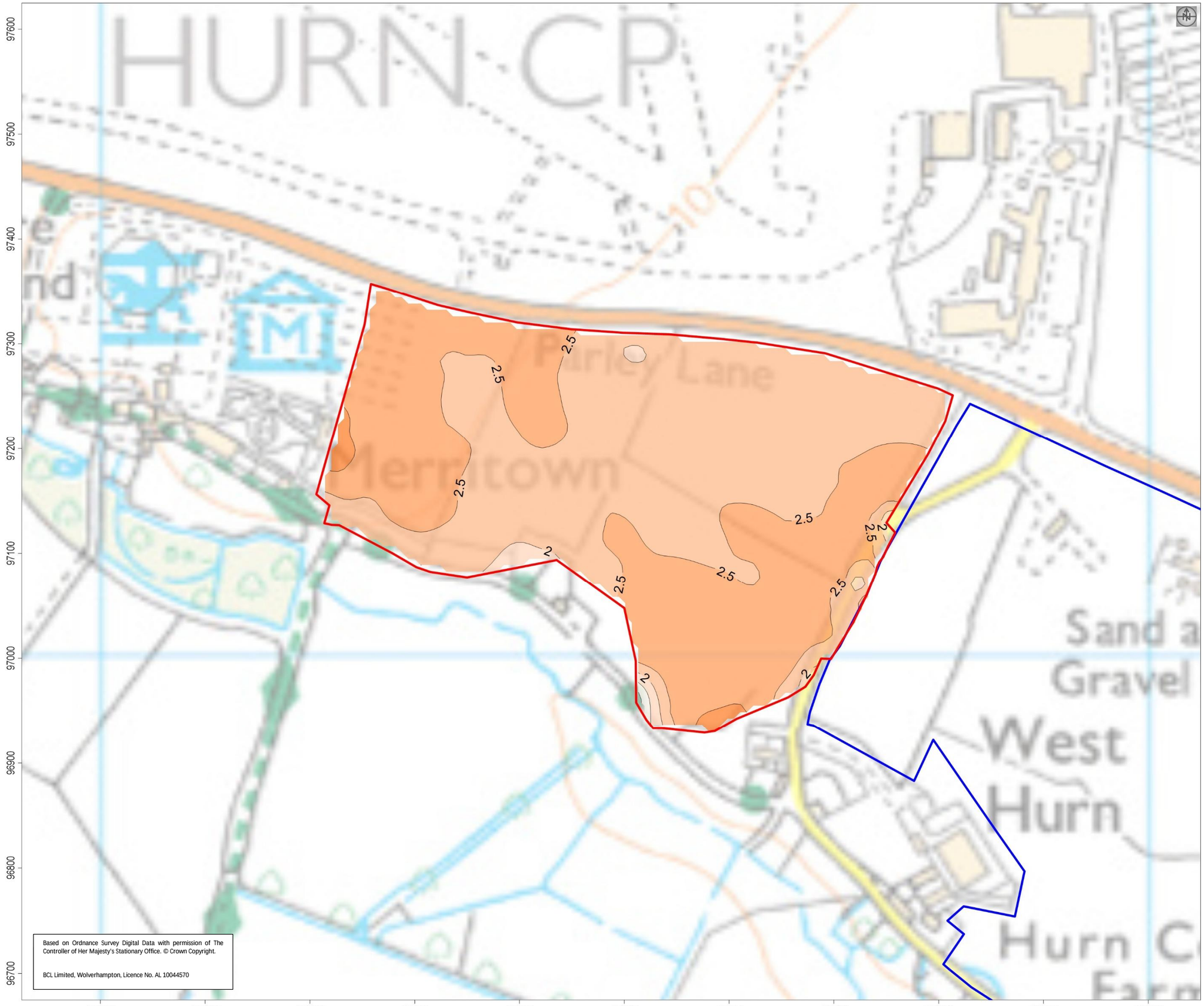
Figure 13 Average Groundwater Elevations

Drawn By: PS	**Scale: 1:6,500**
Date: 19/03/2020	**Format: A3L**



BCL HYDRO

Site Boundary

Proposed Development Boundary

Unsaturated Thickness (m)

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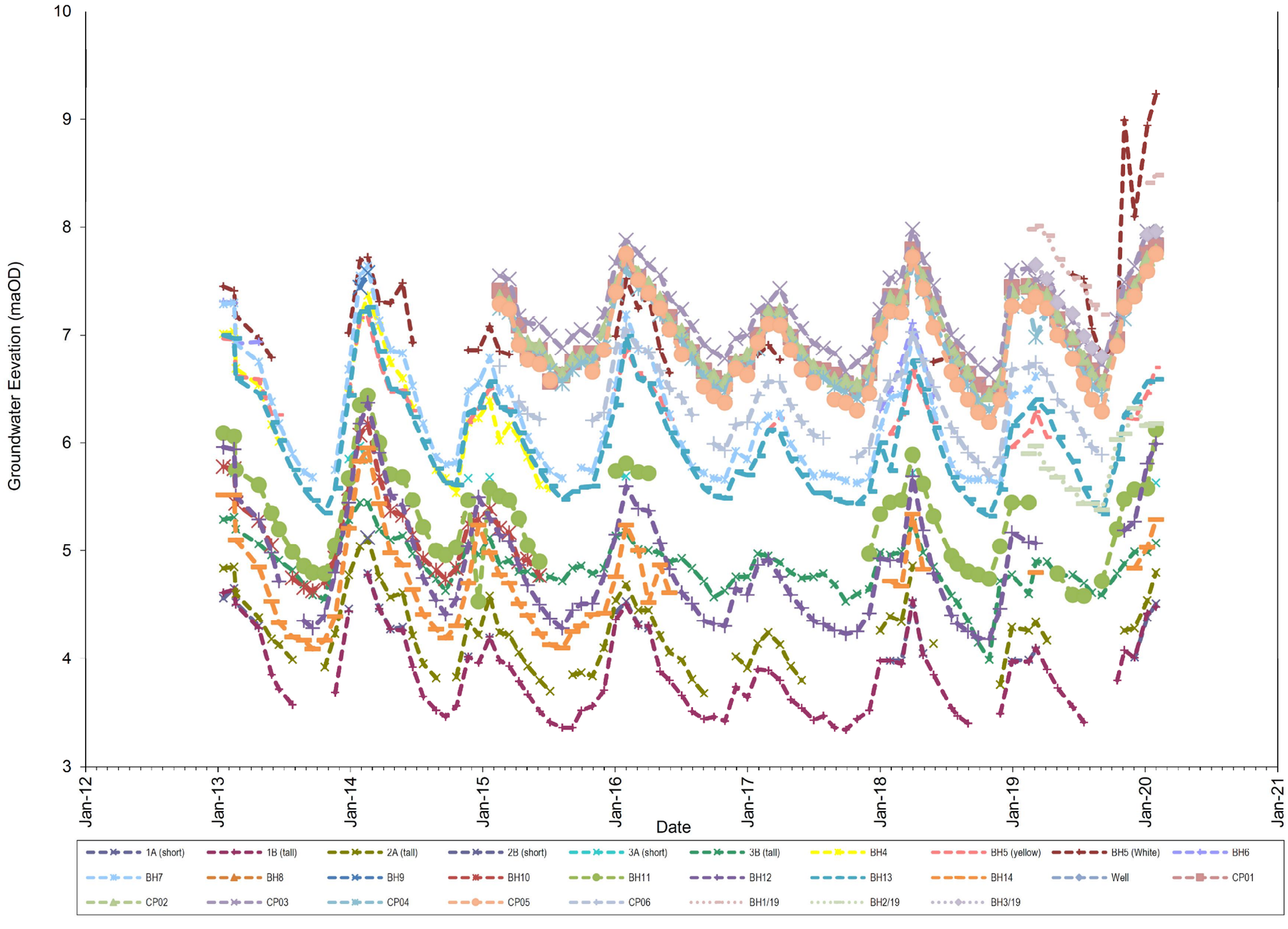
Figure 14 Minimum Unsaturated Thickness

Drawn By: PS	**Scale: 1:3,500**
Date: 19/03/2020	**Format: A3L**



BCL HYDRO

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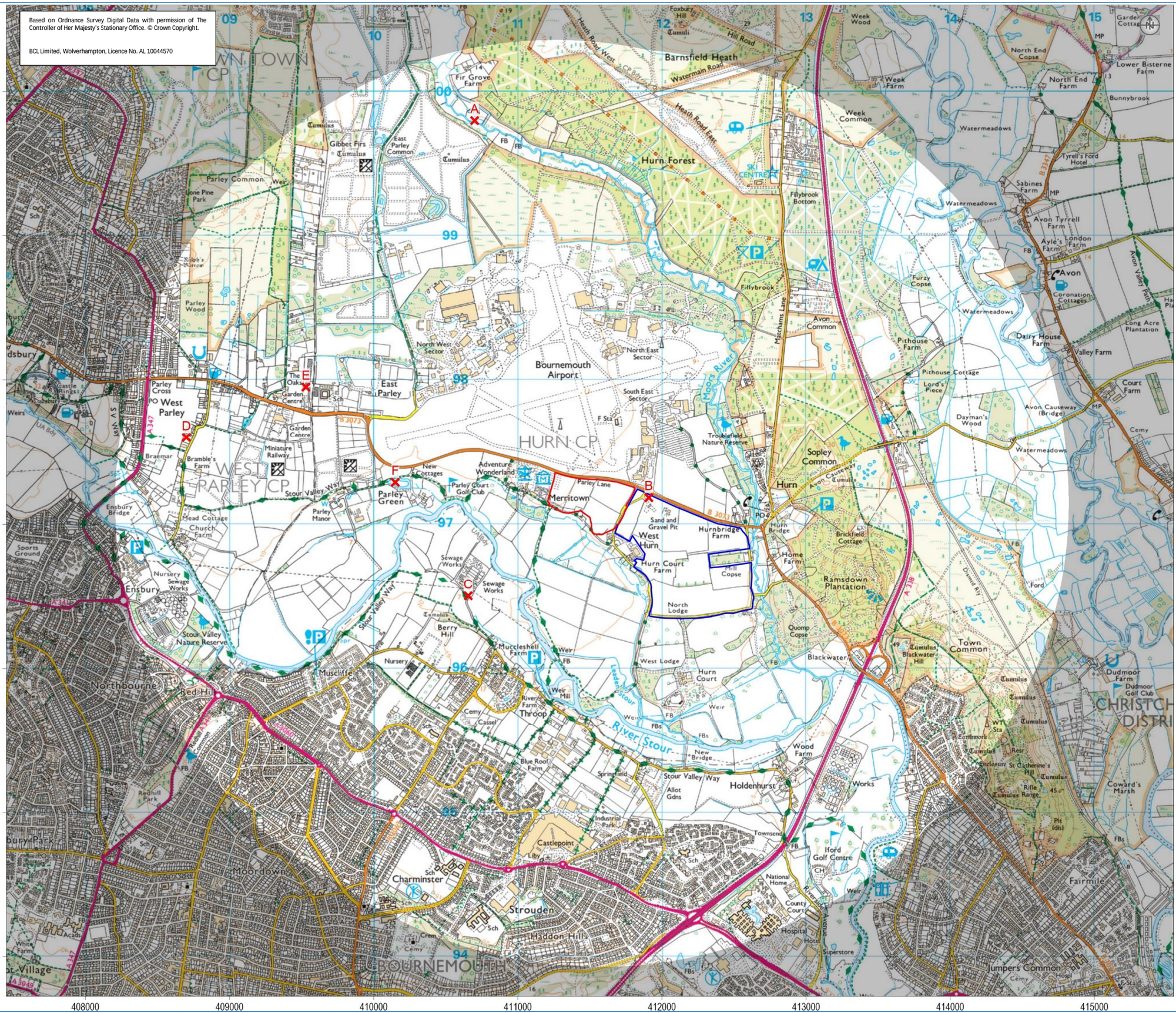
Figure 15 Groundwater Hydrograph

Drawn By: PS	**Scale: N/A**
Date: 19/03/2020	**Format: A3L**



Site Boundary

Proposed Development Boundary

Abstraction Location

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Figure 16 Abstractions

Drawn By: PS	**Scale: 1:1:25,000**
Date: 19/03/2020	**Format: A3L**

Parley Court Farm

Chapel Lane

Land North of Stockhouse

Avon Common Landfill

New Road North of Sewage Works

Adjacent Muscliff Purification Works

Riverside Area

Hicks Farm

North of Whiteleg Way

Riverside Area

Throop Mill Car Park

Throop House

Bradpole Road Recreation

100000
99000
98000
97000
96000
95000
94000

408000
409000
410000
411000
412000
413000
414000
415000

BCL HYDRO

Site Boundary

Proposed Development Boundary

Historic Landfill

Active Landfill

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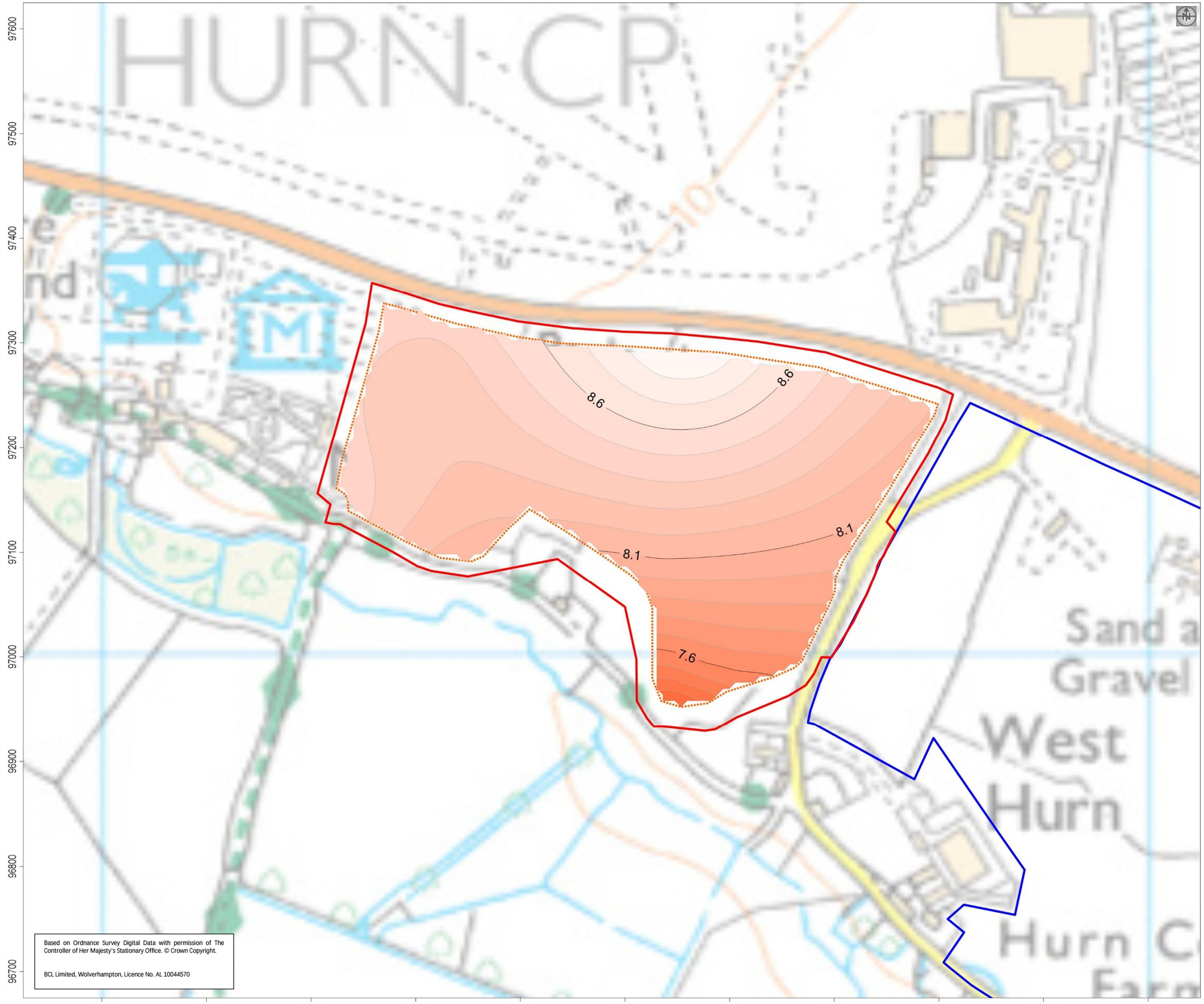
Figure 17 Landfill Sites

Drawn By: PS	**Scale: 1:25,000**
Date: 19/03/2020	**Format: A3L**



BCL HYDRO

- Site Boundary
- Proposed Development Boundary
- Phase Boundary
- Base of Workings (maOD)

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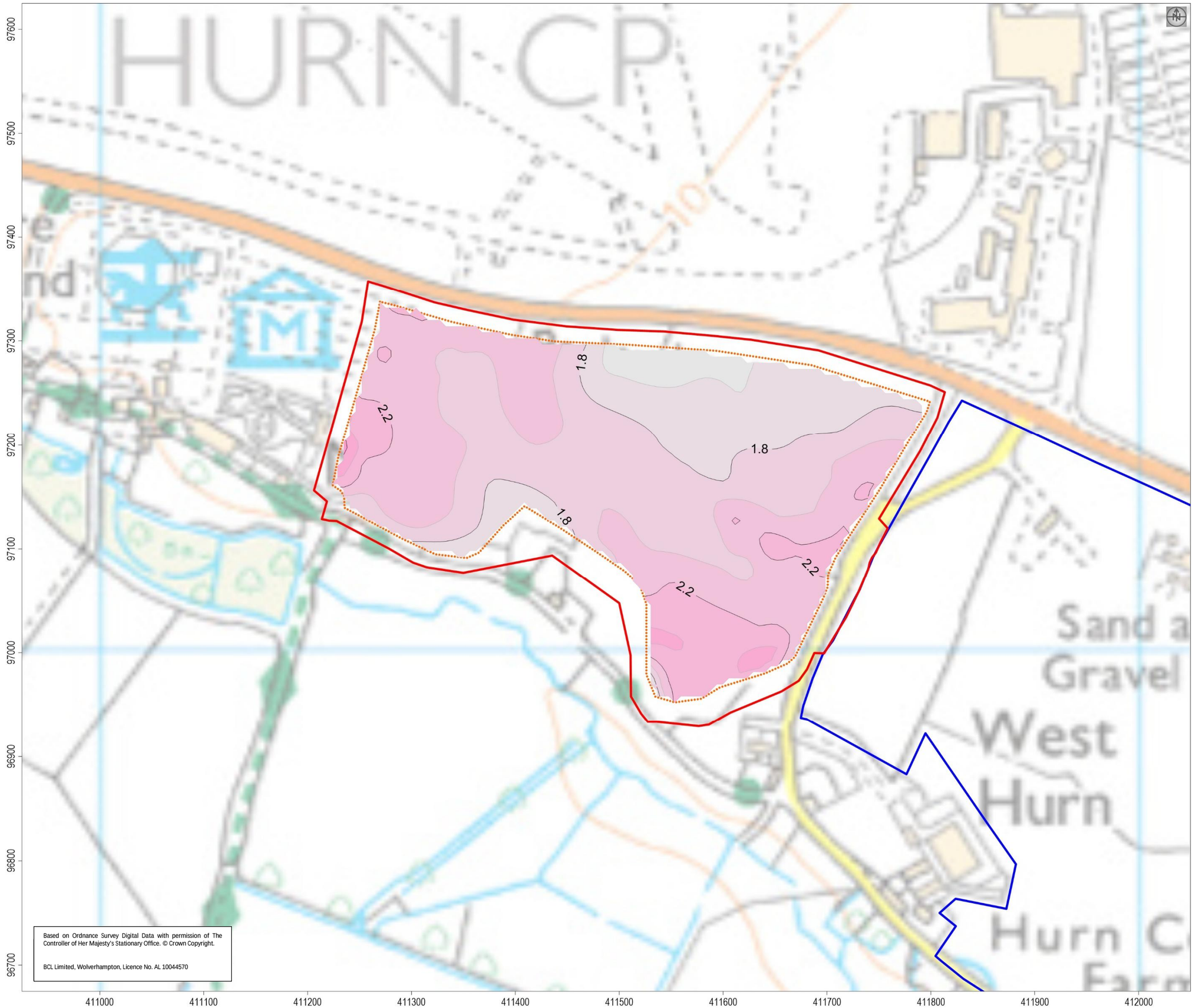
Figure 18 Proposed Base of Working, HRA1 Recovery Operation

Drawn By: PS	**Scale: 1:3,500**
Date: 19/03/2020	**Format: A3L**



BCL HYDRO

- Site Boundary
- Proposed Development Boundary
- Phase Boundary
- Depth of Infill (m)

S/HHDED/HC/HRA20/03

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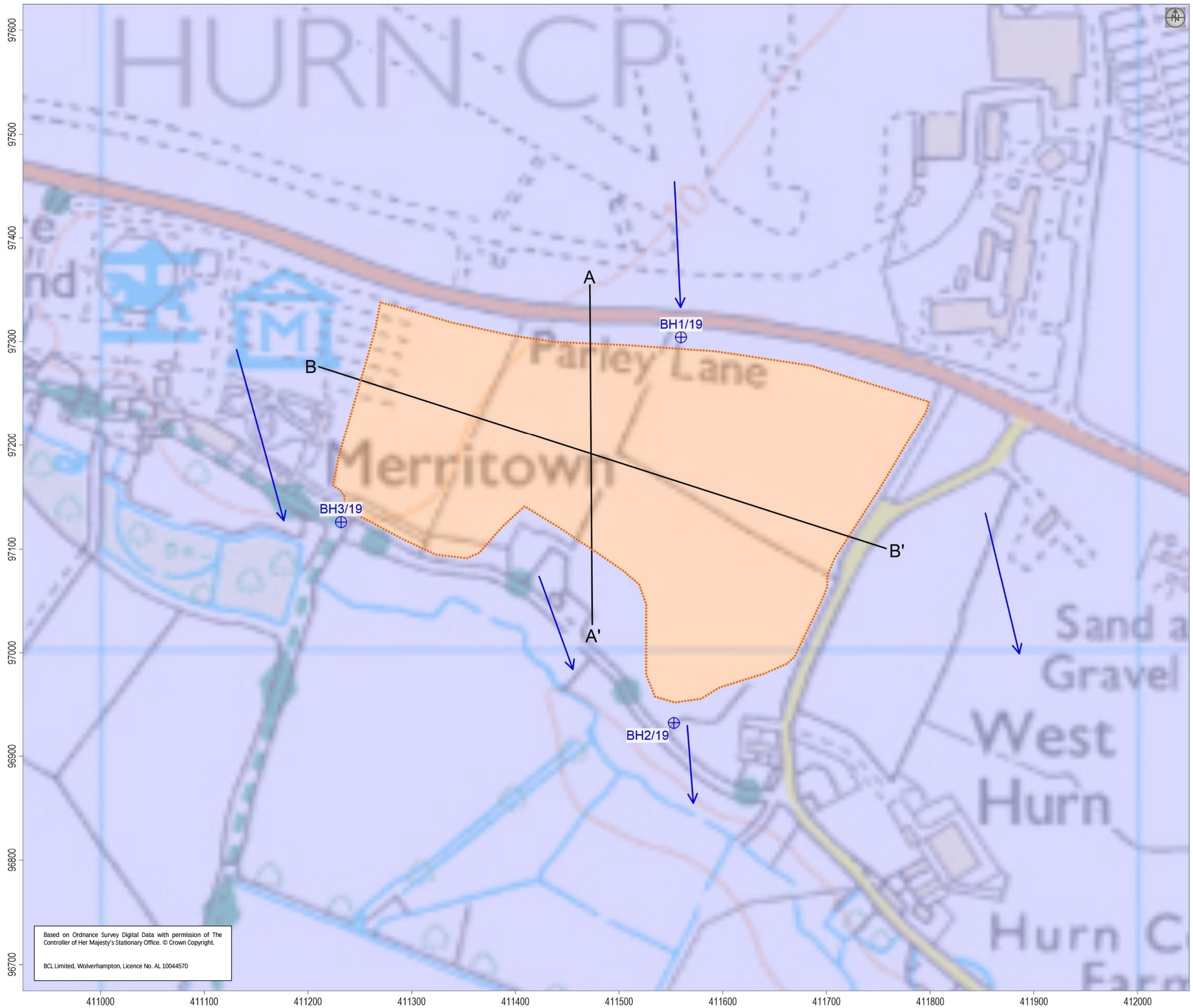
Figure 19 Depth of Infill, HRA1 Recovery Operation

Drawn By: PS	**Scale: 1:3,500**
Date: 19/03/2020	**Format: A3L**



BCL HYDRO

- Phase Boundary
- Source
- Receptor
- Piezometer
- Aquifer Pathway

S/HHDED/HC/HRA20/03

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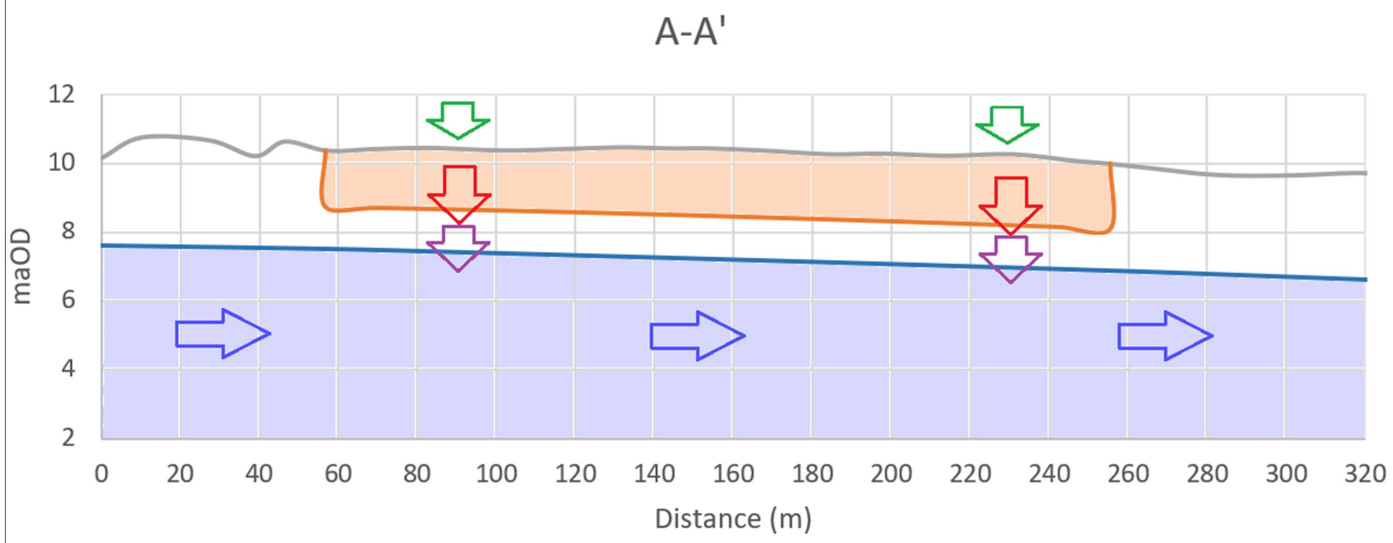
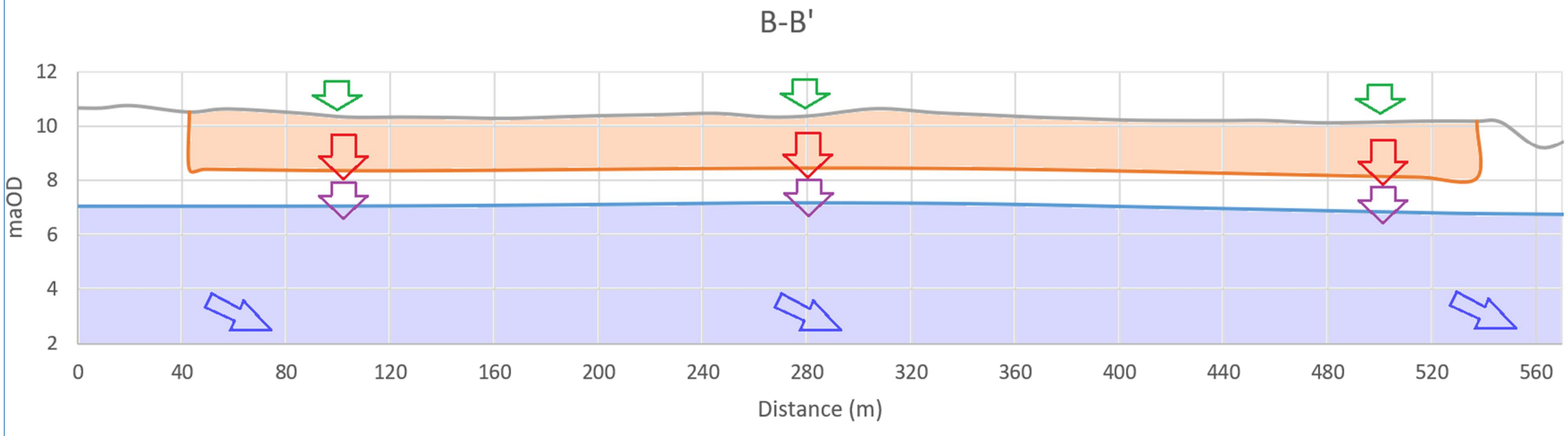
Figure 20 Conceptual Site Model Plan, HRA1 Recovery Operation

Drawn By: PS	**Scale: 1:3,500**
Date: 19/03/2020	**Format: A3L**





Ground Level

Average Groundwater Level

Base of Infill

Source

Receptor

Recharge

Inert Infill Pathway

Leakage

Unsaturated Pathway

Aquifer Pathway

S/HHDED/HC/HRA20/03

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Figure 21 Conceptual Site Model Sections, HRA1 Recovery Operation

Drawn By: PS	**Scale: N/A**
Date: 19/03/2020	**Format: A3L**

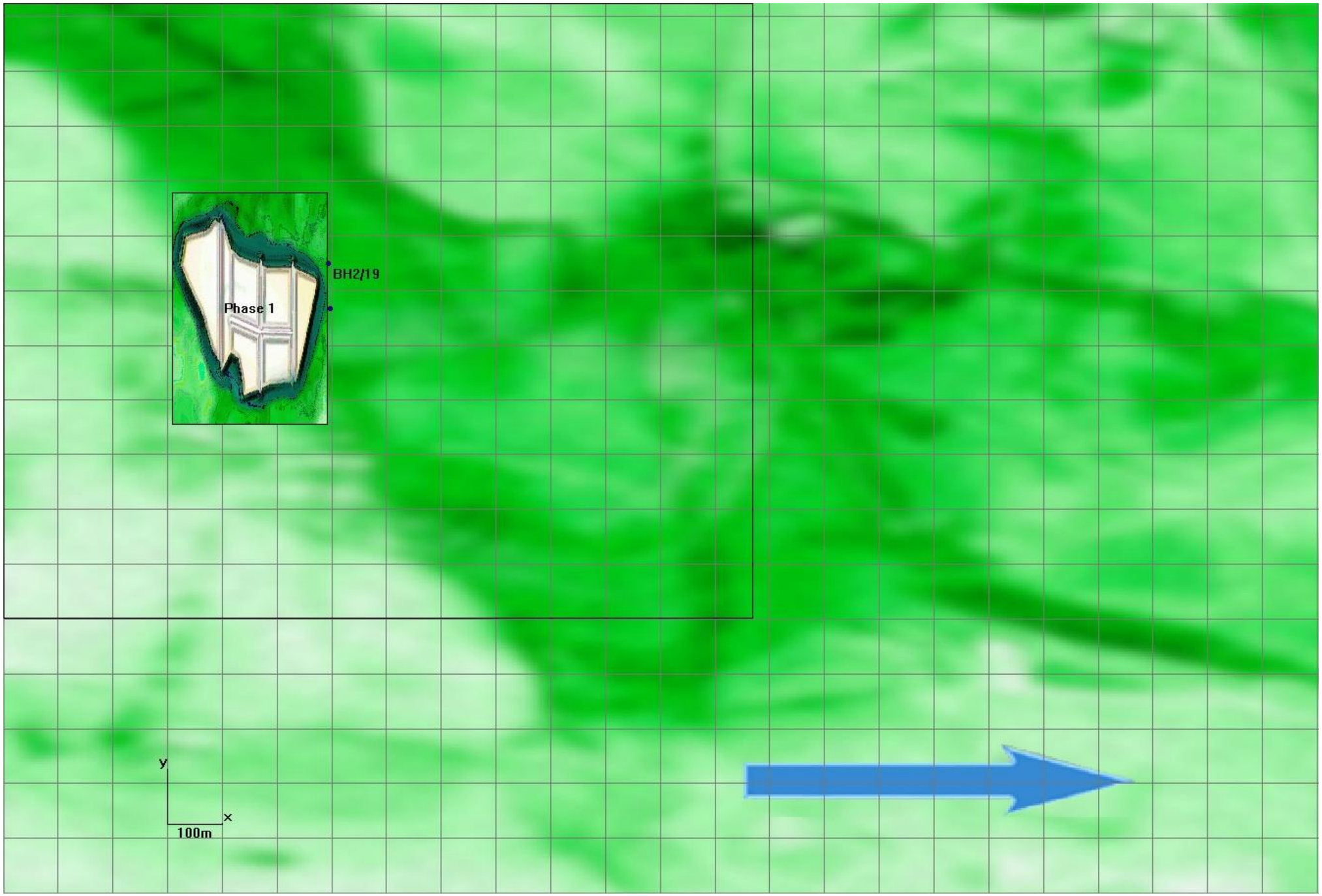

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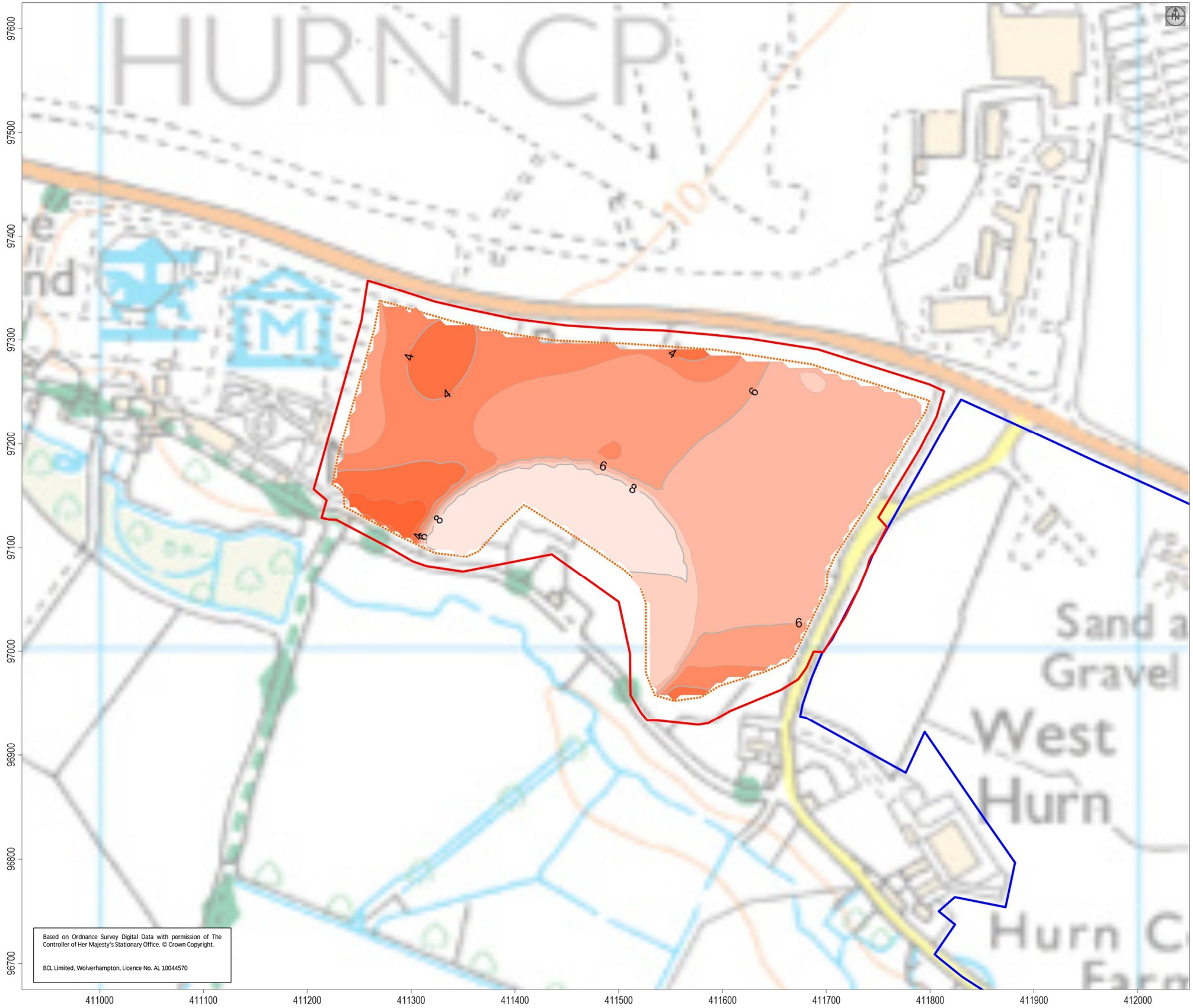
Figure 22 Modelled Domain, HRA1 Recovery Operation

Drawn By: PS	**Scale: 1:N/A**
Date: 19/03/2020	**Format: A3L**



BCL HYDRO

Site Boundary

Proposed Development Boundary

Phase Boundary

Base of Workings (maOD)

S/HHDED/HC/HRA20/03

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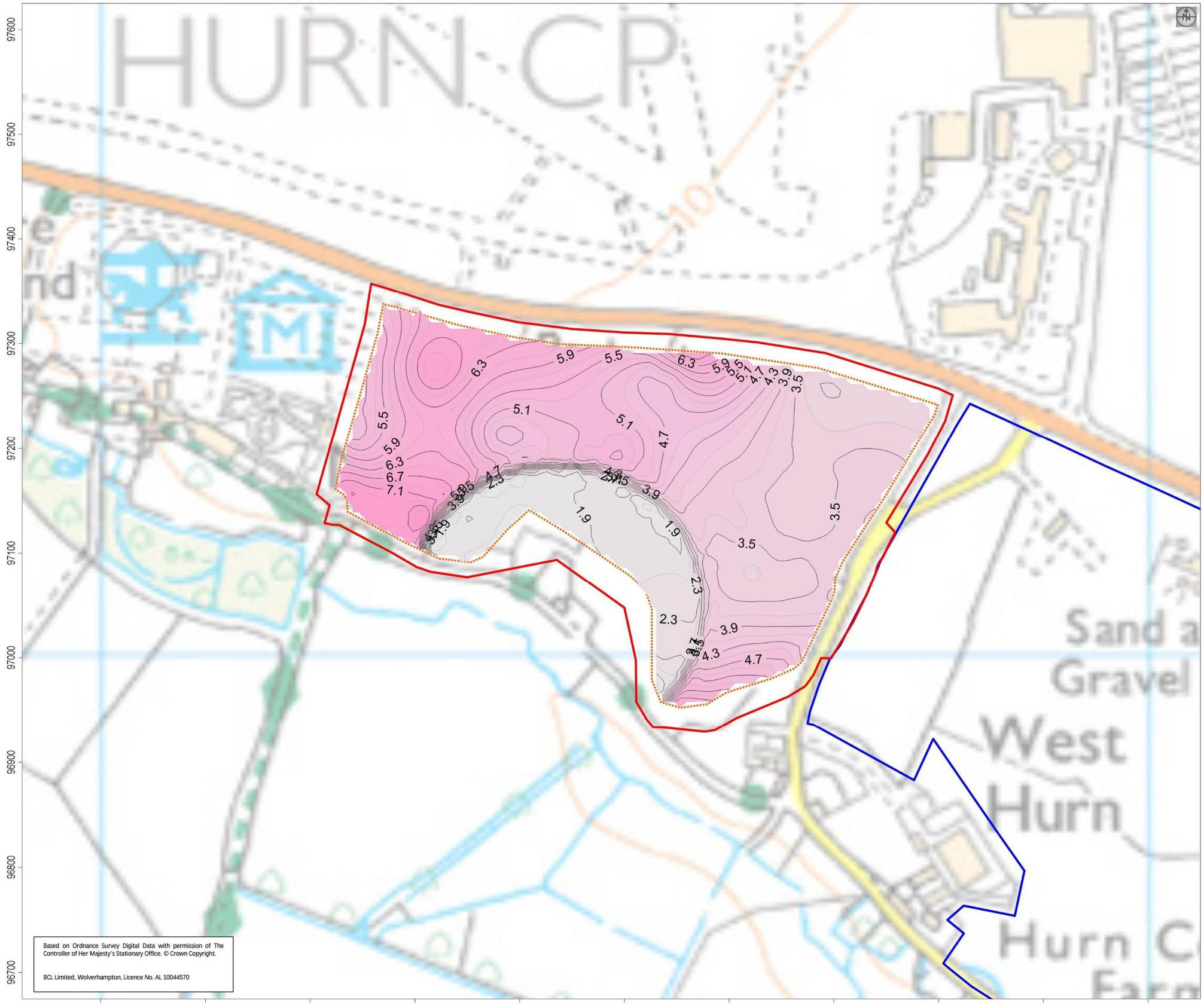
Figure 23 Proposed Base of Workings, HRA2 Recovery Operation

Drawn By: PS	**Scale: 1:3,500**
Date: 19/03/2020	**Format: A3L**



BCL HYDRO

Site Boundary

Proposed Development Boundary

Phase Boundary

Depth of Infill (m)

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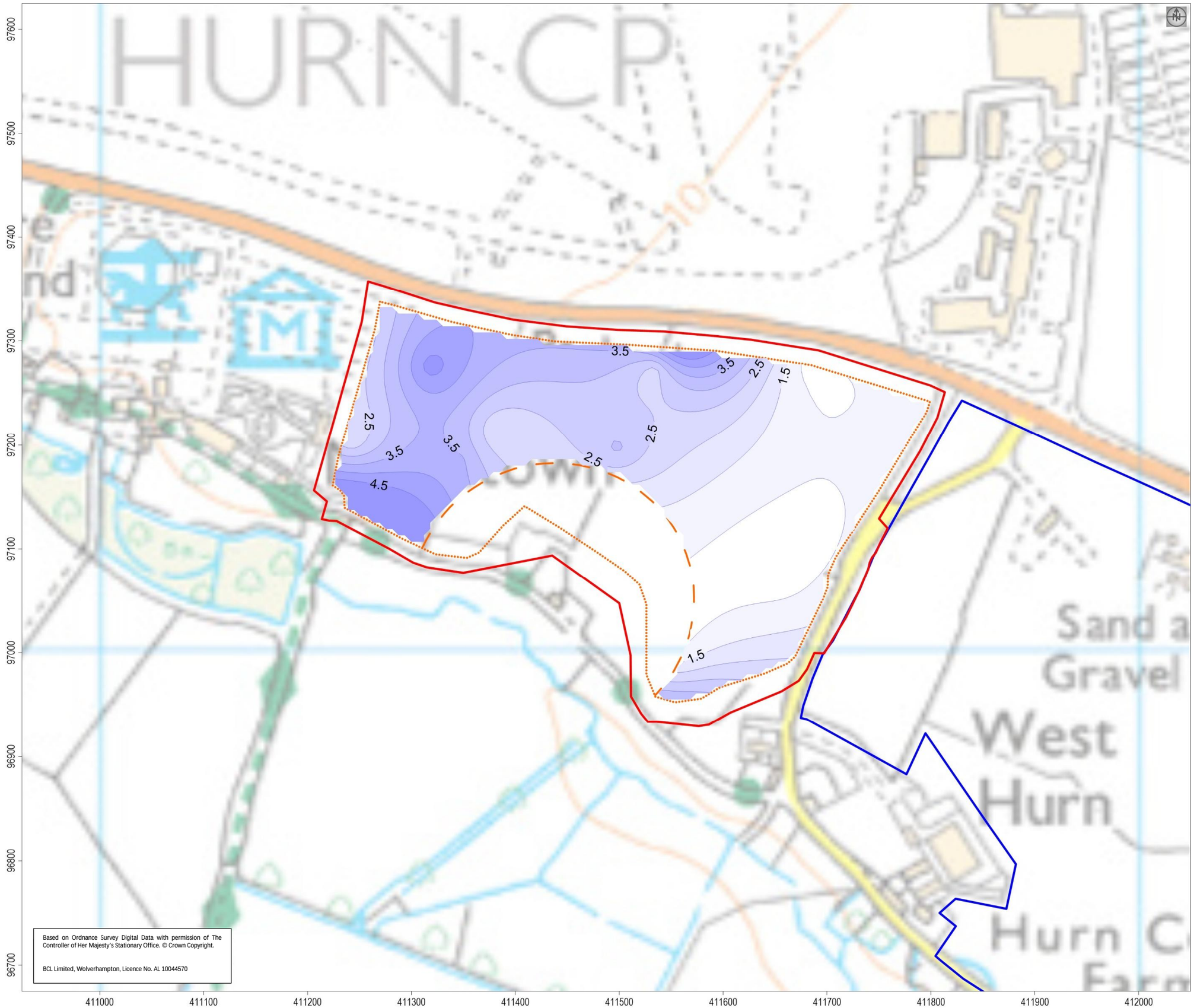
Figure 24 Depth of Infill, HRA2 Recovery Operation

Drawn By: PS	**Scale: 1:3,500**
Date: 19/03/2020	**Format: A3L**



BCL HYDRO

- Site Boundary
- Proposed Development Boundary
- Phase Boundary
- Sub Watertable Infill Depth (m)

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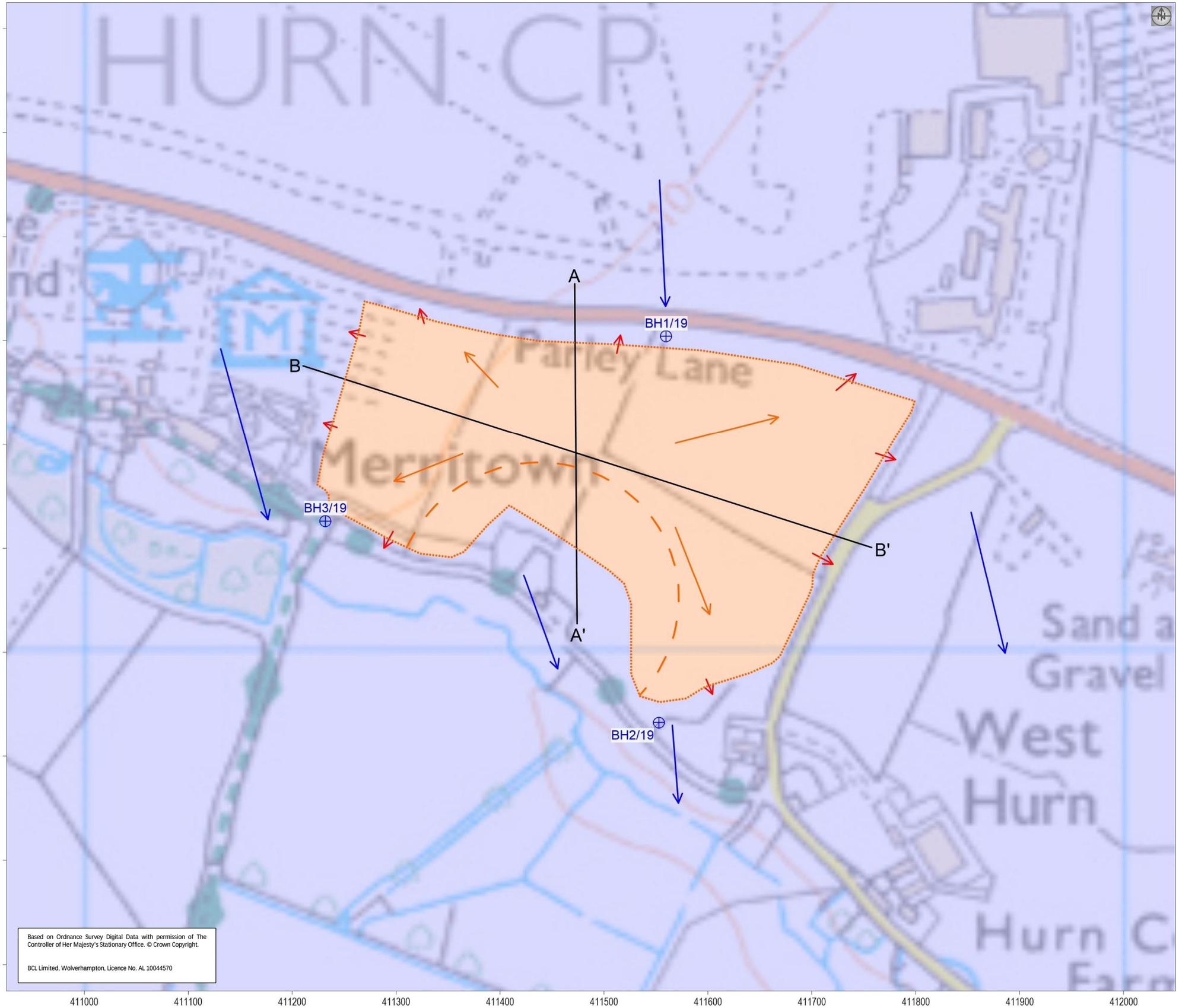
Figure 25 Sub Watertable Infill Depth, HRA2 Recovery Operation

Drawn By: PS	**Scale: 1:3,500**
Date: 19/03/2020	**Format: A3L**



BCL HYDRO

- Phase Boundary
- Source
- Receptor
- Piezometer
- Aquifer Pathway
- Inert Infill Pathway
- Leakage
- Limit of Deepening

S/HHDED/HC/HRA20/03

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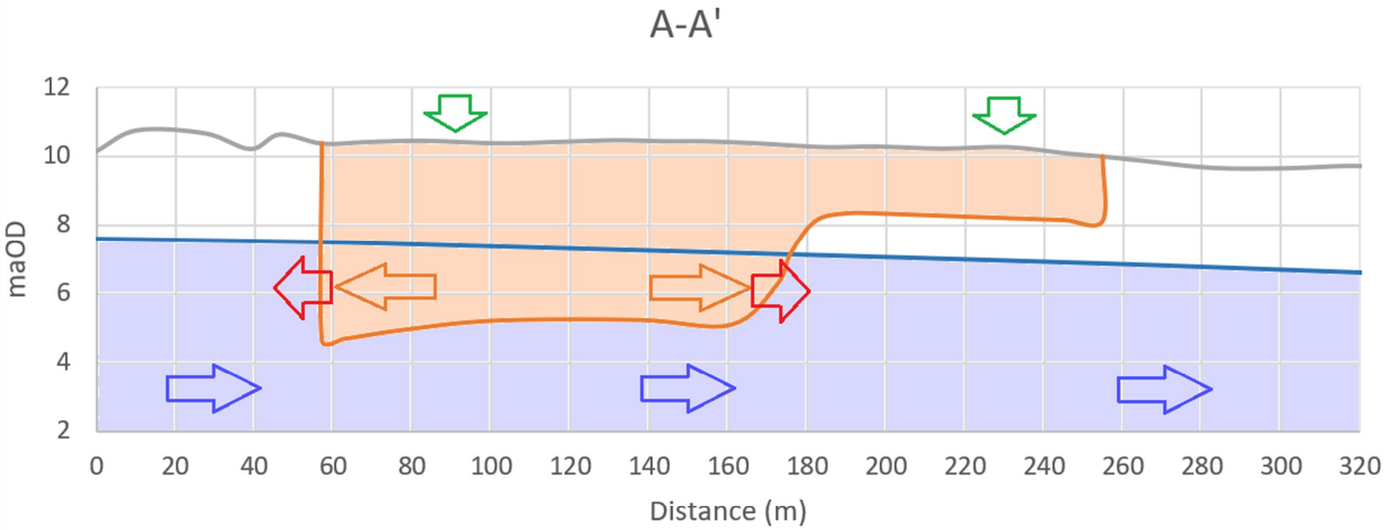
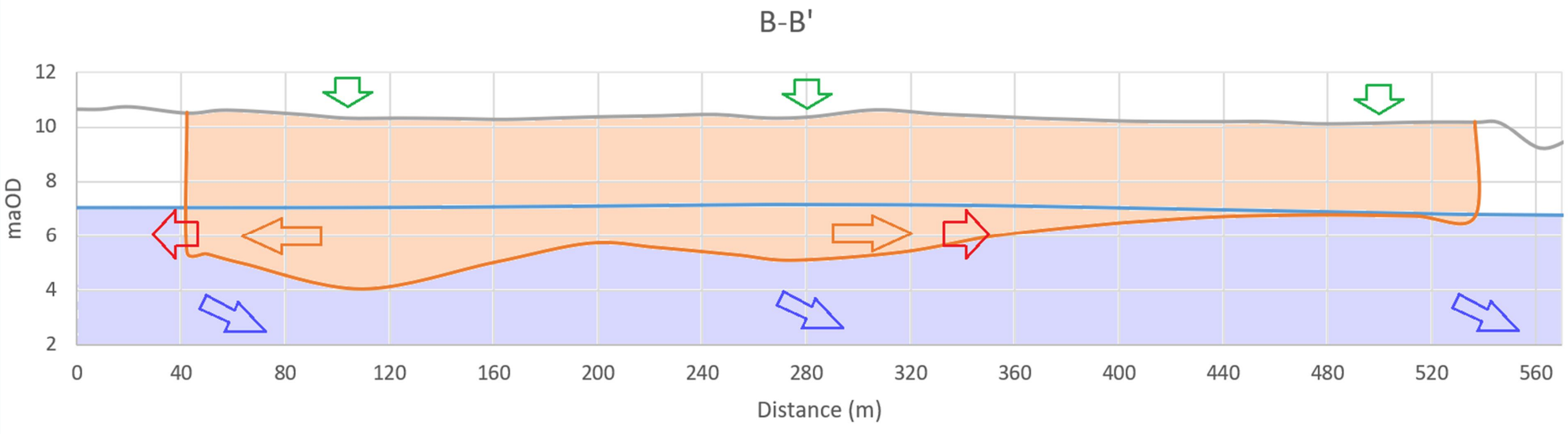
Figure 26 Conceptual Site Model Plan, HRA2 Recovery Operation

Drawn By: PS	**Scale: 1:3,500**
Date: 19/03/2020	**Format: A3L**





Ground Level

Average Groundwater Level

Base of Infill

Source

Receptor

Recharge

Inert Infill Pathway

Leakage

Unsaturated Pathway

Aquifer Pathway

S/HHDED/HC/HRA20/03

H.H. & D.E. DREW LTD

H.H. & D.E. Drew Limited

Hurn Court Farm Quarry, Hurn, Dorset

Hydrogeological Risk Assessment

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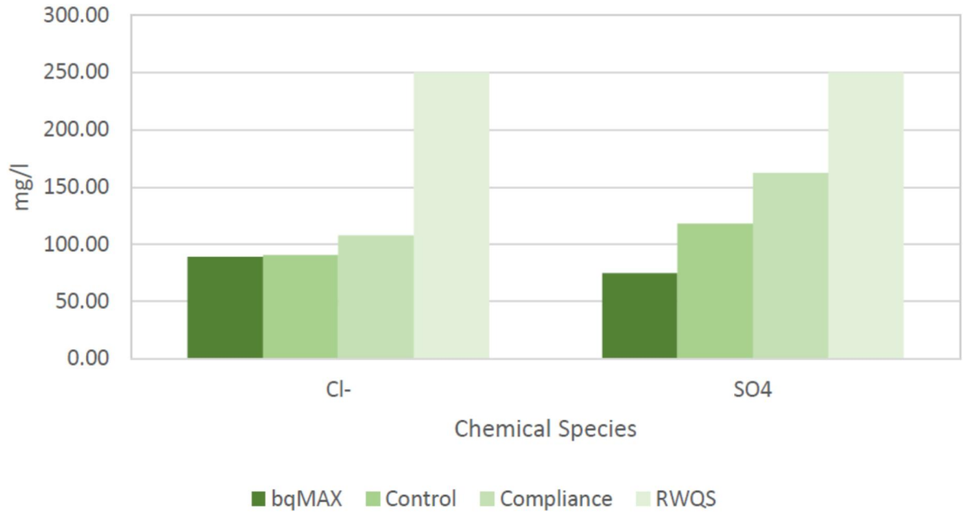
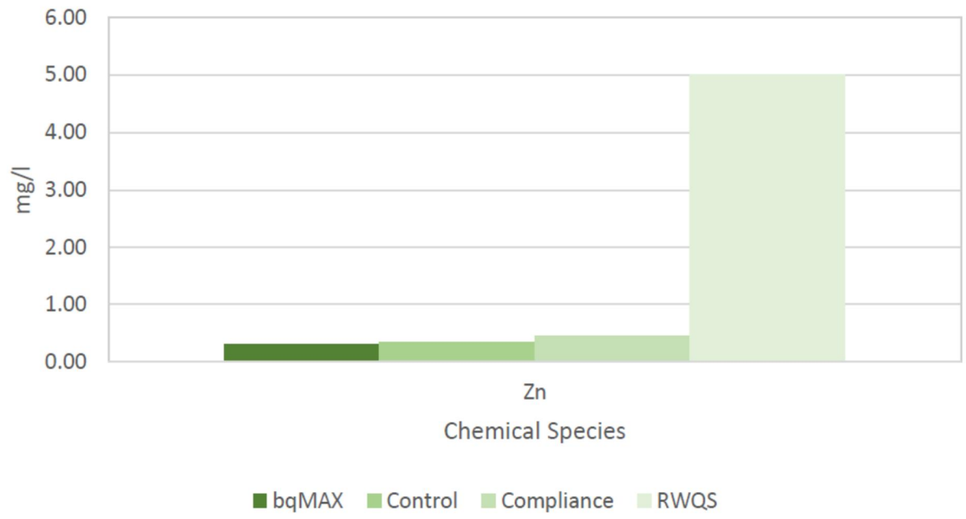
Figure 27 Conceptual Site Model Section, HRA2 Recovery Operation

Drawn By: PS	**Scale: N/A**
Date: 19/03/2020	**Format: A3L**





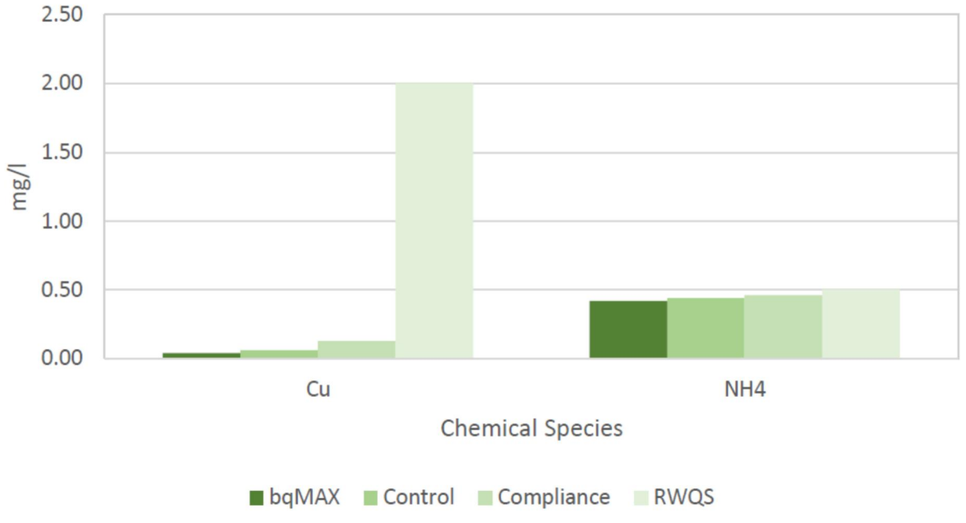


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Figure 28 Control Levels and Compliance Limits

Drawn By: PS	**Scale: N/A**
Date: 19/03/2020	**Format: A3L**

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Hurn, Dorset

Application for Waste Recovery Permit
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Appendix 1 Data Sources

BCL HYDRO
BCL Consultant Hydrogeologists Limited

Technology Centre, Wolverhampton Science Park, Glashier Drive, Wolverhampton
West Midlands, WV10 9RU. Tel: 01902 824111, Fax: 01902 824112
email: info@bclhydro.co.uk, web: http://www.bclhydro.co.uk
Registered Office: 33, Wolverhampton Road, Cannock, West Midlands, WV11 1AP
Registered in England & Wales. Company Registration Number: 4043373

Regulatory & Industry Standard Guidance, Methodologies & Literature References

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Hurn, Dorset

Application for Waste Recovery Permit
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Appendix 2 Restoration Surface Water Management Scheme

BCL HYDRO
BCL Consultant Hydrogeologists Limited

Technology Centre, Wolverhampton Science Park, Glashier Drive, Wolverhampton
West Midlands, WV10 9RU. Tel: 01902 824111, Fax: 01902 824112
email: info@bclhydro.co.uk, web: http://www.bclhydro.co.uk
Registered Office: 33, Wolverhampton Road, Cannock, West Midlands, WV11 1AP
Registered in England & Wales. Company Registration Number: 4043373

groundwater is intercepted to a level sufficient to prevent groundwater flooding using permeable materials native to the Site.

4.3 RESTORATION

Overview

4.3.1 The Western Extension will be restored to the same ground cover and ground elevations as prevailing prior to the development. It should however be noted that the permeable aquifer material underlying the Site is to have been replaced by inert infill material of relatively low permeability. This has the potential to result in increased runoff rates relative to pre-development conditions, as assessed below.

Greenfield Rate / Volume Estimation

4.3.2 Point catchment descriptors for the Site location have been sourced from the Centre for Ecology & Hydrology (CEH) Flood Estimation Handbook (FEH) web service.

4.3.3 The resultant data was applied to the CEH / Wallingford Hydro Solutions (WHS) Revitalized Flood Hydrograph Model (ReFH2), from which as rural Greenfield Runoff Rates (GRRs) and greenfield 6 Hour Cumulative runoff Volumes (6HCVs) for the 15.16ha area to receive inert infill were derived in line with the relevant technical guidance[2].

4.3.4 The results of the assessment are presented at *table 1* below.

***Table 1*: Estimation of Greenfield Runoff Rates & Volumes, Western Extension**

Storm Return Period (yrs)	Greenfield Runoff Rate (l/s)	Greenfield 6 Hour Cumulative Runoff Volume (m^3)
1 in 1	22.73	297.02
1 in 100	75.45	1048.51

Post Development Rate / Volume Estimation

4.3.5 The introduction of inert infill material following restoration has been simulated via application of the urbanisation model within ReFH2, using runoff coefficients derived from the NCB Procedure[3].

2 Wallingford Hydro Solutions, *The Revitalised Flood Hydrograph Model ReFH2.2: Technical Guidance*, 2016
3 National Coal Board, *'Technical Management of Water in the Coal Mining Industry'*, 1982

4.3.6 The NCB procedure (derived from the Rational Method) allows estimation of runoff coefficients from catchment slope, vegetative cover and soil type. The reduction in permeability resulting from the introduction of inert infill has been reflected via adjustment of soil type from 'Sandy Gravel' to 'Clay / Loam', resulting in a runoff coefficient of 0.65.

4.3.7 The resulting estimated Post Development Runoff Rates (PDRRs) and Post Development 6HCVs are presented at *table 2* below.

***Table 2*: Estimation of Post Development Runoff Rates & Volumes, Western Extension**		
Storm Return Period (yrs)	**Greenfield Runoff Rate (l/s)**	**Greenfield 6 Hour Cumulative Runoff Volume (m^3)**
1 in 1	156.3	1744.12
1 in 100	453.65	5105.02

4.3.8 The assessment suggests potential for post development runoff rates and volumes to significantly exceed those prevailing under greenfield conditions as at *table 1*.

4.3.9 In view of the foregoing, it is considered necessary that the restored Western Extension be equipped with a drainage system (the Drainage System) designed to attenuate runoff rates / volumes to within those prevailing under pre-development conditions (thus mitigating any resultant on or off Site flood risk).

Drainage System Design

4.3.10 In order to preserve the intended agricultural afteruse of the Site, the Drainage System will take the form of a single attenuation basin fed by perimeter drainage ditches, as presented at *figure 4*, thus minimizing the land area required for drainage provision.

4.3.11 It is proposed that a vertically sided attenuation basin (the Attenuation Basin) be established within the south eastern limit of the Western Extension, being of 2,500m^2 in area with a basal elevation of 7maOD and a maximum freeboard of 9maOD.

4.3.12 The southern limit of the Attenuation Basin should be equipped with an orifice plate featuring a 0.11m Internal Diameter (ID) orifice of invert level 7maOD and a 0.13m ID orifice of invert level 7.67maOD.

4.3.13 The lower orifice invert is to be at equal elevation to the Attenuation Basin base to ensure permanent standing water is not formed (the area thus only being inundated during and immediately after a storm event, thus limiting bird strike risk to the adjacent airport). The Attenuation Basin should however be equipped with a 1m high perimeter fence incorporating chicken wire at the base to deter wildfowl entry and to ensure public safety.

4.3.14 The orifice plate should connect to a buried discharge pipeline (the Discharge Pipeline) to convey flows from the Site to the Southern Stream. This pipeline should link the orifice plate (7maOD) to the Southern Stream at approximately 5.6maOD. This should be in the form of an 8" ID UPVC pipe equipped with discharge headwall and erosion prevention spillway at its point of discharge.

4.3.15 The Attenuation Basin should be equipped with a lowered lip (to minimum elevation 9maOD) equipped with erosion prevention and designed to convey exceedance flows safely and efficiently towards the Southern Stream.

4.3.16 A vertically sided ditch should be installed to the southern boundary of the Western Extension (Ditch A), being of 1m width and minimum depth 0.8m, with a slope of 0.0013 promoting eastwards drainage. This ditch will intercept runoff from the infilled area and channel it to the Attenuation Basin.

4.3.17 A second vertically sided ditch should be installed to the eastern boundary of the Western Extension (Ditch A), being of 1m width and minimum depth 0.85m, with a slope of 0.0011 promoting southwards drainage. This ditch will intercept further runoff from the infilled area and channel it to the Attenuation Basin.

Assessment of Drainage System: Attenuation Basin

4.3.18 Time series output from ReFH2 for the post development conditions (as at *section 4.3.5*) has been applied to the Attenuation Basin design to assess system performance. Baseflow contributions have been ignored due to the low permeability infill in which the Attenuation Basin is to be formed and its being perched above groundwaters. A 10% adjustment to rainfall intensity has been applied in line with Environment Agency (EA) guidance (upper end % change to 2039) to allow for climate change.

4.3.19 The results of the assessment are presented at *appendix 2*, with summary results at *table 3* below.

***Table 3*: Assessment of Attenuation Basin**				
Storm Return Period (yrs)	**Peak Flow (l/s)**	**6 Hour Cumulative Volume (m^3)**	**Peak Attenuation (m^3)**	**Available Attenuation (m^3)**
1 in 1	20.52	206.08	1,647	5,000
1 in 100	74.19	616.07	4,759.21	

4.3.20 Assessment indicates that the Attenuation Basin and associated orifice flow control are sufficient to reduce post development runoff rates and 6HCVs to within greenfield rates / volumes by 2.21l/s and 91m^3 respectively for a 1 in 1 year storm event and by 1.26l/s and 432m^3 respectively for a 1 in 100 year storm event, whilst remaining within the available attenuation volume.

4.3.21 It is thus considered that the Attenuation Basin design is sufficient to mitigate against any risk of impact upon off-Site / downstream flood risk whilst ensuring the Attenuation Basin will not form a source of on-Site flooding in its own right.

Assessment of Drainage System: Discharge Pipeline

4.3.22 The flow conveyance capacity of the Discharge Pipeline has been assessed using Hazen Williams Equation. The results of the analysis are presented at *appendix 3* with summary detail at *table 4* below.

***Table 4*: Assessment of Discharge Pipeline Capacity**			
Variable	**Units**	**Value**	**Justification**
Pipe Radius	m	0.102	0.2m ID
Slope	-	0.03	At minimum head, 45m pipe run
Roughness Coefficient	-	150	Literature value for UPVC pipe
Discharge Rate	l/s	97.01	Hazen Williams Equation

4.3.23 Analysis indicates that at minimum prevailing head (Attenuation Basin level of 7maOD), the estimated conveyance capacity of the Discharge Pipeline is 97.01l/s. This is in comfortable excess of the 1 in 100 year peak flow rate (orifice plate restricted) as estimated at *table 3*, ensuring that the Discharge Pipeline will not restrict outflows from the Attenuation Basin and thus potentially result in on Site flooding.

Assessment of Drainage System: Ditches A and B

4.3.24 The flow conveyance capacity of Ditches A and B has been estimated using Manning's open channel flow equation[4]. The results of the assessment are also presented at *appendix 3* with summary detail at *table 5* below.

***Table 5*: Assessment of Ditch Capacity**

Variable	Units	Ditch A	Ditch B	Justification
Ditch Width	m	1	1	As designed
Ditch Depth	m	0.8	0.85	As designed
Slope	-	0.0013	0.0011	Estimated from pre-development ground elevations / design ditch lengths
Roughness Coefficient	-	0.027	0.027	Excavated earth channel, straight with grass banks.
Flow Capacity	l/s	477.37	477.18	Manning's Equation

4.3.25 The flow conveyance capacity of both Ditches A and B are estimated to be in comfortable excess of the 1 in 100 PDRR as estimated at *table 2*. It is thus considered that the ditch design is sufficient to ensure the conveyance of design runoff rates without the ditches forming a potential source of on-site flooding.

Assessment of Drainage System: Bird Strike Risk

4.3.26 The Drainage System has been designed in a manner so as to minimize its attractiveness to birds in accordance with recommendations made by the Civil Aviation Authority (CAA)[5]. These measures are as detailed below:

i. There will be no permanent standing water retained within the Drainage System, which will only hold water temporarily and for limited duration immediately after rainfall events.

ii. The Attenuation Basin is to have a perimeter fence, will be vertically sided, will not incorporate any islands, will have no bank side or emergent vegetation and will not accommodate fish, thus minimizing its value as bird habitat.

iii. Ditches A & B will be vertically sided and will have no bank side or emergent vegetation, thus minimizing their value as bird habitat.

4 Shaw, E.M, '*Hydrology in Practice*', Second Edition, Chapman 7 Hall, 1988
5 Civil Aviation Authority (CAA), '*Wildlife Hazard Management at Aerodromes*', CAP772, October 2017

iv. The Drainage System will be regularly maintained, including the clearance of vegetation and removal of cuttings as detailed at *section 6*.

v. The Drainage System will be incorporated within the Site Bird Strike Management Plan.

4.3.27 It should be noted that assessment of the Attenuation Basin, as at *section 4.3* and *appendix 2*, provides estimates of the time required for this feature to fully drain under both a 1 in 1 year storm event and a 1 in 100 year storm event, as at *table 6* below.

***Table 6*: Attenuation Basin Time to Drain**

Variable	1 in 1	1 in 100
Time to Fully Drain from Storm Abatement (hours)	42	59.3
Time to Drain to <10cm Depth from Storm Abatement (hours)	28.5	45.5

4.3.28 Assessment demonstrates that the Drainage System will fully drain within 60 hours of storm abatement after a 1 in 100 year storm (AEP 0.1) and within 46 hours of storm abatement after a 1 in 1 year storm (AEP 1), with the majority of attenuated water being removed in significantly less time. It is thus considered that attenuated waters will not reside for sufficient duration to provide habitat for birds.

4.3.29 It is therefore considered that the design of the Drainage System and its continued maintenance are sufficient to mitigate any potential for increasing bird strike risk at Bournemouth Airport.

4.4 RECOMENDATIONS

4.4.1 Mineral extraction depths within the Western Extension should not exceed maximum recorded groundwater elevations as presented at *figure 3*, and should not exceed 7maOD.

4.4.2 The current scheme of groundwater monitoring should be continued in order to allow identification of any significant sustained exceedance of baseline maximum groundwater levels that may potentially impact upon permitted extraction depths.

4.4.3 In the event of accidental groundwater interception during mineral extraction, the affected area should be immediately backfilled to a level sufficient to preclude groundwater flooding using permeable materials native to the Site.

4.4.4 The restored Western Extension is to be equipped with a Drainage System as outlined at *section 4.3* to ensure the free drainage of the Site whilst mitigating any potential for the exacerbation of on / off Site flood risk.

4.4.5 The discharge headwall upon the Drainage System Discharge Pipeline outlet to the Southern Stream is to be located upon an Ordinary Watercourse. Consent for its installation (Land Drainage Consent, LDC) should thus be sought from the Lead Local Flood Authority (LLFA) if required (Dorset County Council, DCC).

H.H. & D.E. Drew Limited

Hurn Court Farm Quarry

Hurn, Dorset

Application for Waste Recovery Permit
Site Restoration Using Imported Inert Infill

Hydrogeological Risk Assessment

Version 3
27th May 2020

Appendix 3 Drilling Logs

BCL HYDRO
BCL Consultant Hydrogeologists Limited

Technology Centre, Wolverhampton Science Park, Glashier Drive, Wolverhampton
West Midlands, WV10 9RU. Tel: 01902 824111, Fax: 01902 824112
email: info@bclhydro.co.uk, web: http://www.bclhydro.co.uk
Registered Office: 33, Wolverhampton Road, Cannock, West Midlands, WV11 1AP
Registered in England & Wales. Company Registration Number: 4043373

Borehole Log

Borehole No. **CP01** Sheet 1 of 1

Project Name: Bournemouth	Project No. G145703	Co-ords: -	Hole Type CP
Location: Christchurch, Bournemouth		Level:	Scale 1:50
Client: Wardell Armstrong LLP		Dates: 15/11/2014 - 15/11/2014	Logged By Peter Williams

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.30	D					Dark brown sandy gravelly TOPSOIL. Gravel is fine to medium, sub angular to angular- occasional rootlets
		0.60	D		0.60			Brown gravelly SAND. Gravel is fine, sub rounded to sub angular of flint
		0.60 - 1.10	B					
		1.50 - 2.00	B		1.50			Brown clayey SAND and fine to coarse sub angular flint and quartzite GRAVEL
		1.60	D					
					2.00			Orangish brown slightly clayey SAND and fine to coarse sub angular to angular flint GRAVEL
		2.50	D					
		2.50 - 3.00	B					
		3.50	D		3.50			Yellowish brown sandy fine to medium sub angular to angular flint and quartzite GRAVEL
		3.50 - 4.00	B					
		4.50	D					
		4.50 - 5.00	B					
		5.50	D		5.50			Yellowish brown very sandy fine sub angular to angular flint and quartzite GRAVEL
		5.50 - 6.00	B					
		6.50	D					
		6.50 - 7.00	B					
		7.30	D		7.30			Dark brown soft very sandy slightly gravelly CLAY. Gravel is fine, sub angular of flint.
		7.50	D		7.50			Brown gravelly SAND. Gravel is fine, sub angular to angular flint and quartzite
		7.50 - 8.00	B					
		8.50	D		8.50			Dark brown slightly gravelly SAND. Gravel is fine, sub angular.
		8.50 - 9.00	B					
		9.50	D					*As Above but no gravel, slightly silty.*
		9.50 - 10.00	B					
					10.00			End of borehole at 10.00 m

Remarks

Plain pipe installed from ground level to 5.0m bgl. Slotted pipe installed from 5.0 to 7.0m bgl. Stand up cover installed.

AGS

Borehole Log

Borehole No. **CP02**

Sheet 1 of 1

Project Name: Bournemouth	Project No. G145703	Co-ords: -	Hole Type CP
Location: Christchurch, Bournemouth		Level:	Scale 1:50
Client: Wardell Armstrong LLP		Dates: 15/11/2014 - 15/11/2014	Logged By Peter Williams

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.20	D					Dark brown slightly clayey sandy gravelly TOPSOIL. Gravel is fine, sub angular of flint- occasional rootlets
		0.50	D		0.50			Brown sandy, slightly clayey fine sub rounded to sub angular GRAVEL of flint
		0.50 - 1.00	B					
		1.00	D					
		1.50	D		1.50			Yellowish brown SAND and fine to coarse rounded to sub angular GRAVEL of flint and quartzite
		1.50 - 2.00	B					
		2.50	D					
		2.50 - 3.00	B					
		3.50	D		3.50			Yellowish brown very sandy fine to medium rounded to sub angular GRAVEL of flint and quartzite
		3.50 - 4.00	B					
		4.50	D					
		4.50 - 5.00	B					
		5.50	D					
		5.50 - 6.00	B					
		6.10	D		6.10			Dark brown/black silty slightly gravelly SAND. Gravel is fine, sub angular of flint
		7.50 - 8.00	B					
		8.00	D					
		8.50 - 9.00	B					
		9.00	D					*As Above but grey, no gravel, slightly silty*
		9.50 - 10.00	B					
					10.00			End of borehole at 10.00 m

Remarks

Plain pipe installed from ground level to 5.0m bgl. Slotted pipe installed from 5.0 to 7.0m bgl. Stand up cover installed.

AGS

Borehole Log

Borehole No. **CP03**
Sheet 1 of 1

Project Name: Bournemouth	Project No. G145703	Co-ords: -	Hole Type CP
Location: Christchurch, Bournemouth		Level:	Scale 1:50
Client: Wardell Armstrong LLP		Dates: 16/11/2014 - 16/11/2014	Logged By Peter Williams

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.50	D					Soft brown very sandy slightly gravelly CLAY. Gravel is fine, sub rounded to sub angular of flint
		0.90	D					
		1.00 - 1.50	B					*As Above but gravelly, gravel is fine, sub rounded to sub angular.*
		1.50	D					
		2.00	D		2.00			Light brown slightly clayey sandy fine to coarse sub rounded to sub angular GRAVEL of flint and quartzite
		2.00 - 2.50	B					
		3.00	D					
		3.00 - 3.50	B					
		4.00	D					*As Above but slightly sandy*
		4.00 - 4.50	B					
		5.00	D		5.00			Yellowish brown SAND and fine to medium, sub rounded to sub angular GRAVEL of flint and quartzite
		5.00 - 5.50	B					
		5.60	D		5.60			Orangish brown slightly silty medium to coarse SAND
		5.60 - 6.10	B					
		6.50	D					
		6.50 - 7.00	B					
		7.50	D					*As Above but dark brown.*
		7.50 - 8.00	B					
		8.50	D					
		8.50 - 9.00	B					
		9.50	D					
		9.50 - 10.00	B					
					10.00			End of borehole at 10.00 m

Remarks
Plain pipe installed from ground level to 5.0m bgl. Slotted pipe installed from 5.0 to 7.0m bgl. Stand up cover installed.

Borehole Log

Borehole No. **CP04**

Sheet 1 of 1

Project Name: Bournemouth	Project No. G145703	Co-ords: -	Hole Type CP
Location: Christchurch, Bournemouth		Level:	Scale 1:50
Client: Wardell Armstrong LLP		Dates: 17/11/2014 - 17/11/2014	Logged By Peter Williams

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.35	D					Dark brown sandy slightly clayey fine to medium sub angular gravelly TOPSOIL
		0.70	D		0.70			Dark brown clayey slightly gravelly SAND. Gravel is fine to medium, sub rounded to sub angular of flint
		1.00	D					
		1.00 - 1.50	B					*As Above but orangish brown, gravel is fine to medium, sub rounded to angular.*
		1.50	D		1.50			Orangish brown very sandy fine to coarse sub rounded to angular GRAVEL of flint and quartzite
		2.00 - 2.50	B					
		2.50	D					*As Above but yellowish brown.Gravel is fine to medium, rounded to sub angular.*
		2.50 - 3.00	B					
		3.50	D					
		3.50 - 4.00	B					
		3.80	D		3.80			Soft yellowish brown very sandy CLAY
		4.00 - 4.60	B					
		4.10	D		4.10			Yellowish brown slightly silty SAND
		5.00	D					
		6.00	D					
		6.00 - 6.50	B					
		7.00 - 7.50	B					
		8.00	D					*As above but orangish brown.*
		8.00 - 8.50	B					
		9.00	D					
		9.00 - 9.50	B					
								As Above but light brown.
		10.00	D		10.00			End of borehole at 10.00 m

Remarks

Plain pipe installed from ground level to 5.0m bgl. Slotted pipe installed from 5.0 to 7.0m bgl. Stand up cover installed.

AGS

Borehole Log

Borehole No. **CP05**
Sheet 1 of 1

Project Name: Bournemouth	Project No. G145703	Co-ords: -	Hole Type CP
Location: Christchurch, Bournemouth		Level:	Scale 1:50
Client: Wardell Armstrong LLP		Dates: 19/11/2014 - 19/11/2014	Logged By Peter Williams

Well	Water Strikes	Samples and In Situ Testing Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.35 0.50	D D					Dark brown slightly clayey gravelly SAND. Gravel is fine to medium sub angular to angular. Occasional vegetation
		0.90 0.90 - 1.40	D B		0.90			Dark orangish brown SAND and fine to medium sub rounded to sub angular flint GRAVEL
		1.90 1.90 - 2.40	D B		1.90			Yellowish brown slightly silty fine to medium sub rounded to angular flint and quartzite GRAVEL
		2.90 2.90 - 3.40	D B					
		3.55 3.70 3.70 - 4.10	D D B		3.55			Light grey firm slightly silty gravelly CLAY. Gravel is fine to medium sub angular to angular of flint and quartzite.
		4.70 4.70 - 5.20	D B					
		5.70 5.70 - 6.20	D B		5.70			Light grey clayey slightly gravelly SAND. Gravel is fine, sub angular of flint.
		6.50 6.50 - 7.00	D B					*As above but very clayey*
		7.50 7.50 - 8.00	D B					
		8.50 8.50 - 9.00	D B					*As above but slightly gravelly, flint gravel is fine,sub angular*
		9.50 9.50 - 10.00	D B					*As above but very silty, no gravel*
					10.00			End of borehole at 10.00 m

Remarks
Plain pipe installed from ground level to 5.0m bgl. Slotted pipe installed from 5.0 to 7.0m bgl. Stand up cover installed.

Borehole Log

Borehole No. **CP06**

Sheet 1 of 1

Project Name: Bournemouth	Project No. G145703	Co-ords: -	Hole Type CP
Location: Christchurch, Bournemouth		Level:	Scale 1:50
Client: Wardell Armstrong LLP		Dates: 18/11/2014 - 18/11/2014	Logged By

Well	Water Strikes	Samples and In Situ Testing: Depth (m)	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
		0.35	D					Soft dark brown sandy slightly gravelly CLAY. Gravel is fine, sub rounded to sub angular
		0.50	D					
		0.90	D		0.90			Orangish brown slightly clayey SAND and fine to medium sub angular to angular flint GRAVEL
		1.00 - 1.50	B					
		2.00	D		2.00			Yellowish brown slightly silty sandy fine to medium sub angular to angular flint and quartzite GRAVEL
		2.00 - 2.50	B					
		3.00	D		3.00			Yellowish brown slightly silty SAND and fine to medium sub rounded to angular flint and quartzite GRAVEL
		3.00 - 3.50	B					
		4.10	D		4.10			Firm dark brown silty slightly gravelly CLAY. Gravel is fine to medium sub angular of flint and quartzite
		4.20	D		4.20			Yellowish brown slightly silty gravelly SAND. Gravel is fine, sub angular to angular of flint and quartzite
		4.20 - 4.70	B					
		5.00	D		5.00			Grey silty SAND
		5.00 - 5.50	B					
		5.70	D					
		5.70 - 6.20	B					
		6.70	D					
		6.70 - 7.20	B					
		7.70	D					
		7.70 - 8.30	B					
		8.70	D					
		8.70 - 9.30	B					
		10.00	D		10.00			End of borehole at 10.00 m

Remarks

Plain pipe installed from ground level to 5.0m bgl. Slotted pipe installed from 5.0 to 7.0m bgl. Stand up cover installed.

AGS

Geological strata – 1994 Geological Boreholes, Hurn Court Farm Quarry

Borehole No.	*Overburden Thickness (m)*	*Sand & Gravel Thickness (m)*	*Depth to Base of Sand & Gravel (m)*	*Basal Clay Thickness (m)*	*Proven Thickness of Sand (m)*	*Total Depth of Borehole (m)*	*Struck Water Level @ (m) Below Surface*
18	0.2	3.1	3.3	-	2.7+	6.0	3.1
19	1.4	1.6	3.0	0.3+	2.7	6.0	3.0
20	0.3	5.7	6.0	-	1.5+	7.5	3.2
21	0.4	3.6	4.0	-	2.0+	6.0	3.5
22	1.0	3.5	4.5	-	1.5+	6.0	3.5
23	1.5	2.7	4.2	1.8+	-	6.0	3.8
24	1.4	1.9	3.3	1.5+	1.2	6.0	3.5
25	1.0	3.3	4.3	-	1.7+	6.0	3.5
26	0.2	2.3	2.5	1.0+	2.5	6.0	2.5
27	0.7	2.5	3.2	-	2.8+	6.0	3.0
28	0.4	2.8	3.2	2.0+	0.8	6.0	3.2

Geological Strata – Groundwater Monitoring Boreholes BH1-BH6, Hurn Court Farm Quarry (DPDS, 2000)

	BH 6 Airport		**BH 5 Farm**		**BH 4 Copse**		**BH 1B**		**BH 2B**		**BH 3B**	
Strata	Thick-ness (m)	**Depth (m)**	Thick-ness (m)	**Depth (m)**	Thick-ness (m)	**Depth (m)**	Thick-ness (m)	**Depth (m)**	Thick-ness (m)	**Depth (m)**	Thick-ness (m)	**Depth (m)**
Overburden	0.4	**0.4**	1.0	**1.0**	0.4	**0.4**	0.2	**0.2**	0.3	**0.3**	0.5	**0.5**
Sand and Gravel	3.6	**4.0**	3.3	**4.3**	2.8	**3.2**	2.7	**2.9**	2.7	**3.0**	1.3	**1.8**
Bracklesham Beds*:												
'Basal Sands'	0.4	**4.4**	1.7+	**6.0**	0.8	**4.0**	5.1+	**8.0**	0.9	**3.9**	-	
clay	1.6+	**6.0**	-		2.0+	**6.0**	-		2.6+	**6.5**	5.2+	**7.0**

*Lithological descriptions of the Bracklesham Beds appear to vary over short distances between boreholes, e.g. BH 3B proved 5.2m of clay, whereas adjacent 1990 boreholes proved sand; and at BH 2B sand was proved over clay, whereas in the 1990 borehole clay was proved over sand. From a hydrogeological standpoint, it is safest to regard the Bracklesham Beds as a low permeability aquifer (that is, having a low hydraulic conductivity) with an intergranular flow resulting in low transmissivities (that is, slow movement of groundwater).

Notes:

BH1-BH3 drilled in 1999

BH4 (also referred to as BH28/94), BH5 (also referred to as BH25/94) and BH4 (also referred to as BH21/94) drilled in 1994

Project				BOREHOLE No
Hurn Court				BH7
Job No	Date	Ground Level (m)	Co-Ordinates ()	
DV53171	24-09-07		412030 096819	
Contractor				Sheet
Dorset Drilling Services				1 of 1

SAMPLES & TESTS			STRATA				
Depth	SPT Result	Water	Legend	Depth (Thickness)	DESCRIPTION	Geology	Instrument/ Backfill
				1.00	Dark brown sandy SILT with occasional sub-rounded to sub-angular flint gravel (TOPSOIL).		
2	N=14 (1-5-5-3-2-4)			3.00	Medium dense brown GRAVEL of sub-rounded to sub-angular medium to coarse flint (RIVER TERRACE DEPOSITS). Abundant fine to medium grain sand.		
4	N=26 (5-7-6-7-7-6)			4.50	Dense brown GRAVEL of sub-rounded to sub-angular coarse flint (RIVER TERRACE DEPOSITS). Abundant medium and coarse sand.		
6	N=51 (6-8-8-11-25-)			6.00	Brown fine to medium grain very silty SAND (BRACKLESHAM GROUP).		
8							

GENERAL REMARKS

Borehole completed at 6m.
Borehole Diameter: 150mm.
Installed with 50mm piezometer.

All dimensions in metres Scale 1:50	Client: New Milton Sand and Ballast Company	Method/ Plant Used: Dando 2000 Mk2 Cable Percussion Rig	Logged By: Paul Evans

Project				BOREHOLE No
Hurn Court				BH8
Job No	Date	Ground Level (m)	Co-Ordinates ()	
DV53171	25-09-07		412268 097038	
Contractor				Sheet
Dorset Drilling Services				1 of 1

SAMPLES & TESTS			STRATA				
Depth	SPT Result	Water	Legend	Depth (Thickness)	DESCRIPTION	Geology	Instrument/ Backfill
				1.20	Dark brown sandy SILT, with occasional sub-rounded to sub-angular flint gravel (TOPSOIL)		
2	N=13 (4-3-3-4-3-3)			4.30	Medium dense light brown fine to medium grain SAND, with abundant sub-rounded to sub-angular medium to coarse flint gravel (RIVER TERRACE DEPOSITS).		
4	N=34 (8-8-10,10-7-7)			5.60	Dense brown sub-rounded to sub-angular medium to coarse GRAVEL, with abundant light brown medium and course grain sand (RIVER TERRACE DEPOSITS).		
6				6.00	Light brown fine to medium grain SAND (BRACKLESHAM GROUP).		
8							

GENERAL REMARKS

Borehole completed at 6m.
Borehole Diameter: 150mm
Installed with 50mm piezometer

All dimensions in metres Scale 1:50	Client	New Milton Sand and Ballast Company	Method/ Plant Used	Dando 2000 Mk2 Cable Percussion Rig	Logged By	Paul Evans

Project				BOREHOLE No
Hurn Court				BH9
Job No	Date	Ground Level (m)	Co-Ordinates ()	
DV53171	25-09-07		412246 096368	
Contractor				Sheet
Dorset Drilling Services				1 of 1

SAMPLES & TESTS			STRATA				
Depth	SPT Result	Water	Legend	Depth (Thickness)	DESCRIPTION	Geology	Instrument/ Backfill
				1.00	Dark brown silty SAND, with occasional flint gravel (TOPSOIL).		
2	N=10 (3-2-2-3-3-3)			3.00	Medium dense silty SAND, with abundant sub-rounded to sub-angular medium grain flint gravel (RIVER TERRACE DEPOSITS).		
4	N=50 (3-5-11-17-13-19)			4.40	Dense dark and light brown silty fine to medium SAND (BRACKLESHAM GROUP).		
6							
8							

GENERAL REMARKS

Borehole completed at 4.4m.
Borehole Diameter: 150mm.
Installed with 50mm piezometer.

All dimensions in metres Scale 1:50	Client: New Milton Sand and Ballast Company	Method/ Plant Used: Dando 2000 Mk2 Cable Percussion Rig	Logged By: Paul Evans

Project				BOREHOLE No
Hurn Court				BH10
Job No	Date	Ground Level (m)	Co-Ordinates ()	
DV5317I	26-09-07		411944 096490	
Contractor				Sheet
Dorset Drilling Services				1 of 1

SAMPLES & TESTS			STRATA				
Depth	SPT Result	Water	Legend	Depth (Thickness)	DESCRIPTION	Geology	Instrument/ Backfill
				0.90	Dark brown sandy SILT, with occasional sub-rounded to sub-angular flint gravel (TOPSOIL).		
2	N=17 (3-4-5-4-4)			2.70	Medium dense brown silty medium to coarse grain sub-rounded to sub-angular flint GRAVEL, with abundant medium to coarse brown sand (RIVER TERRACE DEPOSITS).		
4	N=30 (5-10-16-17-27-)			6.30	Dense dark and light brown very silty fine to medium SAND (BRACKLESHAM GROUP).		
6	N=50 (3-9-14-22-37-)			8.00	Dense dark brown fine to coarse SAND (BRACKLESHAM GROUP). Presence of gravel sized fragments of lignite.		
8	N=40 (1-17-40=-)						

GENERAL REMARKS

Borehole completed at 8m.
Borehole Diameter: 150mm.
Installed with 50mm piezometer .

All dimensions in metres Scale 1:50	Client: New Milton Sand and Ballast Company	Method/ Plant Used: Dando 2000 Mk2 Cable Percussion Rig	Logged By: Paul Evans

Project				BOREHOLE No
Hurn Court				**BH11**
Job No: DV53171	Date: 26-09-07	Ground Level (m)	Co-Ordinates (): 411932 096610	
Contractor: Dorset Drilling Services				Sheet: 1 of 1

Depth	SPT Result	Water	Legend	Depth (Thickness)	DESCRIPTION	Geology	Instrument/Backfill
				1.50	Dark brown silty SAND, with occasional flint (TOPSOIL).		
2	N=11 (2-2-3-3-2-3)			2.50	Medium dense brown clayey medium to coarse SAND, with occasional fine to medium gravel (RIVER TERRACE DEPOSITS).		
				3.10	Medium dense light brown CLAY, with abundant brown sand and occasional fine to medium grain sub-rounded to sub-angular gravel (RIVER TERRACE DEPOSITS).		
	N=28 (7-7-8-7-5-8)			3.80	Medium dense brown medium to coarse sub-rounded to sub-angular GRAVEL, with abundant grey clay and brown medium to coarse sand (RIVER TERRACE DEPOSITS).		
4				4.50	Dense brown very silty medium to coarse SAND (BRACKLESHAM GROUP).		
6							
8							

GENERAL REMARKS

Borehole completed at 4.5m.
Borehole Diameter: 150mm.
Installed with 50mm piezometer

All dimensions in metres Scale 1:50	Client: New Milton Sand and Ballast Company	Method/Plant Used: Dando 2000 Mk2 Cable Percussion Rig	Logged By: Paul Evans

Project				BOREHOLE No
Hurn Court				**BH12**
Job No: DV53171	Date: 27-09-07	Ground Level (m):	Co-Ordinates (): 412360 096542	
Contractor: Dorset Drilling Services				Sheet: 1 of 1

SAMPLES & TESTS / STRATA

Depth	SPT Result	Water	Depth (Thickness)	DESCRIPTION
			1.00	Dark brown silty SAND, with occasional sub-rounded to sub-angular flint gravel (TOPSOIL).
	N=15 (2-3-5-3-4-3)		1.70	Medium dense brown silty medium to coarse SAND, with occasional sub-rounded to sub-angular flint gravel and clay particles (RIVER TERRACE DEPOSITS).
2	N=10 (3-3-2-3-3-2)		4.00	Loose to medium dense light brown fine to medium SAND, with abundant sub-rounded to sub-angular medium to coarse flint gravel (RIVER TERRACE DEPOSITS).
4	N=51 (3-3-6-8-13-24)			Medium dense light brown fine to medium SAND, with occasional gravel sized lignite (BRACKLESHAM GROUP).
6	N=>42 (5-7-14-28--)		6.90	
			8.00	Dense dark brown fine to medium SAND, with abundant fine gravel sized lignite fragments (BRACKLESHAM GROUP).
8				

GENERAL REMARKS

Borehole completed at 8m.
Borehole Diameter: 150mm.
Installed with 50mm piezometer.

All dimensions in metres Scale 1:50	Client: New Milton Sand and Ballast Company	Method/Plant Used: Dando 2000 Mk2 Cable Percussion Rig	Logged By: Paul Evans

Hurn Court Farm Quarry Drilling 4-5th February 2019

BH1/19

Drill method:	Hollow stem auger (1.5 m lengths)
0 - 1.5 m	Brown sandy soil
1.5 - 9 m	Sand and gravel
(7.5 m)	Sand and gravel drill cuttings become fully water saturated (water strike?)
9 -10.5 m	Dark blue, soft moist clay
Total drill length (m)	10.5
Final pipe lengths:	8 m slotted + screened 2.2 m plain
Drilling notes:	Initally pipe stuck 1.5 m out of ground, silt entered through seams. Remedied by pouring water down hole to balance pressures. Sands collapsed in onto pipe up to ~3 mbgl. Filled with ~2m of gravel, then 1 m bentonite and casing cemented.
Dip (m) (12:34, 5/02/19)	3.55
Plummed depth (m)	10.26

BH2/19

Drill method:	Hollow stem auger (1.5 m lengths)
0 - 1.5 m	Brown sandy soil
1.5 - 8 m	Sand and gravel, claggy
(8 m)	Sand and gravel drill cuttings become fully water saturated (water strike?)
8 - 8.5 m	Dark blue v.soft clay
8.5 - 9 m	Sand and silt
9 - 10.5 m	Dark blue clay
Total drill length (m)	10.5
Final pipe lengths	8 m slotted + screened 2.3 m plain
Drilling notes	Driller felt first clay band was not very thick (~40cm) before entering S&G

	Borehole backfilled with 16 bags of 10 mm gravel. 1m of bentonite (3/4 of a bag). 1 bag of postcrete to cement casing
Dip (m) (12:42, 5/02/19)	3.34
Plummed depth (m)	10.24

BH3/19	
Drill method:	Hollow stem auger (1.5 m lengths)
0 - 9.5 m	Sand and gravel
9.5 - 10.5 m	Dark blue clay
Total drill length (m)	10.5
Final pipe lengths	8 m slotted + screened 1.5 m plain
Drilling notes	First attempt sand & gravel entered through end cap Second attempt successful however some ~1m pipe pulled out as rig lifted with subsequent s&g collapse beneath pipe. Hole collapsed to 1.2 mbgl therefore no gravel used. 1.2m bentonite (1.25 bag of bentonite). 1 bag postcrete to cement casing. No noticeable water strike recorded as all drill cuttings saturated.
Dip (16:45, 5/02/19)	Not recorded as water not settled in piezometer
Plummed depth (m)	9.2

H.H. & D.E. Drew Limited

Hurn Court Farm Quarry

Hurn, Dorset

Application for Waste Recovery Permit
Site Restoration Using Imported Inert Infill

Hydrogeological Risk Assessment

Version 3
27th May 2020

Appendix 4 Water Quality Data

BCL HYDRO
BCL Consultant Hydrogeologists Limited

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West Midlands, WV10 9RU. Tel: 01902 824111, Fax: 01902 824112
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Registered in England & Wales. Company Registration Number: 4043373

Date	Determina Location	Temperature °C	pH pH units	Electrical Conductivity µs.cm-1	Dissolved Oxygen %	Eh Redox mV	Ammoniacal Nitrogen mg/l	Arsenic mg/l	Barium mg/l	Cadmium mg/l	Chloride mg/l	Chromium mg/l	Copper mg/l	Dissolved Organic Carbon mg/l
18/12/2017	CP01	10.5	7.8	145	12.3	-31.5	<0.02	0.039	0.464	0.0094	10.8	0.057	0.093	0.77
15/12/2017	CP01	9.2	7.36	154.9	9.2	-45.8	<0.02	<0.003	0.506	<0.0003	13.7	0.036	0.066	0.95
22/12/2017	CP01	12.8	7.63	13.2	74.4	-0.1	0.21	<0.003	0.0296	<0.0003	10	0.006	0.015	0.64
29/12/2017	CP01	7.8	7.11	131.6	42.5	5.2	0.09	<0.003	0.133	0.0026	12.2	0.02	0.034	4.2
05/01/2018	CP01	11.1	6.43	124.1	29.2	-7.8	<0.02	0.025	0.226	<0.0003	10.3	0.024	0.057	4.55
12/01/2018	CP01	6.4	7.65	124.1	51.3	-15.6	<0.02	<0.003	0.0943	<0.0003	12.2	0.01	0.025	1.05
19/01/2018	CP01	10.5	7.55	155.8	14.3	-15.2	<0.02	0.041	0.221	<0.0003	11.6	0.029	0.052	0.62
26/01/2018	CP01	9.9	6.52	160.7	32.9	13.6	<0.02	<0.003	0.449	0.001	15.1	0.09	0.117	1.22
02/02/2018	CP01	11	6.54	173.2	40.8	7.7	<0.02	0.281	0.0319	<0.0003	12.2	0.005	0.007	1.16
09/02/2018	CP01	10.1	7.17	162.3	46.6	0.1	<0.02	0.008	0.0656	<0.0005	12.6	0.009	0.017	3.14
16/02/2018	CP01	1.3	7.62	174	48.3	10.1	<0.02	0.012	0.0303	<0.0008	12.4	0.002	0.121	1.85
23/02/2018	CP01	7.4	7.67	153.8	54.2	16.1	<0.02	<0.003	0.5	<0.0008	12.2	0.115	0.11	1.76
05/03/2018	CP01	9.7	7.68	166.5	59.5	-2.2	0.28	<0.003	0.129	<0.0003	13.1	0.014	0.031	<2
09/03/2018	CP01	10.2	7.33	129	55.4	17.4	0.29	0.01	0.09	<0.0003	13.60	0.015	0.02	4.14
16/03/2018	CP01	11.60	7.48	183.90	62.20	4.60	< 0.02	< 0.003	0.0603	< 0.0003	14.1	0.008	0.014	4.06
23/03/2018	CP01	10.00	7.20	167.70	62.50	12.90	< 0.02	< 0.003	0.0432	< 0.0003	15.7	0.007	0.01	2.55
30/03/2018	CP01	7.20	6.28	170.10	67.60	30.00	< 0.02	< 0.003	0.0269	< 0.0003	13.9	0.002	< 0.001	< 2.00
06/04/2018	CP01	9.20	7.10	148.00	62.50	21.90	< 0.02	< 0.003	0.0494	< 0.0003	15.3	0.004	0.003	< 2.00
23/01/2019	CP01	6.70	8.74	164.90	79.30	6.20	0.04	<0.007	0.01	<0.0008	17.80	<0.001	<0.008	3.80
14/02/2019	CP01	11.60	7.65	137.60	61.90	27.00	0.03	<0.007	0.01	<0.0008	11.60	<0.001	<0.008	30.70
27/02/2019	CP01	12.80	8.01	182.50	39.40	15.40	<0.02	<0.007	0.01	<0.0008	19.10	<0.001	<0.008	2.51
11/04/2019	CP01	11.10	7.33	157.70	77.30	73.80	<0.02	<0.007	0.0135	<0.0008	17.50	<0.001	<0.008	<2
01/07/2019	CP01	19.90	6.46	173.50	50.40	-7.50	0.12	<0.007	0.018	<0.0008	11.60	<0.001	<0.008	<2
18/12/2017	CP05	10.4	7.44	333.5	48.9	13.1	<0.02	0.03	0.0501	0.0004	70.2	0.018	0.025	1.66
15/12/2017	CP05	9.3	6.84	325.4	38.9	0.2	<0.02	<0.003	0.0732	<0.0003	70.8	0.012	0.022	0.75
22/12/2017	CP05	12.7	6.71	354.9	53.9	2.5	0.03	0.02	0.0295	<0.0003	38.4	0.016	0.037	0.01
29/12/2017	CP05	10.3	6.23	337.1	16.2	10.6	0.11	<0.003	0.0202	<0.0003	58.6	0.002	0.001	0.98
05/01/2018	CP05	8.6	6.23	324.8	43.7	1.6	<0.02	0.008	0.0245	<0.0003	57.8	0.003	0.003	1.59
12/01/2018	CP05	10.5	6.96	342.6	24.1	-16.2	<0.02	<0.003	0.0285	<0.0003	55.4	0.01	0.01	2.11
19/01/2018	CP05	10	6.58	339.7	24.8	7.1	<0.02	0.035	0.0372	<0.0003	57.5	0.003	0.014	1.44
26/01/2018	CP05	9.5	6.31	339.1	32.1	15.4	<0.02	<0.003	0.0215	<0.0003	62.4	<0.001	0.01	1.5
02/02/2018	CP05	11.8	6.33	365.6	27.4	14.3	<0.02	0.45	0.0199	<0.0003	52	0.002	0.003	1.45
09/02/2018	CP05	8.6	6.52	335.5	29	-5.6	<0.02	<0.003	0.0223	<0.0005	61.3	0.002	0.003	1.75
16/02/2018	CP05	9.9	7.62	326.4	31.1	9.2	<0.02	0.016	0.0287	<0.0008	55.8	0.004	0.008	1.8
23/02/2018	CP05	9.2	7	337.2	48.6	22.4	1.2	<0.003	0.0568	<0.0008	49.9	0.011	0.047	2.27
05/03/2018	CP05	10.1	6.62	355.4	51.3	5	<0.02	<0.003	0.074	<0.0003	55.4	0.007	0.042	<2
09/03/2018	CP05	9.1	6.73	339.8	41.7	19.1	0.16	<0.003	0.0384	<0.0003	50.8	0.002	0.003	2.81
16/03/2018	CP05	10.8	6.91	354.3	43.6	20.9	<0.02	<0.003	0.0401	<0.0003	55.8	0.007	0.021	12
23/03/2018	CP05	10.03	6.82	351.9	39.6	7.3	<0.02	<0.003	0.04	<0.0003	52.9	0.009	0.025	5.6
30/03/2018	CP05	7	6.17	323.9	51.4	24.8	<0.02	<0.003	0.0301	<0.0003	53.8	0.05	<0.001	<2
06/04/2018	CP05	9.6	6.71	351.6	41.9	14.8	<0.02	<0.003	0.0288	<0.0003	58.8	0.003	<0.001	3.63
23/01/2019	CP05	8.3	8.68	354.1	63.3	13.7	<0.02	<0.007	0.017	<0.0008	83.1	<0.001	<0.008	2.3
14/02/2019	CP05	11.4	7.13	472.6	86.6	15.6	<0.02	<0.007	0.07	<0.0008	67.5	<0.001	<0.008	7.58
27/02/2019	CP05	12.8	7.29	381.3	37.4	19.8	<0.02	<0.007	0.093	<0.0008	24.90	<0.001	<0.008	2.68
11/04/2019	CP05	10.9	7.09	348.6	79.8	60.9	<0.02	<0.007	0.0161	<0.0008	81.1	<0.001	<0.008	<2
01/07/2019	CP05	17.5	5.83	381.2	38.3	6	0.02	<0.007	0.0203	<0.0008	89.4	<0.001	<0.008	<2
18/12/2017	CP06	9.2	7.48	174.1	60.5	24.1	<0.02	0.041	0.055	0.0042	14.1	0.02	0.033	1.11
15/12/2017	CP06	10	7.9	197.5	42.5	8.1	<0.02	<0.003	0.0678	<0.0003	14	0.01	0.019	0.47
22/12/2017	CP06	11.1	6.5	100.6	56.2	12.2	<0.02	0.012	0.0404	<0.0003	13.2	0.008	0.018	0.47
29/12/2017	CP06	10.2	5.78	167.3	8.4	6.1	0.16	<0.003	0.0454	0.0017	13.1	0.016	0.021	0.37
05/01/2018	CP06	10.5	5.84	168.1	12.9	-7	0.1	<0.003	0.0167	<0.0003	14.1	0.003	0.004	1.01
12/01/2018	CP06	8.9	6.5	182.9	31.4	3.6	<0.02	<0.003	0.0232	<0.0003	14.2	0.009	0.012	0.47
19/01/2018	CP06	9.8	6.01	164.6	14.9	16	<0.02	0.055	0.0411	<0.0003	13.2	0.011	0.021	0.74
26/01/2018	CP06	10.3	5.91	166.8	32.4	27.3	<0.02	<0.003	0.0249	<0.0003	18.9	0.007	0.012	4.6
02/02/2018	CP06	10.9	5.72	164.9	15.8	29	<0.02	0.291	0.0171	<0.0003	13.3	0.001	0.004	0.62
09/02/2018	CP06	5	5.99	148.6	48.5	25.5	<0.02	<0.003	0.0223	<0.0005	13.5	0.005	0.008	0.59
16/02/2018	CP06	9.3	6.35	164.7	34.3	40.6	<0.02	0.014	0.0152	<0.0008	13.9	0.002	<0.001	0.62
23/02/2018	CP06	6.3	6.02	148.2	33.9	42.3	<0.02	<0.003	0.0535	<0.0008	14	0.013	0.041	0.73
05/03/2018	CP06	9.6	6.3	165.4	67.7	16.3	<0.02	<0.003	0.0687	<0.0003	17.4	0.008	0.017	<2
09/03/2018	CP06	7.5	6.42	157.7	51.7	49.4	0.18	<0.003	0.0706	<0.0003	14.9	0.01	0.029	<2
16/03/2018	CP06	10.8	6.3	174.5	35.8	48.4	<0.02	<0.003	0.0344	<0.0003	16.6	0.004	0.004	3.29
23/03/2018	CP06	10	6.31	165.5	27.5	32.7	<0.02	0.008	0.217	<0.0003	13.8	0.009	0.012	4.55
30/03/2018	CP06	8.9	5.8	160.7	27.7	23.2	<0..02	<0.003	0.0323	<0.0003	13.3	0.005	<0.001	<2
06/04/2018	CP06	9.7	6.4	166.9	31.1	34.4	<0.02	<0.003	0.0147	<0.0003	15.9	0.001	<0.001	<2
23/01/2019	CP06	8.4	8.43	169.7	101.2	15.6	0.17	<0.007	0.009	<0.0008	18.3	<0.001	<0.008	2.2
14/02/2019	CP06	11.1	6.99	294.2	62.8	28.6	0.03	<0.007	0.02	<0.0008	31.1	<0.001	<0.008	5.91
27/02/2019	CP06	12.3	7.01	313.6	52.5	24.8	0.06	<0.007	0.0219	<0.0008	38.4	<0.001	<0.008	2.49
11/04/2019	CP06	11.7	7.07	162.8	75.6	90.4	0.05	<0.007	0.01	<0.0008	18.9	<0.001	<0.008	<2
01/07/2019	CP06	19.3	6.76	39.5	11.3	8.1	0.42	<0.007	0.02	<0.0008	20.7	<0.001	<0.008	7.2
11/04/2019	BH1/19	11.5	7.17	136.7	42.6	82.2	0.02	<0.007	0.0096	<0.0008	16.9	<0.001	<0.008	<2

	Determina	Temperature	pH	Electrical Conductivity	Dissolved Oxygen	Eh Redox	Ammoniacal Nitrogen	Arsenic	Barium	Cadmium	Chloride	Chromium	Copper	Dissolved Organic Carbon
Date	Location	°C	pH units	µs.cm-1	%	mV	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
01/07/2019	BH1/19	17	5.74	127.6	40.9	23.3	0.02	<0.007	0.0125	<0.0008	20.1	<0.001	<0.008	<2
11/04/2019	BH2/19	11.1	6.71	284.9	86.4	95.5	<0.02	<0.007	0.0867	<0.0008	25.6	<0.001	<0.008	3.13
01/07/2019	BH2/19	15.3	5.93	280.1	29.3	16.2	0.04	<0.007	0.0734	<0.0008	30.5	<0.001	<0.008	<2
11/04/2019	BH3/19	10.6	6.63	243.1	71.6	80.6	<0.02	<0.007	0.0179	<0.0008	37.4	<0.001	<0.008	<2
01/07/2019	BH3/19	15.5	6.04	232.9	53.3	5.9	<0.02	<0.007	0.02	<0.0008	27.6	<0.001	<0.008	<2

Date	Determina Location	Fluoride mg/l	Mercury mg/l	Molybdenum mg/l	Total PAHs mg/l	Total Phenols mg/l	Sulphate mg/l	Total Dissolved Solids mg/l	TOC (Total Organic Carbon) mg/l	Total TPH mg/l	Antimony mg/l	BOD mg/l	Boron mg/l	Calcium mg/l
18/12/2017	CP01	0.37	<0.0001	<0.0004	<0.20	<0.01	10.9	95	14.5	<25.0				
15/12/2017	CP01	<0.01	<0.0001	<0.001	<0.20	<0.01	11.4	50	14.1	<25.0				
22/12/2017	CP01	<0.01	0.0001	<0.0004	<0.20	<0.01	10.1	50	<2.00	<25.0				
29/12/2017	CP01	<0.01	0.0001	<0.0004	<0.20	<0.01	10.5	115	8.53	<25.0	<0.003	<4.00	0.215	28.1
05/01/2018	CP01	<0.01	<0.0001	<0.0004	<0.20	<0.01	9.94	280	12.1	<25.0				
12/01/2018	CP01	<0.01	<0.0001	<0.0004	<0.20	<0.01	11.3	50	7.33	<25.0				
19/01/2018	CP01	<0.01	<0.0001	<0.0004	<0.20	<0.01	9.52	115	8.72	<25.0				
26/01/2018	CP01	0.07	<0.0001	<0.0004	<0.20	<0.01	11.6	10	13.3	<25.0	0.03	<4.00	<0.200	64.3
02/02/2018	CP01	0.07	<0.0001	<0.0004	<0.20	<0.01	9.15	80	3.93	74.6				
09/02/2018	CP01	0.06	<0.0001	<0.0004	<0.20	<0.01	8.76	80	6.97	<25.0				
16/02/2018	CP01	0.03	0.0006	<0.0004	<0.20	<0.01	9.98	90	18.4	<25.0				
23/02/2018	CP01	<0.01	<0.0001	<0.0004	<0.2	<0.01	<3	190	5.4	<25	<0.003	<4	<0.2	66.2
05/03/2018	CP01	0.09	<0.0001	<0.0004	<0.2	<0.01	9.65	75	3.06	<25				
09/03/2018	CP01	0.02	<0.0001	<0.0004	<0.2	<0.01	14.30	95	8.66	41.5				
16/03/2018	CP01	0.05	< 0.0001	0.0726	< 0.20	< 0.01	9.5	135	10.9	< 25.0				
23/03/2018	CP01	0.1	< 0.0001	< 0.0004	< 0.20	< 0.01	10.2	85	7.11	30	< 0.003	< 4.00	< 0.200	26.6
30/03/2018	CP01	0.08	< 0.0001	< 0.0004	< 0.20	< 0.01	8.92	140	5.88	< 25.0				
06/04/2018	CP01	0.05	< 0.0001	< 0.0004	< 0.20	< 0.01	9.92	105	2.88	< 25.0				
23/01/2019	CP01	0.02	<0.0001	<0.001	<0.2	<0.01	11.3	140	4.10	<25	<0.003	5.38	<0.2	23.1
14/02/2019	CP01	0.05	<0.0001	<0.001	<0.2	<0.01	17.80	125	4.30	<25	<0.003			
27/02/2019	CP01	0.02	<0.0001	<0.001	<0.2	<0.01	25.80	100	13.30	<25	<0.003			
11/04/2019	CP01	0.08	<0.0001	<0.001	0.21	<0.01	14.6	60	2.19	<25	<0.003	<4	<0.2	19.7
01/07/2019	CP01	0.10	<0.0001	<0.001	<0.2	<0.01	19.10	105	6.77	<25	<0.003	<4	<0.2	18.4
18/12/2017	CP05	0.35	<0.0001	<0.0004	1.26	<0.01	58.3	285	8.71	<25.0				
15/12/2017	CP05	<0.01	0.0001	<0.001	<0.20	<0.01	59.5	295	7.85	<25.0				
22/12/2017	CP05	<0.01	0.0003	<0.0004	<0.20	<0.01	36.1	225	<2.00	<25.0				
29/12/2017	CP05	<0.01	<0.0001	<0.0004	<0.20	<0.01	58	350	8.16	<25.0	<0.003	<4.00	<0.200	54.2
05/01/2018	CP05	<0.01	<0.0001	<0.0004	<0.20	<0.01	57.3	280	5.35	<25.0				
12/01/2018	CP05	<0.01	<0.0001	<0.0004	<0.20	<0.01	58.2	240	5.72	47				
19/01/2018	CP05	<0.01	<0.0001	<0.0004	<0.20	<0.01	57.3	295	6.02	<25.0				
26/01/2018	CP05	0.06	<0.0001	<0.0004	<0.20	<0.01	70.6	260	5.69	<25.0	0.012	<4.00	<0.200	64.2
02/02/2018	CP05	0.06	<0.0001	<0.0004	<0.20	<0.01	56.6	310	3.07	43.2				
09/02/2018	CP05	0.05	<0.0001	<0.0004	<0.20	<0.01	69.9	305	4.53	50.5				
16/02/2018	CP05	0.05	0.0017	<0.0004	<0.20	<0.01	61.3	250	6.92	<25.0				
23/02/2018	CP05	0.03	<0.0001	<0.0004	<0.2	<0.01	59.2	285	4.7	<25	<0.003	<4	<0.2	70.6
05/03/2018	CP05	0.06	<0.0001	<0.0004	<2	<0.01	61.2	240	2.16	<25				
09/03/2018	CP05	0.09	<0.0001	<0.0004	<0.2	<0.01	74	280	2.3	<25				
16/03/2018	CP05	0.05	<0.0001	0.118	<0.2	<0.01	64.8	345	14.7	<25.0				
23/03/2018	CP05	0.09	<0.0001	<0.0004	<0.2	<0.01	65.3	370	13.5	29	<0.003	<4	<0.2	72.1
30/03/2018	CP05	0.05	<0.0001	<0.0004	<0.2	<0.01	64.1	330	12.8	25.5				
06/04/2018	CP05	0.04	<0.0001	<0.0004	<0.2	<0.01	61.4	340	4.69	<25				
23/01/2019	CP05	0.01	<0.0001	<0.001	<0.2	<0.01	62.6	415	3.1	<25	<0.003	4.65	<0.2	65.4
14/02/2019	CP05	0.09	<0.0001	<0.001	<0.2	<0.01	30.5	385	13.5	<25	<0.003			
27/02/2019	CP05	0.04	<0.0001	<0.001	<0.2	<0.01	32.5	265	2.64	<25	<0.003			
11/04/2019	CP05	0.03	<0.0001	<0.001	<0.2	<0.01	74.5	345	3.21	<25	<0.003	13	<0.2	57.6
01/07/2019	CP05	0.04	<0.0001	<0.001	<0.2	<0.01	59.1	390	<2	<25	<0.003	<4	<0.2	58
18/12/2017	CP06	0.33	<0.0001	0.0098	<0.20	<0.01	38.1	115	5.53	<25.0				
15/12/2017	CP06	<0.01	<0.0001	<0.001	<0.20	<0.01	39.2	120	4.5	<25.0				
22/12/2017	CP06	<0.01	<0.0001	<0.0004	<0.20	<0.01	38.8	160	<2.00	<25.0				
29/12/2017	CP06	<0.01	<0.0001	<0.0004	<0.20	<0.01	37.8	170	9.07	<25.0	<0.003	<4.00	<0.200	30.6
05/01/2018	CP06	<0.01	<0.0001	<0.0004	<0.20	<0.01	36.9	160	7.6	<25.0				
12/01/2018	CP06	<0.01	<0.0001	0.0011	<0.20	<0.01	42.8	45	4.17	<25.0				
19/01/2018	CP06	<0.01	<0.0001	<0.0004	<0.20	<0.01	39.8	95	5.08	<25.0				
26/01/2018	CP06	0.03	<0.0001	<0.0004	<0.20	<0.01	49.6	70	4.03	<25.0	0.014	<4.00	<0.200	20.9
02/02/2018	CP06	0.04	<0.0001	<0.0004	<0.20	<0.01	37.5	80	3.23	26				
09/02/2018	CP06	0.03	<0.0001	<0.0004	<0.20	<0.01	38.1	125	3.37	51				
16/02/2018	CP06	0.06	0.0007	<0.0004	<0.20	<0.01	40	180	17.1	<25.0				
23/02/2018	CP06	0.06	<0.0001	<0.0004	<0.2	<0.01	36.1	190	5.29	<25	<0.003	<4	<0.2	34.7
05/03/2018	CP06	0.04	<0.0001	<0.0004	<0.2	<0.01	41.8	135	5.88	<25				
09/03/2018	CP06	0.03	<0.0001	<0.0004	<0.2	<0.01	61.3	95	8.99	<25				
16/03/2018	CP06	0.03	<0.0001	0.0749	<0.2	<0.01	36.4	130	7.68	<25				
23/03/2018	CP06	<0.01	<0.0001	<0.0004	<0.2	<0.01	39.7	145	5.35	34.5	<0.003	<4	<0.2	26.4
30/03/2018	CP06	0.02	<0.0001	<0.0004	<2	<0.01	39.2	145	13.7	<25				
06/04/2018	CP06	0.03	<0.0001	<0.0004	<2	<0.01	37.1	120	<2	<25				
23/01/2019	CP06	<0.01	<0.0001	<0.001	<0.2	<0.01	39.6	155	3.2	26	<0.003	5.75	<0.200	25.9
14/02/2019	CP06	0.02	<0.0001	<0.001	<0.2	<0.01	18.5	205	12.6	<25	<0.003			
27/02/2019	CP06	0.03	<0.0001	<0.001	<0.2	<0.01	23.2	260	6.19	<25	<0.003			
11/04/2019	CP06	0.04	<0.0001	<0.001	<0.2	<0.01	52.4	85	3.15	<25	<0.003	<4	<0.2	21.9
01/07/2019	CP06	0.05	<0.0001	<0.001	<0.2	<0.01	34.2	175	33.8	<25	<0.003	85.5	<0.2	25.3
11/04/2019	BH1/19	0.05	<0.0001	<0.001	<0.2	<0.01	28.2	45	2.2	<25	<0.003	4.02	<0.2	15.9

	Determina	Fluoride	Mercury	Molybdenum	Total PAHs	Total Phenols	Sulphate	Total Dissolved Solids	TOC (Total Organic Carbon)	Total TPH	Antimony	BOD	Boron	Calcium
Date	Location	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
01/07/2019	BH1/19	0.05	<0.0008	<0.001	<0.2	<0.01	21.2	115	33.6	<25	<0.003	<4	<0.2	16.6
11/04/2019	BH2/19	0.06	<0.0001	<0.001	<0.2	<0.01	43.9	305	3.3	<25	<0.003	<4	<0.2	116
01/07/2019	BH2/19	0.07	<0.0001	<0.001	<0.2	<0.01	51.6	220	4.8	<26	<0.003	<4	<0.2	51
11/04/2019	BH3/19	0.1	<0.0001	<0.001	<0.2	<0.01	19.8	190	5.27	<25	<0.003	<4	<0.2	43.8
01/07/2019	BH3/19	0.08	<0.0001	<0.001	<0.2	<0.01	16.7	170	30.6	<25	<0.003	<4	<0.2	34.3

Date	Determina Location	COD mg/l	Magnesium mg/l	Manganese mg/l	Nickel mg/l	PCBs mg/l	Phosphate mg/l	Selenium mg/l	Sodium mg/l	Total Oxidised Nitrogen mg/l	Suspended Solids mg/l	Zinc mg/l	Lead mg/l
18/12/2017	CP01												
15/12/2017	CP01												
22/12/2017	CP01												
29/12/2017	CP01	<1.50	2.22	0.979	0.0454	<1.00	<0.02	<0.006	11.8	1.04	3600	0.21	
05/01/2018	CP01												
12/01/2018	CP01												
19/01/2018	CP01												
26/01/2018	CP01	<1.50	4.55	3.47	0.149	<1.00	<0.02	0.063	9.4	1.68	2800	1.01	
02/02/2018	CP01												
09/02/2018	CP01												
16/02/2018	CP01												
23/02/2018	CP01	<1.5	4.82	4.25	0.174	<1	1.28	<0.006	9.86	1.61	2200	1.2	
05/03/2018	CP01												
09/03/2018	CP01												
16/03/2018	CP01												
23/03/2018	CP01	8.9	2	0.113	0.0104	< 1.00	3.8	0.021	11.2	2.18	1500	0.045	
30/03/2018	CP01												
06/04/2018	CP01												
23/01/2019	CP01	17	1.69	0.055	0.003	<1	<0.02	<0.006	13.9	1.47	970	<0.002	
14/02/2019	CP01				0.0048			<0.006				<0.002	<0.004
27/02/2019	CP01				0.0079			<0.006				0.003	<0.004
11/04/2019	CP01	6.1	1.42	0.19	0.004	<1	<0.02	<0.006	10.1	1.44	4300	<0.002	
01/07/2019	CP01	5	1.44	0.19	0.008	<1	0.02	<0.006	10.5	1.01	3200	<0.002	
18/12/2017	CP05												
15/12/2017	CP05												
22/12/2017	CP05												
29/12/2017	CP05	<1.50	3.94	<0.040	0.0086	<1.00	<0.02	<0.006	26.1	1.58	720	0.052	
05/01/2018	CP05												
12/01/2018	CP05												
19/01/2018	CP05												
26/01/2018	CP05	<1.50	3.86	<0.040	0.0171	<1.00	<0.02	0.075	30.7	3.43	1400	0.111	
02/02/2018	CP05												
09/02/2018	CP05												
16/02/2018	CP05												
23/02/2018	CP05	<1.5	4.19	0.05	0.0473	<1	0.35	<0.006	25	2.5	3900	0.47	
05/03/2018	CP05												
09/03/2018	CP05												
16/03/2018	CP05												
23/03/2018	CP05	51	4.26	<0.04	0.0482	<1	<0.02	<0.006	30.4	5.38	1800	0.246	
30/03/2018	CP05												
06/04/2018	CP05												
23/01/2019	CP05	21	4.15	<0.04	0.003	<1	<0.02	<0.006	30.2	2.71	660	0.003	
14/02/2019	CP05				0			<0.006				0.01	<0.004
27/02/2019	CP05				0.00037			<0.006				0.007	<0.004
11/04/2019	CP05	<1.5	3.47	0.011	0.0047	<1	<0.02	<0.006	30	3.16	850	0.007	
01/07/2019	CP05	32.6	4.02	0.012	0.0038	<1	<0.02	<0.006	28	1.97	2800	0.024	
18/12/2017	CP06												
15/12/2017	CP06												
22/12/2017	CP06												
29/12/2017	CP06	<1.50	4.22	0.052	0.0564	<1.00	<0.02	<0.006	9.41	0.548	2200	0.246	
05/01/2018	CP06												
12/01/2018	CP06												
19/01/2018	CP06												
26/01/2018	CP06	<1.50	4.01	<0.040	0.0319	<1.00	0.37	0.038	8.75	0.681	100	0.129	
02/02/2018	CP06												
09/02/2018	CP06												
16/02/2018	CP06												
23/02/2018	CP06	<1.5	4.82	0.051	0.0738	<1	0.34	<0.006	10.5	1.07	3500	0.301	
05/03/2018	CP06												
09/03/2018	CP06												
16/03/2018	CP06												
23/03/2018	CP06	21	4.01	<0.04	0.0332	<1	<0.02	0.0014	9.33	1.34	1400	0.088	
30/03/2018	CP06												
06/04/2018	CP06												
23/01/2019	CP06	15	3.69	<0.04	0.013	<1	<0.02	<0.006	10.5	0.397	150	0.023	
14/02/2019	CP06				0.01			<0.006				0.01	<0.004
27/02/2019	CP06				0.0107			<0.006				0.004	<0.004
11/04/2019	CP06	2.2	3.21	0.017	0.013	<1	<0.02	<0.006	8.86	0.304	390	0.01	
01/07/2019	CP06	26.2	3.43	0.146	0.009	<1	0.04	<0.006	11.4	0.15	11000	<0.002	
11/04/2019	BH1/19	<1.5	1.26	0.79	0.0062	<1	<0.02	<0.006	9.16	0.33	7500	<0.002	

Determina		COD	Magnesium	Manganese	Nickel	PCBs	Phosphate	Selenium	Sodium	Total Oxidised Nitrogen	Suspended Solids	Zinc	Lead
Date	Location	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
01/07/2019	BH1/19	2	1.32	0.43	0.0061	<1	0.14	<0.006	8.38	0.35	10000	<0.002	
11/04/2019	BH2/19	7.4	3.36	0.058	0.0034	<1	0.1	<0.006	11.3	6.54	110	<0.002	
01/07/2019	BH2/19	7.4	5.16	0.143	0.0018	<2	0.1	<0.006	10.6	0.66	490	<0.002	
11/04/2019	BH3/19	7.4	2.46	0.044	0.0047	<1	0.49	<0.006	17.5	3.75	19000	<0.002	
01/07/2019	BH3/19	7.6	2.43	0.017	0.115	<1	0.93	<0.006	16.3	1.81	12000	<0.002	

Determinan		Temperature	pH	Electrical Conductivity	Dissolved Oxygen	Eh Redox	Ammoniacal Nitrogen	Arsenic	Barium	Cadmium	Chloride	Chromium	Copper	Dissolved Organic Carbon
Date	Location	°C	pH units	µs.cm-1	%	mV	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
18/12/2017	SWS1	8.9	7.03	139.1	60.3	-1.4	0.16	0.016	0.0281	<0.0003	22.1	0.002	0.004	5.46
15/12/2017	SWS1	6.8	6.88	197.3	61.4	-12.1	<0.02	<0.003	0.0265	<0.0003	21.4	<0.001	<0.001	13.9
22/12/2017	SWS1	11.2	6.45	234.4	71.6	1	<0.02	<0.003	0.0142	<0.0003	18.7	0.002	<0.001	4.95
29/12/2017	SWS1	5.7	6.08	188.4	41.6	13.2	<0.02	<0.003	0.0286	<0.0003	24.4	<0.001	<0.001	13.4
05/01/2018	SWS1	7.5	6.49	205.5	28.8	-12.2	0.17	<0.003	0.0236	<0.0003	23.3	<0.001	<0.001	12.9
12/01/2018	SWS1	5.4	6.81	5.7	71.7	-4.8	<0.02	<0.003	0.0245	<0.0003	23	0.002	0.001	6.53
19/01/2018	SWS1	5.3	6.34	202.1	42.6	10.7	<0.02	<0.003	0.0247	<0.0003	21.1	0.001	<0.001	8
26/01/2018	SWS1	10.3	5.91	166.8	32.4	27.3	<0.02	<0.003	0.0214	<0.0003	27.2	<0.001	0.001	13
02/02/2018	SWS1	4.2	6.31	211.2	17.9	19.1	<0.02	0.373	0.0208	<0.0003	21.7	0.001	0.002	6.76
09/02/2018	SWS1	3.6	6.46	191	62.2	4.8	<0.02	<0.003	0.0216	<0.0005	21.3	0.002	<0.001	4.71
16/02/2018	SWS1	5.5	6.55	186.7	34.6	13.3	<0.02	0.008	0.0202	<0.0008	21.8	<0.001	<0.001	10.3
23/02/2018	SWS1	4.7	6.45	204.2	47.2	24.6	<0.02	<0.003	0.0273	<0.0008	22.2	0.001	0.001	8.84
05/03/2018	SWS1	6.5	6.55	210.1	51.3	0.7	0.02	<0.003	0.0235	<0.0003	22.3	0.001	<0.001	7.47
09/03/2018	SWS1	6.5	6.49	195.5	53.9	14.8	<0.02	<0.003	0.0244	<0.0003	25.6	<0.001	<0.001	8.9
16/03/2018	SWS1	10.1	6.76	204.5	47.3	19.5	<0.02	<0.003	0.0258	<0.0003	24.6	0.001	<0.001	10.8
23/03/2018	SWS1	8	6.8	212.5	59.2	2.6	<0.02	<0.003	0.0258	<0.0003	20.1	0.001	<0.001	24.1
30/03/2018	SWS1	7.2	6.37	169.8	61.7	26.9	<0.02	<0.003	0.021	<0.0003	15.7	0.001	<0.001	14.7
06/04/2018	SWS1	8.7	6.64	206.1	48	20.3	<0.02	<0.03	0.215	<0.0003	18.9	0.001	<0.001	16.3
18/12/2017	SWS2	8.5	7.15	215.7	49.4	-2.5	0.07	0.014	0.128	0.0014	23.3	0.003	0.013	16.7
15/12/2017	SWS2	5.9	6.82	223.5	38.2	-3.5	0.17	<0.003	0.0284	<0.0003	29.1	<0.001	<0.001	11.8
22/12/2017	SWS2	10.2	6.59	266.7	70.1	-7.3	<0.02	0.008	0.0128	<0.0003	20.1	<0.001	<0.001	7.96
29/12/2017	SWS2	5.2	6.45	216	13.1	-9	0.5	<0.003	0.0319	<0.0003	27.7	<0.001	<0.001	13.1
05/01/2018	SWS2	7.3	6.57	274	6.6	-15.2	<0.02	0.007	0.027	<0.0003	36.6	0.002	<0.001	13.7
12/01/2018	SWS2	5.8	6.93	255.4	8.8	-21.7	<0.02	<0.003	0.0317	<0.0003	27.2	0.002	<0.001	9.04
19/01/2018	SWS2	5	6.71	264.2	14.2	10	<0.02	<0.003	0.0306	<0.0003	25.1	0.001	<0.001	8.76
26/01/2018	SWS2	7.01	6.25	270.2	24.1	15.4	<0.02	<0.003	0.0226	<0.0003	33.3	0.001	0.007	9.82
02/02/2018	SWS2	4.5	6.55	263.3	14.9	-1.4	0.32	0.477	0.0256	<0.0003	25.2	0.002	0.001	7.96
09/02/2018	SWS2	3.1	6.63	255.9	43.9	1.7	0.07	<0.003	0.0441	<0.0005	23.4	0.001	<0.001	6.48
16/02/2018	SWS2	5	6.75	242.2	25.6	4.7	<0.02	0.032	0.0255	<0.0008	26.4	0.001	0.001	10.3
23/02/2018	SWS2	4.5	6.62	243.8	19.7	15.2	<0.02	<0.003	0.0269	<0.0008	22.3	0.002	<0.001	10.4
05/03/2018	SWS2	6.2	6.97	243.6	60.9	3.8	0.02	<0.003	0..0398	<0.0003	28.1	0.001	<0.001	8.62
09/03/2018	SWS2	6.2	6.6	249.1	52.6	9.7	<0.02	<0.003	0.0313	<0.0003	26.6	<0.001	<0.001	9.44
16/03/2018	SWS2	10.3	6.94	267.4	40.4	17.3	<0.02	<0.003	0.0211	<0.0003	18.1	<0.001	<0.001	29.5
23/03/2018	SWS2	8.1	7.04	249.6	59.9	4	<0.02	<0.003	0.0256	<0.0003	24.6	0.001	<0.001	9.88
30/03/2018	SWS2	7.1	6.55	237.2	18.9	16.8	<0.02	<0.003	0.0266	<0.0003	22.3	0.001	<0.001	15.2
06/04/2018	SWS2	8.3	6.69	248.7	37.9	17.3	0.05	<0.003	0.0224	<0.0003	25.8	0.001	<0.001	9.14

Determinan		Fluoride	Mercury	Molybdenum	Total PAHs	Total Phenols	Sulphate	Total Dissolved Solids	TOC (Total Organic Carbon)	Total TPH	Antimony	BOD	Boron	Calcium
Date	Location	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
18/12/2017	SWS1	0.35	<0.0001	0.0007	<0.20	<0.01	32.2	175	11.8	<25.0				
15/12/2017	SWS1	<0.01	<0.0001	<0.001	<0.20	<0.01	29.6	175	12.2	<25.0				
22/12/2017	SWS1	<0.01	<0.0001	<0.0004	<0.20	<0.01	28.1	205	5.4	<25.0				
29/12/2017	SWS1	<0.01	<0.0001	<0.0004	<0.20	<0.01	26.4	295	15.6	<25.0	<0.003	<4.00	<0.200	35.8
05/01/2018	SWS1	<0.01	<0.0001	<0.0004	<0.20	<0.01	24.9	195	15.6	<25.0				
12/01/2018	SWS1	<0.01	<0.0001	<0.0004	<0.20	<0.01	35.9	150	7.82	<25.0				
19/01/2018	SWS1	<0.01	<0.0001	<0.0004	<0.20	<0.01	51.7	235	9.58	<25.0				
26/01/2018	SWS1	0.08	<0.0001	<0.0004	<0.20	<0.01	32.8	170	14	<25.0	<0.003	<4.00	<0.200	36.9
02/02/2018	SWS1	0.07	<0.0001	<0.0004	<0.20	<0.01	33.9	185	7.28	<25.0				
09/02/2018	SWS1	0.05	<0.0001	<0.0004	<0.20	<0.01	31.6	165	7.17	48				
16/02/2018	SWS1	0.03	0.0001	<0.0004	<0.20	<0.01	25.8	220	16.4	<25.0				
23/02/2018	SWS1	0.06	<0.0001	<0.0004	<0.2	<0.01	31.9	135	15.6	45	<0.003	<4	<0.2	44.2
05/03/2018	SWS1	0.06	<0.0001	<0.0004	<0.2	<0.01	30.6	155	7.65	<25				
09/03/2018	SWS1	0.02	<0.0001	<0.0004	<0.2	<0.01	56.7	165	9.05	<25				
16/03/2018	SWS1	0.09	<0.0001	0.0999	<0.2	<0.01	25.7	260	14.3	<25				
23/03/2018	SWS1	0.1	<0.0001	<0.0004	<0.2	<0.01	29.7	220	33.1	35.5	<0.003	<4	<0.2	44.9
30/03/2018	SWS1	0.06	<0.0001	<0.0004	<0.2	<0.01	17.8	170	29.3	<25				
06/04/2018	SWS1	0.06	<0.0001	<0.0004	<0.2	<0.01	20.5	150	19.1	<25				
18/12/2017	SWS2	0.36	<0.0001	<0.0004	<0.20	<0.01	31.2	190	62.3	<25.0				
15/12/2017	SWS2	<0.01	<0.0001	<0.001	<0.20	<0.01	21.8	190	14.4	<25.0				
22/12/2017	SWS2	<0.01	<0.0001	<0.0004	<0.20	<0.01	17.3	215	8.72	<25.0				
29/12/2017	SWS2	<0.01	<0.0001	<0.0004	<0.20	<0.01	19.3	220	15.1	<25.0	<0.003	6.36	<0.200	44
05/01/2018	SWS2	<0.01	<0.0001	<0.0004	<0.20	<0.01	35.1	290	13.8	<25.0				
12/01/2018	SWS2	<0.01	<0.0001	<0.0004	<0.20	<0.01	37	215	16.8	<25.0				
19/01/2018	SWS2	<0.01	<0.0001	<0.0004	<0.20	<0.01	34.4	215	10.4	<25.0				
26/01/2018	SWS2	0.09	<0.0001	<0.0004	<0.20	<0.01	36	210	10.8	<25.0	0.013	<4.00	<0.200	53.6
02/02/2018	SWS2	0.08	<0.0001	<0.0004	<0.20	<0.01	29	210	9.51	<25.0				
09/02/2018	SWS2	0.07	<0.0001	<0.0004	<0.20	<0.01	30	210	23	38.5				
16/02/2018	SWS2	0.1	0.0003	<0.0004	<0.20	<0.01	28.6	250	12.9	<25.0				
23/02/2018	SWS2	0.04	<0.0001	<0.0004	<0.2	<0.01	26.9	215	20.7	<25	<0.003	<4	<0.2	60.8
05/03/2018	SWS2	0.13	<0.0001	<0.0004	<0.2	<0.01	27.8	180	9.09	<25				
09/03/2018	SWS2	0.11	<0.0001	<0.0004	<0.2	<0.01	24	185	32.7	<25				
16/03/2018	SWS2	0.06	<0.0001	0.0808	<0.2	<0.01	24	185	32.7	<25.0				
23/03/2018	SWS2	0.11	<0.0001	0.0025	<0.2	<0.01	26.3	250	31.6	40.5	<0.003	<4	<0.2	53.9
30/03/2018	SWS2	0.08	<0.0001	<0.0004	<0.2	<0.01	19.3	200	35.2	<25				
06/04/2018	SWS2	0.09	<0.0001	<0.0004	<0.2	<0.01	20.7	220	8.3	<25.0				

Determinan		COD	Magnesium	Manganese	Nickel	PCBs	Phosphate	Selenium	Sodium	Total Oxidised Nitrogen	Suspended Solids	Zinc	Lead
Date	Location	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
18/12/2017	SWS1												
15/12/2017	SWS1												
22/12/2017	SWS1												
29/12/2017	SWS1	35.9	3.07	0.054	0.0084	<1.00	<0.02	0.022	15.3	<0.003	16	0.027	
05/01/2018	SWS1												
12/01/2018	SWS1												
19/01/2018	SWS1												
26/01/2018	SWS1	31	3.04	<0.040	0.0076	<1.00	<0.02	0.013	13.2	0.621	6	0.028	
02/02/2018	SWS1												
09/02/2018	SWS1												
16/02/2018	SWS1												
23/02/2018	SWS1	<1.5	3.51	<0.04	0.0058	<1	<0.02	<0.006	14	0.869	5	0.033	
05/03/2018	SWS1												
09/03/2018	SWS1												
16/03/2018	SWS1												
23/03/2018	SWS1	123	3.61	<0.04	0.0078	<1	<0.02	<0.006	15.6	1.47	23	0.037	
30/03/2018	SWS1												
06/04/2018	SWS1												
18/12/2017	SWS2												
15/12/2017	SWS2												
22/12/2017	SWS2												
29/12/2017	SWS2	32.7	3.4	0.158	0.0047	<1.00	<0.02	<0.006	18.1	<0.003	92	0.057	
05/01/2018	SWS2												
12/01/2018	SWS2												
19/01/2018	SWS2												
26/01/2018	SWS2	22.8	3.72	0.093	0.007	<1.00	0.37	0.091	16.7	0.914	6	0.029	
02/02/2018	SWS2												
09/02/2018	SWS2												
16/02/2018	SWS2												
23/02/2018	SWS2	17.4	3.86	0.067	0.0055	<1	~<0.02	<0.006	16.1	1.17	48	0.024	
05/03/2018	SWS2												
09/03/2018	SWS2												
16/03/2018	SWS2												
23/03/2018	SWS2	22	3.77	<0.040	0.0073	<1	<0.02	<0.006	16.8	2.52	12	0.025	
30/03/2018	SWS2												
06/04/2018	SWS2												

H.H. & D.E. Drew Limited

Hurn Court Farm Quarry

Hurn, Dorset

Application for Waste Recovery Permit
Site Restoration Using Imported Inert Infill

Hydrogeological Risk Assessment

Version 3
27th May 2020

Appendix 5 Laboratory Certificates

BCL HYDRO
BCL Consultant Hydrogeologists Limited

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West Midlands, WV10 9RU. Tel: 01902 824111, Fax: 01902 824112
email: info@bclhydro.co.uk, web: http://www.bclhydro.co.uk
Registered Office: 33, Wolverhampton Road, Cannock, West Midlands, WV11 1AP
Registered in England & Wales. Company Registration Number: 4043373

ACS Testing Ltd **Record of Site Tests and Laboratory Analysis** Year : **2017/2018**

Client : **New Milton Sand & Ballast** Contract : **Hurn Quarry**

Client Borehole/Ref : **1**

www.acstesting.co.uk

Material : ***Groundwater***

Monitoring Round		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Laboratory Reference		17-89324	17-89497	17-89692	18-89706	18-89778	18-89930	18-90106	18-90307	18-90479	18-90690	18-90907	18-91112	18-91295	18-91426	18-91624	18-91789	18-91964	18-92110
Technician		LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LF	RJD	RJD	RJD	RJD	RJD	LTM
Date : Sampled / Site Tested		08/12/2017	15/12/2017	22/12/2017	29/12/2017	05/01/2018	12/01/2018	19/01/2018	26/01/2018	02/02/2018	09/02/2018	16/02/2018	23/02/2018	05/03/2018	09/03/2018	16/02/2018	23/03/2018	30/03/2018	06/04/2018
Time : Sampled / Site Tested		7.21-9.00	7.00-8.00	7.00-8.00	10.30-11.15	7.30-8.30	7.50-9.00	7.30-8.30	9.40-10.45	7.30-8.40	7.30-8.35	8.00-9.05	7.49-8.50	10.15-11.45	7.10-8.45	11.00-12.30	8.00-9.00	7.20-8.45	8.00-9.00
Site Testing GW/SW	Units																		
Sample Temperature	°C	10.5	9.2	12.8	7.8	11.1	6.4	10.5	9.9	11.0	10.1	1.3	7.4	9.7	10.2	11.6	10.00	7.2	9.2
pH	Nr	7.8	7.36	7.63	7.11	6.43	7.65	7.55	6.52	6.54	7.17	7.62	7.67	7.68	7.33	7.48	7.2	6.28	7.1
Electrical Conductivity	$\mu s.cm^{-1}$	145.0	154.9	13.2	131.6	124.1	124.1	155.8	160.7	173.2	162.3	174.0	153.8	166.5	129.0	183.9	167.7	170.1	148.0
Dissolved Oxygen	%	12.3	9.2	74.4	42.5	29.2	51.3	14.3	32.9	40.8	46.6	48.3	54.2	59.5	55.4	62.2	62.5	67.6	62.5
Eh Redox	mV	-31.5	-45.8	-0.1	5.2	-7.8	-15.6	-15.2	13.6	7.7	0.1	10.1	16.1	-2.2	17.4	4.6	12.9	30.0	21.9
Sample Colour		Cloudy Brown	Brown	Brown Cloudy	Brown	Brown	Brown cloudy	Brown	Brown	Brown	Brown	Brown	Brown	Light Brown	Brown	Light Brown	Light Brown	Brown	Brown
Sample Odour		Loamy / Earthy	Loamy / Earthy	N/A	Loamy	Loamy	Loamy	Loamy	Loamy	Loamy	Loamy	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Laboratory Analysis	Units																		
Ammonical Nitrogen	mg/l	< 0.02	< 0.02	0.21	0.09	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.28	0.29	< 0.02	< 0.02	< 0.02	< 0.02
Arsenic	mg/l	0.039	< 0.003	< 0.003	< 0.003	0.025	< 0.003	0.041	< 0.003	0.281	0.008	0.012	< 0.003	< 0.003	0.006	< 0.003	< 0.003	< 0.003	< 0.003
Barium	mg/l	0.464	0.506	0.0296	0.133	0.226	0.0943	0.221	0.449	0.0319	0.0656	0.0303	0.5	0.129	0.0908	0.0603	0.0432	0.0269	0.0494
Cadmium	mg/l	0.0094	< 0.0003	< 0.0003	0.0026	< 0.0003	< 0.0003	< 0.0003	0.001	< 0.0003	< 0.0005	< 0.0008	< 0.0008	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Chloride	mg/l	10.8	13.7	10.0	12.2	10.3	12.2	11.6	15.1	12.2	12.6	12.4	12.2	13.1	13.6	14.1	15.7	13.9	15.3
Chromium	mg/l	0.057	0.036	0.006	0.02	0.024	0.01	0.029	0.09	0.005	0.009	0.002	0.115	0.014	0.015	0.008	0.007	0.002	0.004
Copper	mg/l	0.093	0.066	0.015	0.034	0.057	0.025	0.052	0.117	0.007	0.017	0.121	0.11	0.031	0.021	0.014	0.01	< 0.001	0.003
Dissolved Organic Carbon	mg/l	0.77	0.95	0.64	4.2	4.55	1.05	0.62	1.22	1.16	3.14	1.85	1.76	< 2.00	4.14	4.06	2.55	< 2.00	< 2.00
Fluoride	mg/l	0.37	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.07	0.07	0.06	0.03	< 0.01	0.09	0.02	0.05	0.1	0.08	0.05
Mercury	mg/l	< 0.0001	< 0.0001	0.0001	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0006	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Molybdenum	mg/l	< 0.0004	< 0.001	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	0.0726	< 0.0004	< 0.0004	< 0.0004
Total PAHs	mg/l	<0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Total Phenols	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sulphate	mg/l	10.9	11.4	10.1	10.5	9.94	11.3	9.52	11.6	9.15	8.76	9.98	< 3.00	9.65	14.3	9.5	10.2	8.92	9.92
Total Dissolved Solids	mg/l	95	50	50	115	280	50	115	10	80	80	90	190	75	95	135	85	140	105
TOC (Total Organic Carbon)	mg/l	14.5	14.1	< 2.00	8.53	12.1	7.33	8.72	13.3	3.93	6.97	18.4	5.4	3.06	8.66	10.9	7.11	5.88	2.88
Total TPH	mg/l	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	74.6	< 25.0	< 25.0	< 25.0	< 25.0	41.5	< 25.0	30	< 25.0	< 25.0
Antimony	mg/l				< 0.003				0.03				< 0.003				< 0.003		
BOD	mg/l				< 4.00				< 4.00				< 4.00				< 4.00		
Boron	mg/l				0.215				< 0.200				< 0.200				< 0.200		
Calcium	mg/l				28.1				64.3				66.2				26.6		
COD	mg/l				< 1.50				< 1.50				< 1.50				8.9		
Magnesium	mg/l				2.22				4.55				4.82				2		
Manganese	mg/l				0.979				3.47				4.25				0.113		
Nickel	mg/l				0.0454				0.149				0.174				0.0104		
PCBs	mg/l				< 1.00				< 1.00				< 1.00				< 1.00		
Phosphate	mg/l				< 0.02				< 0.02				1.28				3.8		
Selenium	mg/l				< 0.006				0.063				< 0.006				0.021		
Sodium	mg/l				11.8				9.4				9.86				11.2		
Total Oxidised Nitrogen	mg/l				1.04				1.68				1.61				2.18		
Suspended Soilds	mg/l				3600				2800				2200				1500		
Zinc	mg/l				0.21				1.01				1.2				0.045		

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Approved by :

Date : 14/05/2018

Approved Signatories : A Elkins
Senior Geo-Environmental Engineer

Quality Testing & Materials Consultancy to the Construction Industry

ACS Testing Ltd **Record of Site Tests and Laboratory Analysis** Year : **2017/2018**

Client : **New Milton Sand & Ballast** Contract : **Hurn Quarry**

Client Borehole/Ref : **2**

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Material :		***Groundwater***																	
Monitoring Round		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Laboratory Reference		17-89324	17-89497	17-89692	18-89706	18-89778	18-89930	18-90106	18-90307	18-90479	18-90690	18-90907	18-91112	18-91295	18-91426	18-91624	18-91789	18-91964	18-92110
Technician		LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LF	RJD	RJD	RJD	RJD	RJD	LTM
Date : Sampled / Site Tested		08/12/2017	15/12/2017	22/12/2017	29/12/2017	05/01/2018	12/01/2018	19/01/2018	26/01/2018	02/02/2018	09/02/2018	16/02/2018	23/02/2018	05/03/2018	09/03/2018	16/02/2018	23/03/2018	30/03/2018	06/04/2018
Time : Sampled / Site Tested		7.30-9.00	7.00-8.00	7.00-8.00	10.30-11.15	7.30-8.30	7.50-9.00	7.30-8.30	9.40-10.45	7.30-8.40	7.30-8.35	8.00-9.05	7.49-8.50	10.15-11.45	7.10-8.45	11.00-12.30	8.00-9.00	7.20-8.45	8.00-9.00
Site Testing GW/SW	Units																		
Sample Temperature	°C	10.4	9.3	12.7	10.3	8.6	10.5	10	9.5	11.8	8.6	9.9	9.2	10.1	9.1	10.8	10.03	7.0	9.6
pH	Nr	7.44	6.84	6.71	6.23	6.23	6.96	6.58	6.31	6.33	6.52	7.62	7.00	6.62	6.73	6.91	6.82	6.17	6.71
Electrical Conductivity	$\mu s.cm^{-1}$	333.5	325.4	354.9	337.1	324.8	342.6	339.7	339.1	365.6	335.5	326.4	337.2	355.4	339.8	354.3	351.9	323.9	351.6
Dissolved Oxygen	%	48.9	38.9	53.9	16.2	43.7	24.1	24.8	32.1	27.4	29.0	31.1	48.6	51.3	41.7	43.6	39.6	51.4	41.9
Eh Redox	mV	13.1	0.2	2.5	10.6	1.6	-16.2	7.1	15.4	14.3	-5.6	9.2	22.4	5.0	19.1	20.9	7.3	24.8	14.8
Sample Colour		Cloudy Brown	Brown	Brown Cloudy	Brown	Brown	Brown cloudy	Brown	Brown	Brown	Brown	Brown	Brown	Light Brown	Brown	Light Brown	Light Brown	Light Brown	Light Brown
Sample Odour		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Laboratory Analysis	Units																		
Ammonical Nitrogen	mg/l	< 0.02	< 0.02	0.03	0.11	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	1.2	< 0.02	0.16	< 0.02	< 0.02	< 0.02	< 0.02
Arsenic	mg/l	0.03	< 0.003	0.02	< 0.003	0.008	< 0.003	0.035	< 0.003	0.45	< 0.003	0.016	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Barium	mg/l	0.0501	0.0732	0.0295	0.0202	0.0245	0.0285	0.0372	0.0215	0.0199	0.0223	0.0287	0.0568	0.074	0.0384	0.0401	0.04	0.0301	0.0288
Cadmium	mg/l	0.0004	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0005	< 0.0008	<0.0008	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Chloride	mg/l	70.2	70.8	38.4	58.6	57.8	55.4	57.5	62.4	52	61.3	55.8	49.9	55.4	50.8	55.8	52.9	53.8	58.8
Chromium	mg/l	0.018	0.012	0.016	0.002	0.003	0.01	0.003	< 0.001	0.002	0.002	0.004	0.011	0.007	0.002	0.007	0.009	0.005	0.003
Copper	mg/l	0.025	0.022	0.037	0.001	0.003	0.01	0.014	0.01	0.003	0.003	0.008	0.047	0.042	0.003	0.021	0.025	< 0.001	< 0.001
Dissolved Organic Carbon	mg/l	1.66	0.75	0.01	0.98	1.59	2.11	1.44	1.5	1.45	1.75	1.8	2.27	< 2.00	2.81	12	5.6	< 2.00	3.63
Fluoride	mg/l	0.35	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.06	0.06	0.05	0.05	0.03	0.06	0.09	0.05	0.09	0.05	0.04
Mercury	mg/l	< 0.0001	0.0001	0.0003	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0017	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Molybdenum	mg/l	< 0.0004	< 0.001	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	0.118	< 0.0004	< 0.0004	< 0.0004
Total PAHs	mg/l	1.26	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Total Phenols	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sulphate	mg/l	58.3	59.5	36.1	58	57.3	58.2	57.3	70.6	56.6	69.9	61.3	59.2	61.2	74	64.8	65.3	64.1	61.4
Total Dissolved Solids	mg/l	285	295	225	350	280	240	295	260	310	305	250	285	240	280	345	370	330	340
TOC (Total Organic Carbon)	mg/l	8.71	7.85	< 2.00	8.16	5.35	5.72	6.02	5.69	3.07	4.53	6.92	4.7	2.16	2.3	14.7	13.5	12.8	4.69
Total TPH	mg/l	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	47	< 25.0	< 25.0	43.2	50.5	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	29	25.5	< 25.0
Antimony	mg/l				< 0.003				0.012				< 0.003				< 0.003		
BOD	mg/l				< 4.00				< 4.00				< 4.00				< 4.00		
Boron	mg/l				< 0.200				< 0.200				< 0.200				< 0.200		
Calcium	mg/l				54.2				64.2				70.6				72.1		
COD	mg/l				< 1.50				< 1.50				< 1.50				51		
Magnesium	mg/l				3.94				3.86				4.19				4.26		
Manganese	mg/l				< 0.040				< 0.040				0.05				< 0.040		
Nickel	mg/l				0.0086				0.0171				0.0473				0.0482		
PCBs	mg/l				< 1.00				< 1.00				< 1.00				< 1.00		
Phosphate	mg/l				< 0.02				< 0.02				0.35				< 0.02		
Selenium	mg/l				< 0.006				0.075				< 0.006				< 0.006		
Sodium	mg/l				26.1				30.7				25				30.4		
Total Oxidised Nitrogen	mg/l				1.58				3.43				2.5				5.38		
Suspended Soilds	mg/l				720				1400				3900				1800		
Zinc	mg/l				0.052				0.111				0.47				0.246		

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Approved by :

Date : 14/05/2018

Approved Signatories : A Elkins
Senior Geo-Environmental Engineer

Quality Testing & Materials Consultancy to the Construction Industry

ACS Testing Ltd **Record of Site Tests and Laboratory Analysis** Year : **2017/2018**

Client : **New Milton Sand & Ballast** Contract : **Hurn Quarry**

Client Borehole/Ref : **3**

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Material : ***Groundwater***

Monitoring Round		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Laboratory Reference		17-89324	17-89497	17-89692	18-89706	18-89778	18-89930	18-90106	18-90307	18-90479	18-90690	18-90907	18-91112	18-91295	18-91426	18-91624	18-91789	18-91964	18-92110
Technician		LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LF	RJD	RJD	RJD	RJD	RJD	LTM
Date : Sampled / Site Tested		08/12/2017	15/12/2017	22/12/2017	29/12/2017	05/01/2018	12/01/2018	19/01/2018	26/01/2018	02/02/2018	09/02/2018	16/02/2018	23/02/2018	05/03/2018	09/03/2018	16/02/2018	23/03/2018	30/03/2018	06/04/2018
Time : Sampled / Site Tested		7.51-9.00	7.00-8.00	7.00-8.00	10.30-11.15	7.30-8.30	7.50-9.00	7.30-8.30	9.40-10.45	7.30-8.40	7.30-8.35	8.00-9.05	7.49-8.50	10.15-11.45	7.10-8.45	11.00-12.30	8.00-9.00	7.20-8.45	8.00-9.00
Site Testing GW/SW	Units																		
Sample Temperature	°C	9.2	10	11.1	10.2	10.5	8.9	9.8	10.3	10.9	5.0	9.3	6.3	9.6	7.5	10.8	10.0	8.9	9.7
pH	Nr	7.48	7.9	6.5	5.78	5.84	6.5	6.01	5.91	5.72	5.99	6.35	6.02	6.30	6.42	6.30	6.31	5.80	6.40
Electrical Conductivity	$\mu s.cm^{-1}$	174.1	197.5	100.6	167.3	168.1	182.9	164.6	166.8	164.9	148.6	164.7	148.2	165.4	157.7	174.5	165.5	160.7	166.9
Dissolved Oxygen	%	60.5	42.5	56.2	8.4	12.9	31.4	14.9	32.4	15.8	48.5	34.3	33.9	67.7	51.7	35.8	27.5	27.7	31.1
Eh Redox	mV	24.1	8.1	12.2	6.1	-7	3.6	16	27.3	29	25.5	40.6	42.3	16.3	49.4	48.4	32.7	23.2	34.4
Sample Colour		Cloudy Brown	Brown	Brown Cloudy	Brown	Brown	Brown cloudy	Brown	Brown	Brown	Brown	Brown	Brown	Light Brown	Brown	Light Brown	Light Brown	Light Brown	Light Brown
Sample Odour		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Laboratory Analysis	Units																		
Ammonical Nitrogen	mg/l	< 0.02	< 0.02	< 0.02	0.16	0.1	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.18	< 0.02	< 0.02	< 0.02	< 0.02
Arsenic	mg/l	0.041	< 0.003	0.012	< 0.003	< 0.003	< 0.003	0.055	< 0.003	0.291	< 0.003	0.014	< 0.003	< 0.003	< 0.003	< 0.003	0.008	< 0.003	< 0.003
Barium	mg/l	0.055	0.0678	0.0404	0.0454	0.0167	0.0232	0.0411	0.0249	0.0171	0.0223	0.0152	0.0535	0.0687	0.0706	0.0344	0.0217	0.0323	0.0147
Cadmium	mg/l	0.0042	< 0.0003	< 0.0003	0.0017	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0005	< 0.0008	< 0.0008	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Chloride	mg/l	14.1	14	13.2	13.1	14.1	14.2	13.2	18.9	13.3	13.5	13.9	14	17.4	14.9	16.6	13.8	13.3	15.9
Chromium	mg/l	0.02	0.01	0.008	0.016	0.003	0.009	0.011	0.007	0.001	0.005	0.002	0.013	0.008	0.01	0.004	0.009	0.005	0.001
Copper	mg/l	0.033	0.019	0.018	0.021	0.004	0.012	0.021	0.012	0.004	0.008	< 0.001	0.041	0.017	0.029	0.004	0.012	< 0.001	< 0.001
Dissolved Organic Carbon	mg/l	1.11	0.47	0.47	0.37	1.01	0.47	0.74	4.6	0.62	0.59	0.62	0.73	< 2.00	< 2.00	3.29	4.55	< 2.00	< 2.00
Fluoride	mg/l	0.33	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.03	0.04	0.03	0.06	0.06	0.04	0.03	0.03	< 0.01	0.02	0.03
Mercury	mg/l	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0007	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Molybdenum	mg/l	0.0098	< 0.001	< 0.0004	< 0.0004	< 0.0004	0.0011	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	0.0749	< 0.0004	< 0.0004	< 0.0004
Total PAHs	mg/l	<0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Total Phenols	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sulphate	mg/l	38.1	39.2	38.8	37.8	36.9	42.8	39.8	49.6	37.5	38.1	40	36.1	41.8	61.3	36.4	39.7	39.2	37.1
Total Dissolved Solids	mg/l	115	120	160	170	160	45	95	70	80	125	180	190	135	95	130	145	145	120
TOC (Total Organic Carbon)	mg/l	5.53	4.5	< 2.00	9.07	7.6	4.17	5.08	4.03	3.23	3.37	17.1	5.29	5.88	8.99	7.68	5.35	13.7	< 2.00
Total TPH	mg/l	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	26	51	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	34.5	< 25.0	< 25.0
Antimony	mg/l				< 0.003				0.014				< 0.003				< 0.003		
BOD	mg/l				< 4.00				< 4.00				< 4.00				< 4.00		
Boron	mg/l				< 0.200				< 0.200				< 0.200				< 0.200		
Calcium	mg/l				30.6				20.9				34.7				26.4		
COD	mg/l				< 1.50				< 1.50				< 1.50				21		
Magnesium	mg/l				4.22				4.01				4.82				4.01		
Manganese	mg/l				0.052				< 0.040				0.051				< 0.040		
Nickel	mg/l				0.0564				0.0319				0.0738				0.0332		
PCBs	mg/l				< 1.00				< 1.00				< 1.00				< 1.00		
Phosphate	mg/l				< 0.02				0.37				0.34				< 0.02		
Selenium	mg/l				< 0.006				0.038				< 0.006				0.014		
Sodium	mg/l				9.41				8.75				10.5				9.33		
Total Oxidised Nitrogen	mg/l				0.548				0.681				1.07				1.34		
Suspended Soilds	mg/l				2200				100				3500				1400		
Zinc	mg/l				0.246				0.129				0.301				0.088		

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Date : 14/05/2018

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Senior Geo-Environmental Engineer

Quality Testing & Materials Consultancy to the Construction Industry

ACS Testing Ltd **Record of Site Tests and Laboratory Analysis** Year : **2017/2018**

Client : **New Milton Sand & Ballast** Contract : **Hurn Quarry**

Client Borehole/Ref : **Ford**

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Material : ***Surface Water***

Monitoring Round		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Laboratory Reference		17-89324	17-89497	17-89692	18-89706	18-89778	18-89930	18-90106	18-90307	18-90479	18-90690	18-90907	18-91112	18-91295	18-91426	18-91624	18-91789	18-91964	18-92110
Technician		LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LF	RJD	RJD	RJD	RJD	RJD	LTM
Date : Sampled / Site Tested		08/12/2017	15/12/2017	22/12/2017	29/12/2017	05/01/2018	12/01/2018	19/01/2018	26/01/2018	02/02/2018	09/02/2018	16/02/2018	23/02/2018	05/03/2018	09/03/2018	16/02/2018	23/03/2018	30/03/2018	06/04/2018
Time : Sampled / Site Tested		8.01-9.00	7.00-8.00	7.00-8.00	10.30-11.15	7.30-8.30	7.50-9.00	7.30-8.30	9.40-10.45	7.30-8.40	7.30-8.35	8.00-9.05	07.49-8.50	10.15-11.45	7.10-8.45	11.00-12.30	8.00-9.00	7.20-8.45	8.00-9.00
Site Testing GW/SW	Units																		
Sample Temperature	°C	8.9	6.8	11.2	5.7	7.5	5.4	5.3	10.3	4.2	3.6	5.5	4.7	6.5	6.5	10.1	8.0	7.2	8.7
pH	Nr	7.03	6.88	6.45	6.08	6.49	6.81	6.34	5.91	6.31	6.46	6.55	6.45	6.55	6.49	6.76	6.80	6.37	6.64
Electrical Conductivity	$\mu s.cm^{-1}$	139.1	197.3	234.4	188.4	205.5	5.7	202.1	166.8	211.2	191	186.7	204.2	210.1	195.5	204.5	212.5	169.8	206.1
Dissolved Oxygen	%	60.3	61.4	71.6	41.6	28.8	71.7	42.6	32.4	17.9	62.2	34.6	47.2	51.3	53.9	47.3	59.2	61.7	48.0
Eh Redox	mV	-1.4	-12.1	1	13.2	-12.2	-4.8	10.7	27.3	19.1	4.8	13.3	24.6	0.7	14.8	19.5	2.6	26.9	20.3
Sample Colour		Clear/ green tint	Clear/ green tint	Clear	Clear/ green tint	Green/ brown clear	Clear	Clear	Brown	Clear	Clear	Clear	Clear	Clear/ green tint	Clear	Clear	Clear	Clear	Clear
Sample Odour		Fresh Vegetation	Fresh Vegetation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Laboratory Analysis	Units																		
Ammonical Nitrogen	mg/l	0.16	< 0.02	< 0.02	< 0.02	0.17	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Arsenic	mg/l	0.016	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	0.373	< 0.003	0.008	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Barium	mg/l	0.0281	0.0265	0.0142	0.0286	0.0236	0.0245	0.0247	0.0214	0.0208	0.0216	0.0202	0.0273	0.0235	0.0244	0.0258	0.0244	0.021	0.215
Cadmium	mg/l	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0005	< 0.0008	< 0.0008	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Chloride	mg/l	22.1	21.4	18.7	24.4	23.3	23	21.1	27.2	21.7	21.3	21.8	22.2	22.3	25.6	24.8	20.1	15.7	18.9
Chromium	mg/l	0.002	< 0.001	0.002	< 0.001	< 0.001	0.002	0.001	< 0.001	0.001	0.002	< 0.001	0.001	0.001	< 0.001	0.001	0.001	0.001	0.001
Copper	mg/l	0.004	< 0.001	< 0.001	< 0.001	< 0.001	0.001	< 0.001	0.001	0.002	< 0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Dissolved Organic Carbon	mg/l	5.46	13.9	4.95	13.4	12.9	6.53	8	13	6.76	4.71	10.3	8.84	7.47	8.9	10.8	24.1	14.7	16.3
Fluoride	mg/l	0.35	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.08	0.07	0.05	0.03	0.06	0.06	0.02	0.09	0.1	0.06	0.06
Mercury	mg/l	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Molybdenum	mg/l	0.0007	< 0.001	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	0.0999	< 0.0004	< 0.0004	< 0.0004
Total PAHs	mg/l	<0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Total Phenols	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sulphate	mg/l	32.2	29.6	28.1	26.4	24.9	35.9	51.7	32.8	33.9	31.6	25.8	31.9	30.6	56.7	25.7	29.7	17.8	20.5
Total Dissolved Solids	mg/l	175	175	205	295	195	150	235	170	185	165	220	135	155	165	260	220	170	150
TOC (Total Organic Carbon)	mg/l	11.8	12.2	5.40	15.6	15.6	7.82	9.58	14	7.28	7.17	16.4	15.6	7.65	9.05	14.3	33.1	29.3	19.1
Total TPH	mg/l	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	48	< 25.0	45	< 25.0	< 25.0	< 25.0	35.5	< 25.0	< 25.0
Antimony	mg/l				< 0.003				< 0.003				< 0.003				< 0.003		
BOD	mg/l				< 4.00				< 4.00				< 4.00				< 4.00		
Boron	mg/l				< 0.200				< 0.200				< 0.200				< 0.200		
Calcium	mg/l				35.8				36.9				44.2				44.9		
COD	mg/l				35.9				31				< 1.50				123		
Magnesium	mg/l				3.07				3.04				3.51				3.61		
Manganese	mg/l				0.054				< 0.040				< 0.040				< 0.040		
Nickel	mg/l				0.0084				0.0076				0.0058				0.0078		
PCBs	mg/l				< 1.00				< 1.00				< 1.00				< 1.00		
Phosphate	mg/l				< 0.02				< 0.02				< 0.02				< 0.02		
Selenium	mg/l				0.022				0.013				< 0.006				< 0.006		
Sodium	mg/l				15.3				13.2				14				15.6		
Total Oxidised Nitrogen	mg/l				< 0.003				0.621				0.869				1.47		
Suspended Soilds	mg/l				16				6				5				23		
Zinc	mg/l				0.027				0.028				0.033				0.037		

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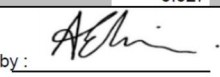
Approved by : 

Date : 14/05/2018

Approved Signatories : A Elkins
Senior Geo-Environmental Engineer

Quality Testing & Materials Consultancy to the Construction Industry

ACS Testing Ltd **Record of Site Tests and Laboratory Analysis** Year : **2017/2018**

Client : **New Milton Sand & Ballast** Contract : **Hurn Quarry**

Client Borehole/Ref : **River**

www.acstesting.co.uk

Material : ***Surface Water***

Monitoring Round		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Laboratory Reference		17-89324	17-89497	17-89692	18-89706	18-89778	18-89930	18-90106	18-90307	18-90479	18-90690	18-90907	18-91112	18-91295	18-91426	18-91624	18-91789	18-91964	18-92110
Technician		LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LTM	LF	RJD	RJD	RJD	RJD	RJD	LTM
Date : Sampled / Site Tested		08/12/2017	15/12/2017	22/12/2017	29/12/2017	05/01/2018	12/01/2018	19/01/2018	26/01/2018	02/02/2018	09/02/2018	16/02/2018	23/02/2018	05/03/2018	09/03/2018	16/02/2018	23/03/2018	30/03/2018	06/04/2018
Time : Sampled / Site Tested		8.25-9.00	7.00-8.00	7.00-8.00	10.30-11.15	7.30-8.30	7.50-9.00	7.30-8.30	9.40-10.45	7.30-8.40	7.30-8.35	8.00-9.05	07.49-8.50	10.15-11.45	7.10-8.45	11.00-12.30	8.00-9.00	7.20-8.45	8.00-9.00
Site Testing GW/SW	Units																		
Sample Temperature	°C	8.5	5.9	10.2	5.2	7.3	5.8	5	7.01	4.5	3.1	5.0	4.5	6.2	6.2	10.3	8.1	7.1	8.3
pH	Nr	7.15	6.82	6.59	6.45	6.57	6.93	6.71	6.25	6.55	6.63	6.75	6.62	6.97	6.60	6.94	7.04	6.55	6.69
Electrical Conductivity	$\mu s.cm^{-1}$	215.7	223.5	266.7	216	274	255.4	264.2	270.2	263.3	255.9	242.2	243.8	243.6	249.1	267.4	249.6	237.2	248.7
Dissolved Oxygen	%	49.4	38.2	70.1	13.1	6.6	8.8	14.2	24.1	14.9	43.9	25.6	19.7	60.9	52.6	40.4	59.9	18.9	37.9
Eh Redox	mV	-2.5	-3.5	-7.3	-9	-15.2	-21.7	10	15.4	-1.4	1.7	4.7	15.2	3.8	9.7	17.3	4.0	16.8	17.3
Sample Colour		Clear/ green tint	Clear/ green tint	Clear	Clear/ green tint	Green/ brown clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear
Sample Odour		Fresh Vegetation	Fresh Vegetation	Fresh Vegetation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Laboratory Analysis	Units																		
Ammonical Nitrogen	mg/l	0.07	0.17	< 0.02	0.5	< 0.02	< 0.02	< 0.02	< 0.02	0.32	0.07	< 0.02	< 0.02	0.02	< 0.02	< 0.02	< 0.02	< 0.02	0.05
Arsenic	mg/l	0.014	< 0.003	0.008	< 0.003	0.007	< 0.003	< 0.003	< 0.003	0.477	< 0.003	0.032	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
Barium	mg/l	0.128	0.0284	0.0128	0.0319	0.027	0.0317	0.0306	0.0226	0.0256	0.0441	0.0255	0.0269	0.0398	0.0313	0.0211	0.0256	0.0266	0.0224
Cadmium	mg/l	0.0014	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0005	< 0.0008	< 0.0008	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
Chloride	mg/l	23.3	29.1	20.1	27.7	36.6	27.2	25.1	33.3	25.2	23.4	26.4	22.3	28.1	26.6	18.1	24.6	22.3	25.8
Chromium	mg/l	0.003	< 0.001	< 0.001	< 0.001	0.002	0.002	0.001	0.001	0.002	0.001	0.001	0.002	0.001	< 0.001	< 0.001	0.001	0.001	0.001
Copper	mg/l	0.013	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.007	0.001	< 0.001	0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Dissolved Organic Carbon	mg/l	16.7	11.8	7.96	13.1	13.7	9.04	8.76	9.82	7.96	6.48	10.3	10.4	8.62	9.44	29.5	9.88	15.2	9.14
Fluoride	mg/l	0.36	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.09	0.08	0.07	0.1	0.04	0.13	0.11	0.06	0.11	0.08	0.09
Mercury	mg/l	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0003	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Molybdenum	mg/l	< 0.0004	< 0.001	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004	0.0808	0.0025	< 0.0004	< 0.0004
Total PAHs	mg/l	<0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Total Phenols	mg/l	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Sulphate	mg/l	31.2	21.8	17.3	19.3	35.1	37	34.4	36	29	30	28.6	26.9	27.8	29.7	24	26.3	19.3	20.7
Total Dissolved Solids	mg/l	190	190	215	220	290	215	215	210	210	210	250	215	180	220	185	250	200	220
TOC (Total Organic Carbon)	mg/l	62.3	14.4	8.72	15.1	13.8	16.8	10.4	10.8	9.51	23	12.9	20.7	9.09	9.57	32.7	31.6	35.2	8.3
Total TPH	mg/l	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	38.5	< 25.0	< 25.0	< 25.0	39	< 25.0	40.5	< 25.0	< 25.0
Antimony	mg/l				< 0.003				0.013				< 0.003				< 0.003		
BOD	mg/l				6.36				< 4.00				< 4.00				< 4.00		
Boron	mg/l				< 0.200				< 0.200				< 0.200				< 0.200		
Calcium	mg/l				44				53.6				60.8				53.9		
COD	mg/l				32.7				22.8				17.4				22		
Magnesium	mg/l				3.4				3.72				3.86				3.77		
Manganese	mg/l				0.158				0.093				0.067				< 0.040		
Nickel	mg/l				0.0047				0.007				0.0055				0.0073		
PCBs	mg/l				< 1.00				< 1.00				< 1.00				< 1.00		
Phosphate	mg/l				< 0.02				0.37				< 0.02				< 0.02		
Selenium	mg/l				< 0.006				0.091				< 0.006				< 0.006		
Sodium	mg/l				18.1				16.7				16.1				16.8		
Total Oxidised Nitrogen	mg/l				< 0.003				0.914				1.17				2.52		
Suspended Soilds	mg/l				92				6				48				12		
Zinc	mg/l				0.057				0.029				0.024				0.025		

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Approved by : A Elkins

Date : 14/05/2018

Approved Signatories : A Elkins
Senior Geo-Environmental Engineer

Quality Testing & Materials Consultancy to the Construction Industry

ACS Testing Limited **Record of Site Tests and Laboratory Analysis** Year : **2019**

Client Borehole/Ref : **1**

www.acsgroupofcompanies.co.uk

Client : **New Milton Sand & Ballast** Contract : **Hurn Court Farm Quarry**

Material : ***Groundwater & Gas***

Month			JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Laboratory Reference			**19-99781**			**19-52226**			**19-54479**					
Technician			LTM			LTM			RC					
Date : Sampled / Site Tested			23/01/2019			11/04/2019			01/07/2019					
Weather Conditions			Clear			Clear			Sunny					
Site Testing GW/SW/Leach	(Trigger Level)	Units												
BH Water Level (from cover level)		m				2.9			3.55					
BH Base Level (from cover level)		m				6.94			7					
Sample Temperature		°C	6.7			11.1			19.9					
pH		Nr	8.74			7.33			6.46					
Electrical Conductivity		µs.cm-1	164.9			157.7			173.5					
Dissolved Oxygen		%	79.3			77.3			50.4					
Eh Redox		mV	6.20			73.80			-7.50					
Sample Colour			Brown			Brown			Brown					
Sample Odour			N/A			N/A			N/A					
Laboratory Analysis	*(Trigger Level)*	Units												
Chloride		mg/l	17.8			17.5			11.6					
Fluoride		mg/l	0.020			0.08			0.10					
Phosphate (Ortho) PO4		mg/l	< 0.02			< 0.02			0.02					
Sulphate		mg/l	11.3			14.6			19.1					
DOC		mg/l	3.8			< 2.00			< 2.00					
TOC (Total Organic Carbon)		mg/l	4.1			2.19			6.77					
Arsenic		mg/l	< 0.007			< 0.007			< 0.007					
Boron		mg/l	< 0.200			< 0.200			< 0.200					
Barium		mg/l	0.010			0.0135			0.0180					
Calcium		mg/l	23.10			19.7			18.4					
Cadmium		mg/l	< 0.0008			< 0.0008			< 0.0008					
Chromium		mg/l	< 0.001			< 0.001			< 0.001					
Copper		mg/l	< 0.008			< 0.008			< 0.008					
Mercury		mg/l	< 0.0001			< 0.0001			< 0.0001					
Magnesium		mg/l	1.6900			1.42			1.44					
Manganese		mg/l	0.055			0.19			0.19					
Molybdenum		mg/l	< 0.0010			< 0.0010			< 0.0010					
Sodium		mg/l	13.90			10.1			10.5					
Nickel		mg/l	0.003			0.004			0.008					
Antimony		mg/l	< 0.003			< 0.003			< 0.003					
Selenium		mg/l	< 0.006			< 0.006			< 0.006					
Zinc		mg/l	< 0.002			< 0.002			< 0.002					
Total TPH (C10-C40)		mg/l	< 25.0			< 25.0			< 25.0					
Total Phenol (Sum of 4 specific phenols)		mg/l	< 0.01			< 0.01			< 0.01					
Total PAH		mg/l	< 0.20			0.21			< 0.20					
PCB (7 Congeners)		mg/l	< 1.00			< 1.00			< 1.00					
Ammoniacal Nitrogen		mg/l	0.040			< 0.02			0.120					
BOD (Biochemical Oxygen Demand)		mg/l	5.380			< 4.00			< 4.00					
COD (Chemical Oxygen Demand)		mg/l	17			6.1			5.0					
Total Dissolved Solids		mg/l	140			60			105					
Suspended Solids		mg/l	970			4300			3200					
TON (Total Oxidisable Nitrogen)		mg/l	1.47			1.44			1.01					
Quarterly testing		Denotes Not Required	(approx) = values below Limit of Detection											

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Approved by : _____ Date : **07/08/2019**

Approved Signatories : **David Rowlands** BSc(Hons) MSc
Senior Geo-Environmental Engineer

Quality Testing & Materials Consultancy to the Construction Industry

ACS Testing Limited **Record of Site Tests and Laboratory Analysis** Year : **2019**

Client Borehole/Ref : **2**

Client : **New Milton Sand & Ballast** Contract : **Hurn Court Farm Quarry**

www.acsgroupofcompanies.co.uk

Material : ***Groundwater & Gas***

Month			JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Laboratory Reference			**19-99781**			**19-52226**			**19-54479**					
Technician			LTM			LTM			RC					
Date : Sampled / Site Tested			23/01/2019			11/04/2019			01/07/2019					
Weather Conditions			Clear			Clear			Sunny					
Site Testing GW/SW/Leach	(Trigger Level)	Units												
BH Water Level (from cover level)		m				3.1			3.66					
BH Base Level (from cover level)		m				7.78			7.91					
Sample Temperature		°C	8.3			10.9			17.5					
pH		Nr	8.68			7.09			5.83					
Electrical Conductivity		µs.cm-1	354.1			348.6			381.2					
Dissolved Oxygen		%	63.3			79.8			38.3					
Eh Redox		mV	13.70			60.90			6.0					
Sample Colour			Brown			Brown			Brownish Grey					
Sample Odour			N/A			N/A			N/A					
Laboratory Analysis	*(Trigger Level)*	Units												
Chloride		mg/l	83.1			81.1			89.4					
Fluoride		mg/l	0.010			0.03			0.04					
Phosphate (Ortho) PO4		mg/l	< 0.02			< 0.02			< 0.02					
Sulphate		mg/l	62.6			74.5			59.1					
DOC		mg/l	2.3			< 2.00			< 2.00					
TOC (Total Organic Carbon)		mg/l	3.1			3.21			< 2.00					
Arsenic		mg/l	< 0.007			< 0.007			< 0.007					
Boron		mg/l	< 0.200			< 0.200			< 0.200					
Barium		mg/l	0.017			0.0161			0.0203					
Calcium		mg/l	65.40			57.6			58.0					
Cadmium		mg/l	< 0.0008			< 0.0008			< 0.0008					
Chromium		mg/l	< 0.001			< 0.001			< 0.001					
Copper		mg/l	< 0.008			< 0.008			< 0.008					
Mercury		mg/l	< 0.0001			< 0.0001			< 0.0001					
Magnesium		mg/l	4.1500			3.47			4.02					
Manganese		mg/l	< 0.040			0.011			0.012					
Molybdenum		mg/l	< 0.0010			< 0.0010			< 0.0010					
Sodium		mg/l	30.20			30			28					
Nickel		mg/l	0.003			0.0047			0.0038					
Antimony		mg/l	< 0.003			< 0.003			< 0.003					
Selenium		mg/l	< 0.006			< 0.006			< 0.006					
Zinc		mg/l	0.003			0.007			0.024					
Total TPH (C10-C40)		mg/l	< 25.0			< 25.0			< 25.0					
Total Phenol (Sum of 4 specific phenols)		mg/l	< 0.01			< 0.01			< 0.01					
Total PAH		mg/l	< 0.20			< 0.20			< 0.20					
PCB (7 Congeners)		mg/l	< 1.00			< 1.00			< 1.00					
Ammoniacal Nitrogen		mg/l	< 0.02			< 0.02			0.020					
BOD (Biochemical Oxygen Demand)		mg/l	4.650			13			< 4.00					
COD (Chemical Oxygen Demand)		mg/l	21			< 1.50			32.600					
Total Dissolved Solids		mg/l	415			345			390					
Suspended Solids		mg/l	660			850			2800					
TON (Total Oxidisable Nitrogen)		mg/l	2.71			3.16			1.97					

Quarterly testing | Denotes Not Required | (approx) = values below Limit of Detection

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Approved Signatories : **David Rowlands** BSc(Hons) MSc
Senior Geo-Environmental Engineer

Quality Testing & Materials Consultancy to the Construction Industry

ACS Testing Limited **Record of Site Tests and Laboratory Analysis** Year : **2019**

Client Borehole/Ref : **3**

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Client : **New Milton Sand & Ballast** Contract : **Hurn Court Farm Quarry**

Material : ***Groundwater & Gas***

Month			JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Laboratory Reference			**19-99781**			**19-52226**			**19-54480**					
Technician			LTM			LTM			RC					
Date : Sampled / Site Tested			23/01/2019			11/04/2019			01/07/2019					
Weather Conditions			Clear			Clear			Sunny					
Site Testing GW/SW/Leach	(Trigger Level)	Units												
BH Water Level (from cover level)		m				3.23			3.8					
BH Base Level (from cover level)		m				7.66			7.96					
Sample Temperature		°C	8.4			11.7			19.3					
pH		Nr	8.43			7.07			6.76					
Electrical Conductivity		µs.cm-1	169.7			162.8			39.5					
Dissolved Oxygen		%	101.2			75.6			11.3					
Eh Redox		mV	15.60			90.40			8.10					
Sample Colour			Brown			Brown			Dark Grey					
Sample Odour			N/A			N/A			N/A					
Laboratory Analysis	*(Trigger Level)*	Units												
Chloride		mg/l	18.3			18.9			20.7					
Fluoride		mg/l	< 0.01			0.04			0.05					
Phosphate (Ortho) PO4		mg/l	< 0.02			< 0.02			0.04					
Sulphate		mg/l	39.60			52.4			34.2					
DOC		mg/l	2.2			< 2.00			7.2					
TOC (Total Organic Carbon)		mg/l	3.2			3.15			33.80					
Arsenic		mg/l	< 0.007			< 0.007			< 0.007					
Boron		mg/l	< 0.200			< 0.200			< 0.200					
Barium		mg/l	0.009			0.01			0.02					
Calcium		mg/l	25.90			21.9			25.3					
Cadmium		mg/l	< 0.0008			< 0.0008			< 0.0008					
Chromium		mg/l	< 0.001			< 0.001			< 0.001					
Copper		mg/l	< 0.008			< 0.008			< 0.008					
Mercury		mg/l	< 0.0001			< 0.0001			< 0.0001					
Magnesium		mg/l	3.6900			3.21			3.43					
Manganese		mg/l	< 0.040			0.017			0.146					
Molybdenum		mg/l	< 0.0010			< 0.0010			< 0.0010					
Sodium		mg/l	10.50			8.86			11.40					
Nickel		mg/l	0.013			0.013			0.009					
Antimony		mg/l	< 0.003			< 0.003			< 0.003					
Selenium		mg/l	< 0.006			< 0.006			< 0.006					
Zinc		mg/l	0.023			0.01			< 0.002					
Total TPH (C10-C40)		mg/l	26.000			< 25.0			< 25.0					
Total Phenol (Sum of 4 specific phenols)		mg/l	< 0.01			< 0.01			< 0.01					
Total PAH		mg/l	< 0.20			< 0.20			< 0.20					
PCB (7 Congeners)		mg/l	< 1.00			< 1.00			< 1.00					
Ammoniacal Nitrogen		mg/l	0.170			0.05			0.42					
BOD (Biochemical Oxygen Demand)		mg/l	5.750			< 4.00			85.5					
COD (Chemical Oxygen Demand)		mg/l	15			2.2			26.2					
Total Dissolved Solids		mg/l	155			85			175					
Suspended Solids		mg/l	150			390			11000					
TON (Total Oxidisable Nitrogen)		mg/l	0.397			0.304			0.150					

Quarterly testing | Denotes Not Required | (approx) = values below Limit of Detection

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Quality Testing & Materials Consultancy to the Construction Industry

ACS Testing Limited

Record of Site Tests and Laboratory Analysis

Year : **2019**

Client Borehole/Ref : **4**

Client : **New Milton Sand & Ballast**

Contract : **Hurn Court Farm Quarry**

www.acsgroupofcompanies.co.uk

Material : ***Groundwater & Gas***

Month			JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Laboratory Reference			**19-99781**			**19-52226**			**19-54479**					
Technician			LTM			LTM			RC					
Date : Sampled / Site Tested			23/01/2019			11/04/2019			01/07/2019					
Weather Conditions			Clear			Clear			Sunny					
Site Testing GW/SW/Leach	(Trigger Level)	Units												
Sample Temperature		°C	4.1			10.7			17.6					
pH		Nr	7.74			6.34			6.26					
Electrical Conductivity		µs.cm-1	200.3			213.6			235.0					
Dissolved Oxygen		%	51.1			91.4			17.7					
Eh Redox		mV	25.8			94.3			-4.8					
Sample Colour			Clear			Clear			Clear					
Sample Odour			N/A			N/A			N/A					
Laboratory Analysis	*(Trigger Level)*	Units												
Chloride		mg/l	30.2			27.5			22.4					
Fluoride		mg/l	0.010			0.07			0.06					
Phosphate (Ortho) PO4		mg/l	< 0.02			< 0.02			0.03					
Sulphate		mg/l	36.10			37.4			19.9					
DOC		mg/l	9.4			6.7			5.5					
TOC (Total Organic Carbon)		mg/l	10.9			7.2			6.8					
Arsenic		mg/l	< 0.007			< 0.007			< 0.007					
Boron		mg/l	< 0.200			< 0.200			< 0.200					
Barium		mg/l	0.017			0.0159			0.0147					
Calcium		mg/l	44.30			36.7			35.7					
Cadmium		mg/l	< 0.0008			< 0.0008			< 0.0008					
Chromium		mg/l	< 0.001			< 0.001			< 0.001					
Copper		mg/l	< 0.008			< 0.008			< 0.008					
Mercury		mg/l	< 0.0001			< 0.0001			< 0.0001					
Magnesium		mg/l	3.2500			2.8			3.0					
Manganese		mg/l	< 0.040			0.019			0.072					
Molybdenum		mg/l	< 0.0010			< 0.0010			< 0.0010					
Sodium		mg/l	16.20			14.5			13.1					
Nickel		mg/l	0.004			0.004			0.002					
Antimony		mg/l	< 0.003			< 0.003			< 0.003					
Selenium		mg/l	< 0.006			< 0.006			< 0.006					
Zinc		mg/l	0.003			0.003			< 0.002					
Total TPH (C10-C40)		mg/l	< 25.0			< 25.0			< 25.0					
Total Phenol (Sum of 4 specific phenols)		mg/l	< 0.01			< 0.01			< 0.01					
Total PAH		mg/l	< 0.20			< 0.20			< 0.20					
PCB (7 Congeners)		mg/l	< 1.00			< 1.00			< 1.00					
Ammoniacal Nitrogen		mg/l	0.110			< 0.02			0.350					
BOD (Biochemical Oxygen Demand)		mg/l	6.360			< 4.00			< 4.00					
COD (Chemical Oxygen Demand)		mg/l	28			16.7			13.6					
Total Dissolved Solids		mg/l	235			110			210					
Suspended Solids		mg/l	43			5			23					
TON (Total Oxidisable Nitrogen)		mg/l	0.807			0.265			0.023					

Quarterly testing | Denotes Not Required | (approx) = values below Limit of Detection

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Senior Geo-Environmental Engineer

Quality Testing & Materials Consultancy to the Construction Industry

ACS Testing Limited **Record of Site Tests and Laboratory Analysis** Year : **2019**

Client Borehole/Ref : **5**

Client : **New Milton Sand & Ballast** Contract : **Hurn Court Farm Quarry**

Material : ***Groundwater & Gas***

Month			JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Laboratory Reference			**19-99781**			**19-52226**			**19-54480**					
Technician			LTM			LTM			RC					
Date : Sampled / Site Tested			23/01/2019			11/04/2019			01/07/2019					
Weather Conditions			Clear			Clear			Sunny					
Site Testing GW/SW/Leach	(Trigger Level)	Units												
Sample Temperature		°C	4.6			10.6			17.8					
pH		Nr	7.54			6.70			6.38					
Electrical Conductivity		µs.cm-1	211.3			245.3			280.5					
Dissolved Oxygen		%	44.5			89.1			22.5					
Eh Redox		mV	22.2			86.7			-7.3					
Sample Colour			Clear			Clear			Clear					
Sample Odour			N/A			N/A			N/A					
Laboratory Analysis	(Trigger Level)	Units												
Chloride		mg/l	33.8			35.7			28.4					
Fluoride		mg/l	0.010			0.09			0.08					
Phosphate (Ortho) PO4		mg/l	< 0.02			< 0.02			< 0.02					
Sulphate		mg/l	28.00			28.5			8.4					
DOC		mg/l	7.8			12.2			6.3					
TOC (Total Organic Carbon)		mg/l	9.8			10.2			7.7					
Arsenic		mg/l	< 0.007			< 0.007			< 0.007					
Boron		mg/l	< 0.200			< 0.200			< 0.200					
Barium		mg/l	0.022			0.0177			0.0153					
Calcium		mg/l	56.20			44.4			44.5					
Cadmium		mg/l	< 0.0008			< 0.0008			< 0.0008					
Chromium		mg/l	< 0.001			< 0.001			< 0.001					
Copper		mg/l	< 0.008			< 0.008			< 0.008					
Mercury		mg/l	< 0.0001			< 0.0001			< 0.0001					
Magnesium		mg/l	3.5600			3.01			3.27					
Manganese		mg/l	0.071			0.042			0.078					
Molybdenum		mg/l	< 0.0010			< 0.0010			< 0.0010					
Sodium		mg/l	18.80			16.3			13.1					
Nickel		mg/l	0.002			0.0035			< 0.0008					
Antimony		mg/l	< 0.003			< 0.003			< 0.003					
Selenium		mg/l	< 0.006			< 0.006			0.008					
Zinc		mg/l	< 0.002			0.005			< 0.002					
Total TPH (C10-C40)		mg/l	< 25.0			< 25.0			< 25.0					
Total Phenol (Sum of 4 specific phenols)		mg/l	< 0.01			< 0.01			< 0.01					
Total PAH		mg/l	< 0.20			< 0.20			< 0.20					
PCB (7 Congeners)		mg/l	< 1.00			< 1.00			< 1.00					
Ammoniacal Nitrogen		mg/l	0.310			< 0.02			0.110					
BOD (Biochemical Oxygen Demand)		mg/l	7.190			< 4.00			5.330					
COD (Chemical Oxygen Demand)		mg/l	34			22.3			19.0					
Total Dissolved Solids		mg/l	260			175			205					
Suspended Solids		mg/l	130			9.5			37.0					
TON (Total Oxidisable Nitrogen)		mg/l	1.27			0.952			0.205					

Quarterly testing | Denotes Not Required | (approx) = values below Limit of Detection

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Senior Geo-Environmental Engineer

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Record of Site Tests and Laboratory Analysis

Year : **2019**

Client Borehole/Ref : **BH19-1**

Client : **New Milton Sand & Ballast**

Contract : **Hurn Court Farm Quarry**

Material : ***Groundwater & Gas***

Month			JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Laboratory Reference			**19-50483**	**19-50878**		**19-52226**			**19-54480**					
Technician			LTM	LTM		LTM			RC					
Date : Sampled / Site Tested			14/02/2019	27/02/2019		11/04/2019			01/07/2019					
Weather Conditions			Sunny	Clear / Sunny		Clear			Sunny					
Site Testing GW/SW/Leach	(Trigger Level)	Units												
BH Water Level (from cover level)		m	3.11	3.05	BH19-1 added to quarterly monitoring schedule.	3.20			3.91					
BH Base Level (from cover level)		m	9.91	9.9		9.52			9.65					
Sample Temperature		°C	11.6	12.8		11.5			17.0					
pH		Nr	7.65	8.01		7.17			5.74					
Electrical Conductivity		µs.cm-1	137.6	182.5		136.7			127.6					
Dissolved Oxygen		%	61.9	39.4		42.6			40.9					
Eh Redox		mV	27.00	15.40		82.20			23.30					
Sample Colour			Brown	Brown		Brown			Brown					
Sample Odour			N/A	N/A		N/A			N/A					
Laboratory Analysis	*(Trigger Level)*	Units												
Chloride		mg/l	For previous water results please refer to Round Monitoring Excel File.	For previous water results please refer to Round Monitoring Excel File.		16.9			20.1					
Fluoride		mg/l				0.05			0.05					
Phosphate (Ortho) PO4		mg/l				< 0.02			0.14					
Sulphate		mg/l				28.2			21.2					
DOC		mg/l				< 2.00			< 2.00					
TOC (Total Organic Carbon)		mg/l				2.2			33.6					
Arsenic		mg/l				< 0.007			< 0.007					
Boron		mg/l				< 0.200			< 0.200					
Barium		mg/l				0.0096			0.0125					
Calcium		mg/l				15.9			16.6					
Cadmium		mg/l				< 0.0008			< 0.0008					
Chromium		mg/l				< 0.001			< 0.001					
Copper		mg/l				< 0.008			< 0.008					
Mercury		mg/l				< 0.0001			< 0.0001					
Magnesium		mg/l				1.26			1.32					
Manganese		mg/l				0.79			0.43					
Molybdenum		mg/l				< 0.0010			< 0.0010					
Sodium		mg/l				9.16			8.38					
Nickel		mg/l				0.0062			0.0061					
Antimony		mg/l				< 0.003			< 0.003					
Selenium		mg/l				< 0.006			< 0.006					
Zinc		mg/l				< 0.002			< 0.002					
Total TPH (C10-C40)		mg/l				< 25.0			< 25.0					
Total Phenol (Sum of 4 specific phenols)		mg/l				< 0.01			< 0.01					
Total PAH		mg/l				< 0.20			< 0.20					
PCB (7 Congeners)		mg/l				< 1.00			< 1.00					
Ammoniacal Nitrogen		mg/l				0.020			0.020					
BOD (Biochemical Oxygen Demand)		mg/l				4.02			< 4.00					
COD (Chemical Oxygen Demand)		mg/l				< 1.50			2.0					
Total Dissolved Solids		mg/l				45			115					
Suspended Solids		mg/l				7500			10000					
TON (Total Oxidisable Nitrogen)		mg/l				0.33			0.35					

Quarterly testing | Denotes Not Required | (approx) = values below Limit of Detection

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Senior Geo-Environmental Engineer

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Record of Site Tests and Laboratory Analysis

Year : **2019**

Client : **New Milton Sand & Ballast**

Contract : **Hurn Court Farm Quarry**

Client Borehole/Ref : **BH19-2**

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Material : ***Groundwater & Gas***

Month			JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Laboratory Reference			**19-50483**	**19-50878**		**19-52226**			**19-54480**					
Technician			LTM	LTM		LTM			RC					
Date : Sampled / Site Tested			14/02/2019	27/02/2019		11/04/2019			01/07/2019					
Weather Conditions			Sunny	Clear / Sunny		Clear			Sunny					
Site Testing GW/SW/Leach	(Trigger Level)	Units			BH19-2 added to quarterly monitoring schedule.									
BH Water Level (from cover level)		m	3.26	3.24		3.07			3.97					
BH Base Level (from cover level)		m	9.65	9.65		9.56			9.97					
Sample Temperature		°C	11.4	12.8		11.1			15.3					
pH		Nr	7.13	7.29		6.71			5.93					
Electrical Conductivity		µs.cm-1	472.6	381.3		284.9			280.1					
Dissolved Oxygen		%	86.6	37.4		86.4			29.3					
Eh Redox		mV	15.6	19.8		96.5			16.20					
Sample Colour			Clear	Clear		Clear			Clear					
Sample Odour			N/A	N/A		N/A			N/A					
Laboratory Analysis	*(Trigger Level)*	Units												
Chloride		mg/l				25.6			30.5					
Fluoride		mg/l				0.06			0.07					
Phosphate (Ortho) PO4		mg/l				0.1			0.1					
Sulphate		mg/l				43.9			51.6					
DOC		mg/l				3.13			< 2.00					
TOC (Total Organic Carbon)		mg/l				3.3			4.8					
Arsenic		mg/l				< 0.007			< 0.007					
Boron		mg/l				< 0.200			< 0.200					
Barium		mg/l	For previous water results please refer to Round Monitoring Excel File.	For previous water results please refer to Round Monitoring Excel File.		0.0867			0.0734					
Calcium		mg/l				116			51					
Cadmium		mg/l				< 0.0008			< 0.0008					
Chromium		mg/l				< 0.001			< 0.001					
Copper		mg/l				< 0.008			< 0.008					
Mercury		mg/l				< 0.0001			< 0.0001					
Magnesium		mg/l				3.36			5.16					
Manganese		mg/l				0.058			0.143					
Molybdenum		mg/l				< 0.0010			< 0.0010					
Sodium		mg/l				11.3			10.6					
Nickel		mg/l				0.0034			0.0018					
Antimony		mg/l				< 0.003			< 0.003					
Selenium		mg/l				< 0.006			< 0.006					
Zinc		mg/l				< 0.002			< 0.002					
Total TPH (C10-C40)		mg/l				< 25.0			< 25.0					
Total Phenol (Sum of 4 specific phenols)		mg/l				< 0.01			< 0.01					
Total PAH		mg/l				< 0.20			< 0.20					
PCB (7 Congeners)		mg/l				< 1.00			< 1.00					
Ammoniacal Nitrogen		mg/l				< 0.02			0.040					
BOD (Biochemical Oxygen Demand)		mg/l				< 4.00			< 4.00					
COD (Chemical Oxygen Demand)		mg/l				7.4			7.4					
Total Dissolved Solids		mg/l				305			220					
Suspended Solids		mg/l				110			490					
TON (Total Oxidisable Nitrogen)		mg/l				6.54			0.66					
Quarterly testing		Denotes Not Required	(approx) = values below Limit of Detection											

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Record of Site Tests and Laboratory Analysis

Year : **2019**

Client Borehole/Ref : **BH19-3**

Client : **New Milton Sand & Ballast**

Contract : **Hurn Court Farm Quarry**

Material : ***Groundwater & Gas***

Month			JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
Laboratory Reference			**19-50483**	**19-50878**		**19-52226**			**19-54480**					
Technician			LTM	LTM		LTM			RC					
Date : Sampled / Site Tested			14/02/2019	27/02/2019		11/04/2019			01/07/2019					
Weather Conditions			Sunny	Clear / Sunny		Clear			Sunny					
Site Testing GW/SW/Leach	(Trigger Level)	Units												
BH Water Level (from cover level)		m	2.85	2.90	BH19-3 added to quarterly monitoring schedule.	2.94			3.69					
BH Base Level (from cover level)		m	8.83	8.83		8.83			10.09					
Sample Temperature		°C	11.1	12.3		10.6			15.5					
pH		Nr	6.99	7.01		6.63			6.04					
Electrical Conductivity		µs.cm-1	294.2	313.6		243.1			232.9					
Dissolved Oxygen		%	62.8	52.5		71.6			53.3					
Eh Redox		mV	28.6	24.8		80.6			5.90					
Sample Colour			Brown	Brown		Brown			Brown					
Sample Odour			N/A	N/A		N/A			N/A					
Laboratory Analysis	*(Trigger Level)*	Units												
Chloride		mg/l	For previous water results please refer to Round Monitoring Excel File.	For previous water results please refer to Round Monitoring Excel File.		37.4			27.6					
Fluoride		mg/l				0.10			0.08					
Phosphate (Ortho) PO4		mg/l				0.49			0.93					
Sulphate		mg/l				19.8			16.7					
DOC		mg/l				< 2.00			< 2.00					
TOC (Total Organic Carbon)		mg/l				5.27			30.60					
Arsenic		mg/l				< 0.007			< 0.007					
Boron		mg/l				< 0.200			< 0.200					
Barium		mg/l				0.0179			0.0200					
Calcium		mg/l				43.8			34.3					
Cadmium		mg/l				< 0.0008			< 0.0008					
Chromium		mg/l				< 0.001			< 0.001					
Copper		mg/l				< 0.008			< 0.008					
Mercury		mg/l				< 0.0001			< 0.0001					
Magnesium		mg/l				2.46			2.43					
Manganese		mg/l				0.044			0.017					
Molybdenum		mg/l				< 0.0010			< 0.0010					
Sodium		mg/l				17.5			16.3					
Nickel		mg/l				0.0047			0.1150					
Antimony		mg/l				< 0.003			< 0.003					
Selenium		mg/l				< 0.006			< 0.006					
Zinc		mg/l				< 0.002			< 0.002					
Total TPH (C10-C40)		mg/l				< 25.0			< 25.0					
Total Phenol (Sum of 4 specific phenols)		mg/l				< 0.01			< 0.01					
Total PAH		mg/l				< 0.20			< 0.20					
PCB (7 Congeners)		mg/l				< 1.00			< 1.00					
Ammoniacal Nitrogen		mg/l				< 0.02			< 0.02					
BOD (Biochemical Oxygen Demand)		mg/l				< 4.00			< 4.00					
COD (Chemical Oxygen Demand)		mg/l				7.4			7.6					
Total Dissolved Solids		mg/l				190			170					
Suspended Solids		mg/l				19000			12000					
TON (Total Oxidisable Nitrogen)		mg/l				3.75			1.81					

Quarterly testing | Denotes Not Required | (approx) = values below Limit of Detection

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H.H. & D.E. Drew Limited

Hurn Court Farm Quarry

Hurn, Dorset

Application for Waste Recovery Permit
Site Restoration Using Imported Inert Infill

Hydrogeological Risk Assessment

Version 3
27th May 2020

Appendix 6 Summary Data, Battersea Power Station

BCL HYDRO
BCL Consultant Hydrogeologists Limited

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email: info@bclhydro.co.uk, web: http://www.bclhydro.co.uk
Registered Office: 33, Wolverhampton Road, Cannock, West Midlands, WV11 1AP
Registered in England & Wales. Company Registration Number: 4043373

mg/l leach 10:1	BH02B	BH03	BH01	BH04	TP11	TP13	TP16	TP18	TP20	TP21	TP22	TP01	TP02	TP04	TP06	TP07	TP08	TP09	TP11	TP10
Arsenic	0.019	0.006	0.005	0.004	0.004	0.009	0.005	0.008	0.005	0.004	0.006	0.003	0.005	0.002	0.002	0.002	0.001	0.023	0.00317	0.00437
Barium	0.13	0.12	0.14	0.08	0.14	0.11	0.29	0.15	0.16	0.23	0.25	0.27	0.11	0.1	0.09	0.09	0.09	0.13	0.0299	0.0236
Cadmium	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Chromium	0.005	0.001	0.01	0.008	0.018	0.011	0.007	0.004	0.004	0.022	0.007	0.005	0.012	0.02	0.016	0.01	0.025	0.002	0.00171	0.00234
Copper	0.019	0.004	0.013	0.009	0.013	0.019	0.017	0.013	0.01	0.014	0.012	0.005	0.004	0.007	0.007	0.006	0.027	0.007	0.0108	0.00764
Mercury	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0000247	0.0000353
Molybdenum	0.01	0.019	0.021	0.011	0.028	0.006	0.008	0.03	0.018	0.025	0.009	0.009	0.009	0.005	0.009	0.007	0.006	0.004	0.00597	0.0054
Nickel	0.004	0.003	0.002	0.002	0.001	0.002	0.005	0.002	0.003	0.003	0.002	0.002	0.001	0.002	0.001	0.001	0.006	0.002	0.00196	0.00137
Lead	0.019	0.004	0.002	0.002	0.001	0.004	0.034	0.007	0.008	0.027	0.006	0.002	0.001	0.002	0.001	0.001	0.001	0.002	0.00126	0.00195
Antimony	0.009	0.005	0.027	0.008	0.056	0.014	0.006	0.011	0.01	0.01	0.008	0.004	0.01	0.014	0.009	0.014	0.005	0.016	0.0114	0.00798
Selenium	0.003	0.004	0.002	0.002	0.005	0.002	0.001	0.002	0.002	0.001	0.001	0.001	0.003	0.002	0.001	0.001	0.001	0.004	0.00159	0.00127
Zinc	0.021	0.013	0.03	0.016	0.017	0.013	0.134	0.026	0.048	0.073	0.078	0.095	0.006	0.025	0.01	0.008	0.014	0.025	0.00296	0.00171
Chloride	13	4.7	5.2	1.3	2.1	1.6	1.6	4	1.7	1.9	6.7	3.1	1.8	3.6	2.6	2.4	4.2	1.5	2	2
Fluoride	0.4	0.6	0.7	0.5	1	0.4	0.6	0.6	0.6	0.8	0.6	0.6	0.6	0.3	0.3	0.4	3.6	0.4	0.5	0.561
Sulphate	72.3	158.2	174.8	245.8	53.2	146.9	11.3	160.4	28.9	59	30.4	22.2	545.5	78.6	103.6	144.4	60.8	58	203	83.4
Cadmium	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Chloride	13	4.7	2.6	0.65	1.05	0.8	0.8	2	0.85	0.95	6.7	3.1	0.9	3.6	2.6	1.2	4.2	0.75	1	1
Flouride	0.4	0.6	0.7	0.5	1	0.4	0.6	0.6	0.6	0.8	0.6	0.6	0.6	0.3	0.3	0.4	3.6	0.4	0.025	0.561
Mercury	0.0001	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.0000247	0.0000353
Nickel	0.004	0.003	0.002	0.001	0.0005	0.002	0.005	0.002	0.003	0.003	0.002	0.002	0.0005	0.001	0.0005	0.0005	0.006	0.002	0.00196	0.00137
	TP07	TP07	TP09	TP23	TP24	TP17	TP18	TP19	TP20	TP12	TP13	TP04	TP03	TP21	TP22	TP08	TP01	TP02	TP14	TP15
Arsenic	0.0049	0.00169	0.00504	0.00512	0.00501	0.0157	0.00762	0.00536	0.00486	0.00385	0.00565	0.00201	0.00377	0.00474	0.00458	0.00363	0.00513	0.00697	0.00352	0.00318
Barium	0.0221	0.0391	0.0234	0.0239	0.0231	0.0153	0.02	0.0161	0.0171	0.0269	0.0098	0.0453	0.0211	0.0261	0.0256	0.0256	0.0229	0.033	0.0322	0.0273
Cadmium	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Chromium	0.0032	0.00194	0.00286	0.00239	0.0034	0.00189	0.00243	0.00213	0.00476	0.00202	0.00309	0.00171	0.00236	0.00214	0.0016	0.00237	0.00245	0.00379	0.00372	0.00357
Copper	0.00713	0.00968	0.00971	0.00933	0.00951	0.0114	0.012	0.0105	0.0063	0.0123	0.0106	0.00708	0.00658	0.0111	0.0105	0.00778	0.00829	0.0125	0.00381	0.00375
Mercury	4.55E-05	0.0000163	0.0000628	0.0000376	0.0000175	0.0000154	0.0000487	0.0000204	0.00001	0.0000384	0.00002	0.0000182	0.0000193	0.0000564	0.0000466	0.000091	0.0000235	0.0000823	0.00001	0.0000111
Molybdenum	0.0058	0.00527	0.0211	0.00602	0.00601	0.00505	0.00499	0.00253	0.00457	0.00675	0.00268	0.0118	0.00376	0.00538	0.00534	0.00816	0.00427	0.00437	0.00332	0.00297
Nickel	0.00142	0.00399	0.00196	0.00158	0.00176	0.0039	0.00133	0.00119	0.00146	0.00203	0.000929	0.00455	0.00181	0.00189	0.00199	0.00198	0.00193	0.00154	0.00221	0.0019
Lead	0.00185	0.00165	0.00504	0.00251	0.00137	0.001	0.00607	0.00358	0.000216	0.00318	0.00342	0.000153	0.00322	0.00471	0.00473	0.00126	0.00263	0.00417	0.000924	0.00244
Antimony	0.00737	0.00839	0.00809	0.00699	0.00905	0.00542	0.00615	0.0108	0.0134	0.00734	0.00681	0.00697	0.00325	0.00556	0.00643	0.0115	0.00763	0.0128	0.00791	0.00694
Selenium	0.00161	0.000933	0.00204	0.00163	0.00178	0.0016	0.00201	0.00074	0.00096	0.00162	0.000837	0.00218	0.00137	0.00168	0.00109	0.00251	0.000766	0.00128	0.00154	0.00139
Zinc	0.00199	0.0116	0.00408	0.0026	0.00174	0.00319	0.00428	0.00393	0.00041	0.00835	0.00374	0.0117	0.00457	0.00477	0.00734	0.00435	0.00371	0.00436	0.00289	0.00399
Chloride	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2.03	3.45	2	2	2
Fluoride	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.702	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Sulphate	78.4	514	128	67.4	199	22.4	49.4	17.6	216	139	7.24	516	80.3	161	162	194	199	96.7	336	261
Cadmium	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
Chloride	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2.03	3.45	1	1	1
Flouride	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.702	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
Mercury	4.55E-05	0.0000163	0.0000628	0.0000376	0.0000175	0.0000154	0.0000487	0.0000204	0.000005	0.0000384	0.00002	0.0000182	0.0000193	0.0000564	0.0000466	0.000091	0.0000235	0.0000823	0.000005	0.0000111
Nickel	0.00142	0.00399	0.00196	0.00158	0.00176	0.0039	0.00133	0.00119	0.00146	0.00203	0.000929	0.00455	0.00181	0.00189	0.00199	0.00198	0.00193	0.00154	0.00221	0.0019

H.H. & D.E. Drew Limited

Hurn Court Farm Quarry

Hurn, Dorset

Application for Waste Recovery Permit
Site Restoration Using Imported Inert Infill

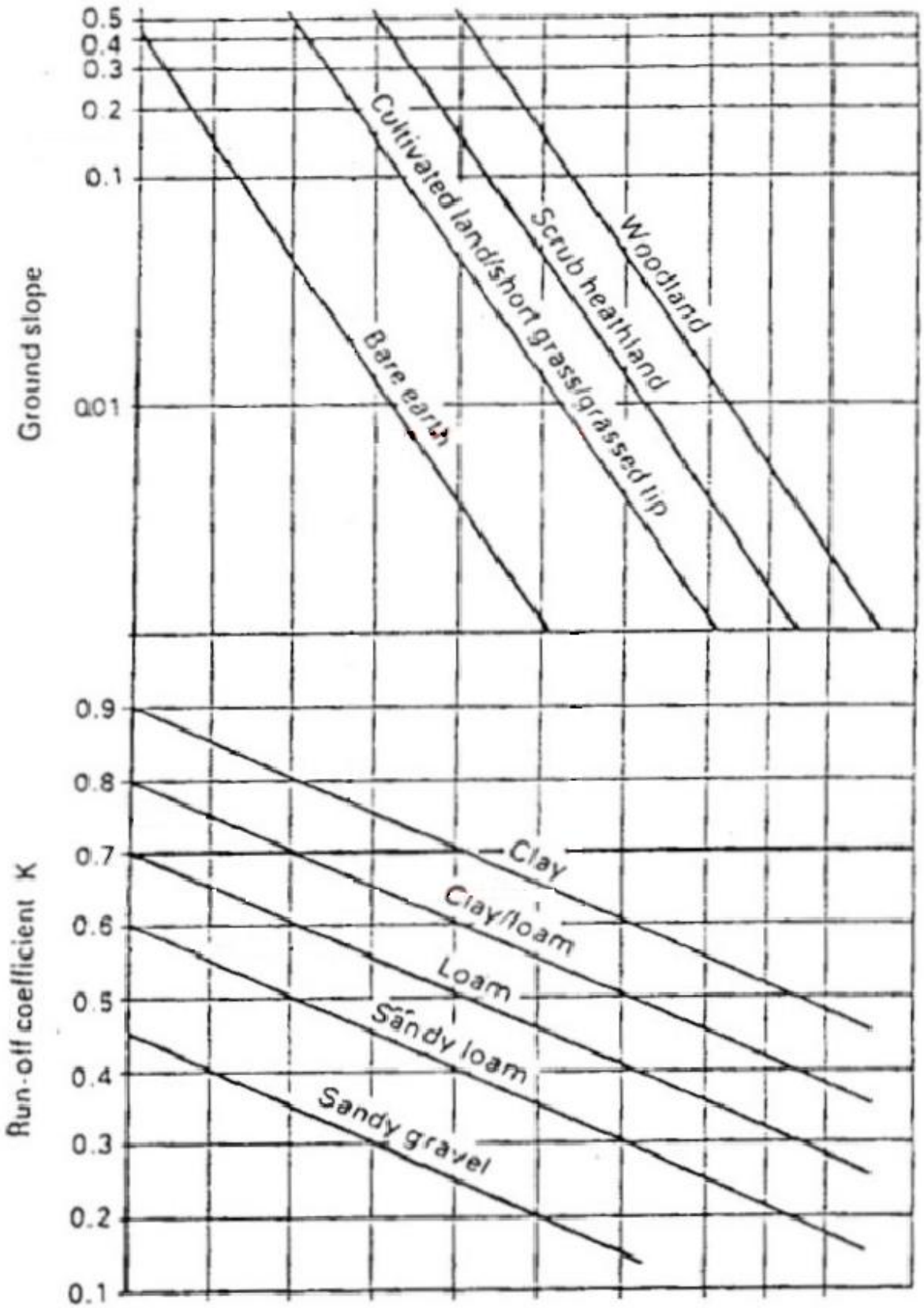
Hydrogeological Risk Assessment

Version 3
27th May 2020

Appendix 7 NCB Nomogram

BCL HYDRO
BCL Consultant Hydrogeologists Limited

Technology Centre, Wolverhampton Science Park, Glashier Drive, Wolverhampton
West Midlands, WV10 9RU. Tel: 01902 824111, Fax: 01902 824112
email: info@bclhydro.co.uk, web: http://www.bclhydro.co.uk
Registered Office: 33, Wolverhampton Road, Cannock, West Midlands, WV11 1AP
Registered in England & Wales. Company Registration Number: 4043373


Ground slope
0.5
0.4
0.3
0.2
0.1
0.01
Cultivated land/short grass/grassed up
Scrub heathland
Woodland
Bare earth
Run-off coefficient K
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
Clay
Clay/loam
Loam
Sandy loam
Sandy gravel

H.H. & D.E. Drew Limited

Hurn Court Farm Quarry

Hurn, Dorset

Application for Waste Recovery Permit
Site Restoration Using Imported Inert Infill

Hydrogeological Risk Assessment

Version 3
27th May 2020

Appendix 8 HRA1 Results

BCL HYDRO
BCL Consultant Hydrogeologists Limited

Technology Centre, Wolverhampton Science Park, Glashier Drive, Wolverhampton
West Midlands, WV10 9RU. Tel: 01902 824111, Fax: 01902 824112
email: info@bclhydro.co.uk, web: http://www.bclhydro.co.uk
Registered Office: 33, Wolverhampton Road, Cannock, West Midlands, WV11 1AP
Registered in England & Wales. Company Registration Number: 4043373

IHRA1 Surface Breajout

Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0
86	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0
128	0	0	0	0	0	0	0
141	0	0	0	0	0	0	0
156	0	0	0	0	0	0	0
172	0	0	0	0	0	0	0
190	0	0	0	0	0	0	0
210	0	0	0	0	0	0	0
232	0	0	0	0	0	0	0
256	0	0	0	0	0	0	0
282	0	0	0	0	0	0	0
300	0	0	0	0	0	0	0
312	0	0	0	0	0	0	0
344	0	0	0	0	0	0	0
380	0	0	0	0	0	0	0
420	0	0	0	0	0	0	0
464	0	0	0	0	0	0	0
512	0	0	0	0	0	0	0
565	0	0	0	0	0	0	0
624	0	0	0	0	0	0	0
689	0	0	0	0	0	0	0
761	0	0	0	0	0	0	0
840	0	0	0	0	0	0	0
928	0	0	0	0	0	0	0
1000	0	0	0	0	0	0	0
1024	0	0	0	0	0	0	0
1131	0	0	0	0	0	0	0
1249	0	0	0	0	0	0	0
1379	0	0	0	0	0	0	0
1523	0	0	0	0	0	0	0
1681	0	0	0	0	0	0	0
1856	0	0	0	0	0	0	0
2050	0	0	0	0	0	0	0
2263	0	0	0	0	0	0	0
2499	0	0	0	0	0	0	0
2759	0	0	0	0	0	0	0
3046	0	0	0	0	0	0	0
3363	0	0	0	0	0	0	0
3714	0	0	0	0	0	0	0
4100	0	0	0	0	0	0	0
4527	0	0	0	0	0	0	0
4999	0	0	0	0	0	0	0
5519	0	0	0	0	0	0	0
6094	0	0	0	0	0	0	0
6728	0	0	0	0	0	0	0
7428	0	0	0	0	0	0	0
8202	0	0	0	0	0	0	0
9056	0	0	0	0	0	0	0
9999	0	0	0	0	0	0	0
11039	0	0	0	0	0	0	0
12189	0	0	0	0	0	0	0
13458	0	0	0	0	0	0	0
14859	0	0	0	0	0	0	0
16406	0	0	0	0	0	0	0
18114	0	0	0	0	0	0	0
20000	0	0	0	0	0	0	0

IHRA1 Surface Breajout

Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
1	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
2	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
3	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
4	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
5	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
6	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
7	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
8	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
9	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
11	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
13	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
14	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
16	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
17	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
19	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
21	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
23	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
26	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
28	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
30	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
32	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
35	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
39	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
43	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
47	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
52	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
57	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
64	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
70	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
78	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
86	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
95	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
100	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
105	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
116	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
128	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
141	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
156	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
172	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
190	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
210	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
232	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
256	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
282	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
300	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
312	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
344	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
380	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
420	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
464	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
512	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
565	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
624	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
689	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
761	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
840	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
928	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
1000	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
1024	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
1131	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
1249	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
1379	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
1523	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
1681	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
1856	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
2050	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
2263	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
2499	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
2759	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
3046	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
3363	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
3714	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
4100	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
4527	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
4999	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
5519	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
6094	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
6728	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
7428	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
8202	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
9056	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
9999	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
11039	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
12189	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
13458	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
14859	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
16406	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
18114	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10
20000	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10	1.00E-10

iHRA1 Leakage

Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	52426.7	52426.7	52426.7	52426.7	52426.7	52426.7	52426.7
1	52426.7	52426.7	52426.7	52426.7	52426.7	52426.7	52426.7
2	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
3	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
5	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
6	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
7	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
8	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
9	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
10	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
11	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
13	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
14	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
16	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
17	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
19	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
21	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
23	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
26	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
28	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
30	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
32	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
35	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
39	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
43	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
47	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
52	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
57	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
64	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
70	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
78	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
86	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
95	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
100	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
105	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
116	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
128	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
141	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
156	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
172	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
190	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
210	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
232	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
256	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
282	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
300	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
312	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
344	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
380	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
420	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
464	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
512	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
565	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
624	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
689	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
761	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
840	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
928	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
1000	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
1024	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
1131	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
1249	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
1379	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
1523	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
1681	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
1856	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
2050	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
2263	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
2499	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
2759	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
3046	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
3363	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
3714	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
4100	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
4527	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
4999	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
5519	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
6094	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
6728	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
7428	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
8202	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
9056	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
9999	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
11039	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
12189	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
13458	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
14859	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
16406	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
18114	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4	35457.4
20000	354574	354574	354574	354574	354574	354574	354574

iHRA1 Maximum Head

Maximum Head [m]	Probability
0.778412	1
0.915172	0.979592
0.968403	0.959184
1.01384	0.938776
1.05725	0.918367
1.11786	0.897959
1.16631	0.877551
1.2079	0.857143
1.24762	0.836735
1.2733	0.816327
1.29661	0.795918
1.31831	0.77551
1.34906	0.755102
1.37356	0.734694
1.39712	0.714286
1.41919	0.693878
1.4467	0.673469
1.46245	0.653061
1.48414	0.632653
1.50726	0.612245
1.52156	0.591837
1.54604	0.571429
1.56571	0.55102
1.59019	0.530612
1.60583	0.510204
1.63516	0.489796
1.66447	0.469388
1.69471	0.44898
1.72466	0.428571
1.74355	0.408163
1.77089	0.387755
1.79586	0.367347
1.81688	0.346939
1.85617	0.326531
1.88957	0.306122
1.92656	0.285714
1.96345	0.265306
2.01431	0.244898
2.05308	0.22449
2.09358	0.204082
2.14317	0.183673
2.17493	0.163265
2.22583	0.142857
2.26326	0.122449
2.29483	0.102041
2.35812	0.0816327
2.4232	0.0612245
2.52158	0.0408163
2.60589	0.0204082
2.73901	0

iHRA1 Source	Species	RWQS (mg/l)					
	NH3-	0.5					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0.0793732	0.0981072	0.107487	0.145959	0.193047	0.204612	0.233149
1	0.0769153	0.0952529	0.104197	0.141477	0.187069	0.198791	0.225687
2	0.0745335	0.0924585	0.101264	0.137323	0.181225	0.193106	0.219035
3	0.0602502	0.0751351	0.0819426	0.111564	0.146842	0.157258	0.178434
4	0.0487041	0.0605817	0.0665527	0.0908645	0.119791	0.128235	0.144316
5	0.0393707	0.0495544	0.0540409	0.0737947	0.0975948	0.104601	0.1171
6	0.0318259	0.0405977	0.0437364	0.0599909	0.0793403	0.0853861	0.0957349
7	0.0257269	0.0329052	0.0354755	0.048628	0.0646945	0.0693424	0.0793705
8	0.0209011	0.0263238	0.0289509	0.0395155	0.0529029	0.0568275	0.0658157
9	0.0168412	0.0212866	0.0235508	0.0321313	0.0430917	0.0468159	0.0545758
10	0.0135897	0.017298	0.0191616	0.0261063	0.0352066	0.0383309	0.0452553
11	0.0109854	0.0140063	0.0155234	0.0211263	0.0288138	0.0313547	0.0370804
13	0.00705883	0.00919068	0.0101592	0.0139514	0.0193118	0.0211902	0.0253705
14	0.00565546	0.00740082	0.00818041	0.0113236	0.0157752	0.0173902	0.0210234
16	0.00364262	0.00478274	0.00529614	0.00747295	0.0107122	0.0118145	0.01436
17	0.00294199	0.00385061	0.004272	0.00606858	0.00876968	0.0097562	0.0117763
19	0.0019191	0.00252188	0.00276297	0.00398595	0.0059335	0.00661109	0.00811701
21	0.00125185	0.00162237	0.00179282	0.0026341	0.00400206	0.00448222	0.00556157
23	0.000804574	0.00103626	0.00116486	0.00175049	0.00272256	0.00306104	0.00380552
26	0.000425798	0.000532509	0.00060512	0.000937423	0.00152883	0.0017201	0.00216913
28	0.000272845	0.000342451	0.000391112	0.000618726	0.0010405	0.0011795	0.00147562
30	0.000174174	0.000219246	0.000251724	0.00040477	0.000706808	0.000808449	0.00100849
32	0.000111186	0.000141053	0.000161992	0.000267164	0.000479663	0.000553905	0.000689591
35	5.76273E-05	7.12401E-05	8.31189E-05	0.000143031	0.00026822	0.00031271	0.000390585
39	2.33548E-05	2.94138E-05	3.43047E-05	6.21316E-05	0.00012483	0.000145711	0.000183517
43	9.46509E-06	1.22115E-05	1.42274E-05	2.71739E-05	5.80387E-05	6.85392E-05	8.73174E-05
47	3.83755E-06	5.05581E-06	5.93424E-06	1.18284E-05	2.67127E-05	3.23531E-05	4.15457E-05
52	1.24946E-06	1.66977E-06	1.96304E-06	4.20413E-06	1.02573E-05	1.25308E-05	1.64175E-05
57	4.07402E-07	5.44629E-07	6.51446E-07	1.48869E-06	3.97372E-06	4.86799E-06	6.48766E-06
64	8.45314E-08	1.12926E-07	1.37325E-07	3.51999E-07	1.03856E-06	1.32362E-06	1.76841E-06
70	2.15585E-08	2.92493E-08	3.62678E-08	1.01794E-07	3.25906E-07	4.31709E-07	5.83477E-07
78	3.49881E-09	4.86268E-09	6.14587E-09	1.91012E-08	7.10869E-08	9.70511E-08	1.31392E-07
86	5.7144E-10	8.12856E-10	1.04477E-09	3.60586E-09	1.53479E-08	2.15475E-08	2.98266E-08
95	7.49196E-11	1.08448E-10	1.39975E-10	5.54731E-10	2.76374E-09	3.99652E-09	5.59276E-09
100	2.37215E-11	3.50628E-11	4.60281E-11	1.96275E-10	1.06691E-09	1.57412E-09	2.21008E-09
105	7.51087E-12	1.13364E-11	1.53055E-11	6.99652E-11	4.09052E-10	6.20003E-10	8.68943E-10
116	6.18301E-13	9.52256E-13	1.33746E-12	7.13921E-12	4.92971E-11	7.72607E-11	1.13268E-10
128	3.96188E-14	6.32725E-14	9.27957E-14	5.87784E-13	4.99501E-12	8.22908E-12	1.23598E-11
141	2.03804E-15	3.4321E-15	5.15554E-15	3.98888E-14	4.16494E-13	7.21448E-13	1.11751E-12
156	6.60185E-17	1.1685E-16	1.8644E-16	1.7563E-15	2.41721E-14	4.1912E-14	7.09059E-14
172	1.70803E-18	3.23473E-18	5.38289E-18	6.25536E-17	1.11933E-15	2.09945E-15	3.77719E-15
190	2.77563E-20	5.69115E-20	9.87747E-20	1.47196E-18	3.65058E-17	7.16293E-17	1.39465E-16
210	2.90459E-22	6.31303E-22	1.17643E-21	2.28799E-20	8.00691E-19	1.67909E-18	3.56922E-18
232	1.93677E-24	4.51092E-24	8.9966E-24	2.35364E-22	1.20479E-20	2.72554E-20	6.20193E-20
256	7.89194E-27	2.00927E-26	4.35671E-26	1.61593E-24	1.22331E-22	3.09677E-22	7.78432E-22
282	2.02829E-29	5.8964E-29	1.35174E-28	7.27133E-27	8.46306E-25	2.42131E-24	6.63378E-24
300	0.00E+00	1.03086E-30	2.44857E-30	1.71983E-28	2.70588E-26	8.39509E-26	2.44939E-25
312	0.00E+00	0.00E+00	0	1.41118E-29	2.72582E-27	8.92637E-27	2.71596E-26
344	0.00E+00	0.00E+00	0.00E+00	0	5.99802E-30	2.26503E-29	7.70717E-29
380	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0	0
420	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0	0
464	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0	0
512	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0
565	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
624	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
689	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
761	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
840	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
928	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1000	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1024	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1131	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1249	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1379	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1523	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1681	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
1856	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2050	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2263	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2499	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
2759	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3046	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3363	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3714	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4100	0	0	0	0.00E+00	0.00E+00	0.00E+00	0.00E+00
4527	0	0	0	0	0.00E+00	0.00E+00	0.00E+00
4999	0	0	0	0	0.00E+00	0.00E+00	0.00E+00
5519	0	0	0	0	0.00E+00	0.00E+00	0.00E+00
6094	0	0	0	0	0	0.00E+00	0.00E+00
6728	0	0	0	0	0	0	0.00E+00
7428	0	0	0	0	0	0	0
8202	0	0	0	0	0	0	0
9056	0	0	0	0	0	0	0
9999	0	0	0	0	0	0	0
11039	0	0	0	0	0	0	0
12189	0	0	0	0	0	0	0
13458	0	0	0	0	0	0	0
14859	0	0	0	0	0	0	0
16406	0	0	0	0	0	0	0
18114	0	0	0	0	0	0	0
20000	0	0	0	0	0	0	0

iHRA1 Source	Species	RWQS (mg/l)					
	As	0.01					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0.0147361	0.0167929	0.0178751	0.0219939	0.0264	0.0277938	0.0301431
1	0.0147162	0.0167653	0.0178444	0.0219454	0.0263389	0.0277209	0.0300574
2	0.0146964	0.0167378	0.0178138	0.021897	0.0262686	0.0276481	0.029972
3	0.014563	0.0165527	0.0176079	0.0215722	0.0257996	0.027161	0.0293623
4	0.0144307	0.0163855	0.0173975	0.0212659	0.0253821	0.0266868	0.028752
5	0.0142997	0.0162215	0.0171784	0.0209386	0.0249434	0.0262123	0.0281906
6	0.0141699	0.0160564	0.016974	0.0206404	0.0245123	0.0257275	0.0277005
7	0.0140412	0.0158679	0.0167824	0.0203343	0.024103	0.0252254	0.0272047
8	0.0139138	0.0157011	0.0165937	0.0200373	0.0236922	0.0247938	0.0266778
9	0.0137874	0.0155265	0.0164071	0.01974	0.0232902	0.0243696	0.0261611
10	0.0136623	0.0153588	0.0162227	0.0194449	0.0229201	0.0239527	0.0256545
11	0.0135382	0.0151868	0.0160328	0.0191606	0.0225082	0.0234844	0.0251965
13	0.0132935	0.0148385	0.015639	0.0186325	0.0217446	0.0226646	0.0242543
14	0.0131683	0.0146882	0.0154422	0.0183485	0.0213457	0.0222661	0.0237921
16	0.0129254	0.0143849	0.0150664	0.0177928	0.0206159	0.0214733	0.0228938
17	0.0128113	0.014227	0.0148925	0.0175278	0.0202516	0.0211198	0.0224575
19	0.0125856	0.0139165	0.0145499	0.0170237	0.0196054	0.0203696	0.0216097
21	0.0123581	0.0136127	0.014189	0.0165199	0.0189327	0.0196712	0.020818
23	0.0121347	0.0133156	0.0138491	0.0160234	0.0182888	0.0189581	0.0200976
26	0.0118072	0.012882	0.0133826	0.0152977	0.0173692	0.0179827	0.0190138
28	0.0115938	0.0125923	0.0130602	0.0148557	0.0167489	0.017316	0.0183657
30	0.0113842	0.012327	0.0127391	0.0144218	0.0161763	0.0166987	0.0177057
32	0.0111949	0.0120566	0.0124434	0.0140249	0.0156519	0.0161482	0.0170981
35	0.0108767	0.0116642	0.012005	0.0134069	0.0148712	0.015364	0.0162258
39	0.010487	0.0111523	0.0114509	0.0126488	0.013923	0.0143642	0.0150676
43	0.0101113	0.0106286	0.0108946	0.0119067	0.0130382	0.0134527	0.0140266
47	0.00974248	0.0101269	0.0103494	0.0112216	0.0122127	0.0125882	0.0130263
52	0.00926487	0.00952944	0.0096934	0.0104211	0.0113093	0.011594	0.0120329
57	0.00876712	0.00895635	0.00905578	0.0096719	0.0104945	0.0106931	0.0111011
64	0.0079679	0.00809189	0.00820183	0.00872521	0.00943654	0.0096231	0.00989764
70	0.00718062	0.00735278	0.00748631	0.00800242	0.00867683	0.00883409	0.00904219
78	0.00617399	0.00640991	0.00655853	0.00713294	0.00778493	0.00794544	0.00810494
86	0.00528378	0.0055794	0.00572314	0.00636774	0.00699775	0.00717396	0.00738331
95	0.00443917	0.00477846	0.00488436	0.00558955	0.00626109	0.00641615	0.00675113
100	0.00401167	0.00435553	0.00447248	0.00520412	0.00589193	0.0060746	0.00643612
105	0.00362534	0.00396759	0.00409742	0.00483943	0.0055419	0.00574706	0.0061424
116	0.0029075	0.00323079	0.00338274	0.00412914	0.0048532	0.00507352	0.0055217
128	0.00229205	0.00258699	0.00274652	0.00345935	0.00421714	0.00444555	0.00493917
141	0.00176319	0.0020348	0.00218818	0.00286022	0.00362687	0.00387277	0.00435754
156	0.00130679	0.00153375	0.00168414	0.00230346	0.00304888	0.00326449	0.00377765
172	0.00095094	0.00113772	0.00127085	0.00182044	0.00253482	0.00275544	0.00327984
190	0.000666246	0.00081512	0.000924491	0.00139987	0.00204966	0.00227504	0.00278626
210	0.000450008	0.000562386	0.000649546	0.00104504	0.00161686	0.00183967	0.00231916
232	0.000287847	0.000374197	0.000442525	0.000757232	0.00124959	0.00145741	0.0019141
256	0.00017847	0.000239334	0.000290306	0.000529429	0.000940918	0.00113475	0.00154431
282	0.000105922	0.000147232	0.000183823	0.000362365	0.000696789	0.000859522	0.00122163
300	7.34395E-05	0.000105178	0.000134112	0.000278293	0.000564558	0.000708358	0.00104138
312	5.78243E-05	8.40504E-05	0.000108556	0.000233522	0.000490659	0.000623493	0.000936251
344	3.05675E-05	4.65004E-05	6.16819E-05	0.000146284	0.000338997	0.000445858	0.000704926
380	1.49212E-05	0.000023859	3.26416E-05	8.64321E-05	0.000222887	0.000305868	0.000512258
420	6.72572E-06	1.12152E-05	1.60623E-05	4.83876E-05	0.000140281	0.000201227	0.000359276
464	2.79828E-06	4.94177E-06	7.28873E-06	2.55398E-05	8.38774E-05	0.000126956	0.000243198
512	1.06949E-06	2.0171E-06	3.12364E-06	1.26008E-05	4.79004E-05	7.68132E-05	0.000158416
565	3.69783E-07	7.49495E-07	1.23037E-06	5.84217E-06	2.58807E-05	4.41049E-05	9.81894E-05
624	1.13372E-07	2.49019E-07	4.36115E-07	2.46854E-06	1.29948E-05	2.37827E-05	5.76519E-05
689	3.08211E-08	7.40886E-08	1.38797E-07	9.53071E-07	6.11362E-06	1.20437E-05	3.20661E-05
761	7.2824E-09	1.93451E-08	3.91735E-08	3.32525E-07	2.63898E-06	5.66803E-06	1.67433E-05
840	1.49549E-09	4.43297E-09	9.77669E-09	1.04729E-07	1.04979E-06	2.47391E-06	8.25711E-06
928	2.56432E-10	8.58856E-10	2.06562E-09	2.89163E-08	3.76671E-07	9.71054E-07	3.76158E-06
1000	6.05896E-11	2.24255E-10	5.77871E-10	1.00889E-08	1.63109E-07	4.51799E-07	1.97695E-06
1024	3.74576E-11	1.43334E-10	3.77941E-10	7.10246E-09	1.23401E-07	3.5009E-07	1.5954E-06
1131	4.38917E-12	1.9484E-11	5.69217E-11	1.48292E-09	3.55748E-08	1.12292E-07	6.13321E-07
1249	4.1257E-13	2.15731E-12	7.05687E-12	2.64452E-10	8.99284E-09	3.20443E-08	2.13709E-07
1379	3.04919E-14	1.90964E-13	7.07526E-13	3.93444E-11	1.97003E-09	8.0495E-09	6.68953E-08
1523	1.7023E-15	1.30862E-14	5.53736E-14	4.79833E-12	3.67153E-10	1.7425E-09	1.84776E-08
1681	7.17886E-17	6.91437E-16	3.38292E-15	4.76575E-13	5.79323E-11	3.25061E-10	4.50373E-09
1856	2.15344E-18	2.66249E-17	1.52989E-16	3.69022E-14	7.54112E-12	5.06172E-11	9.43053E-10
2050	4.41433E-20	7.19866E-19	4.93231E-18	2.16213E-15	7.86705E-13	6.44082E-12	1.66639E-10
2263	6.18374E-22	1.36661E-20	1.12967E-19	9.59644E-17	6.57733E-14	6.69722E-13	2.4848E-11
2499	5.46364E-24	1.69098E-22	1.74487E-21	3.05549E-18	4.20639E-15	5.45377E-14	3.01691E-12
2759	2.98438E-26	1.33859E-24	1.76344E-23	6.84158E-20	2.03391E-16	3.44139E-15	2.95602E-13
3046	9.48991E-29	6.41097E-27	1.09942E-25	1.03116E-21	7.18019E-18	1.62989E-16	2.27556E-14
3363	0	1.75122E-29	4.03143E-28	1.00244E-23	1.78707E-19	5.61212E-18	1.33987E-15
3714	0	0	0	5.88814E-26	2.99304E-21	1.34641E-19	5.82249E-17
4100	0	0	0	2.06667E-28	3.33414E-23	2.22686E-21	1.85075E-18
4527	0	0	0	0	2.30356E-25	2.38224E-23	4.07849E-20
4999	0	0	0	0	9.4215E-28	1.57976E-25	6.0123E-22
5519	0	0	0	0	2.20274E-30	6.2902E-28	5.77208E-24
6094	0	0	0	0	0	1.39605E-30	3.3901E-26
6728	0	0	0	0	0	0	1.17533E-28
7428	0	0	0	0	0	0	0
8202	0	0	0	0	0	0	0
9056	0	0	0	0	0	0	0
9999	0	0	0	0	0	0	0
11039	0	0	0	0	0	0	0
12189	0	0	0	0	0	0	0
13458	0	0	0	0	0	0	0
14859	0	0	0	0	0	0	0
16406	0	0	0	0	0	0	0
18114	0	0	0	0	0	0	0
20000	0	0	0	0	0	0	0

iHRA1 Source	Species	RWQS (mg/l)					
	Cl-	250					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	18.8432	23.348	25.0765	31.9802	39.738	41.6994	44.8714
1	18.2498	22.686	24.315	30.9759	38.4397	40.4212	43.5505
2	17.6937	21.9816	23.5269	30.013	37.3098	39.2073	42.321
3	14.4029	17.8262	19.1087	24.3208	30.0398	31.7794	34.0073
4	11.7242	14.4518	15.5217	19.6991	24.3715	25.7344	27.8436
5	9.54372	11.6869	12.5137	15.9209	19.779	20.91	22.7403
6	7.74667	9.43512	10.097	12.8934	16.0642	17.0243	18.6502
7	6.25778	7.62392	8.13456	10.4372	13.0441	13.8729	15.2634
8	5.05506	6.14094	6.58274	8.45454	10.5924	11.2522	12.486
9	4.08349	4.94497	5.30774	6.85353	8.65853	9.17143	10.2311
10	3.29865	3.98984	4.27623	5.52506	7.08301	7.50399	8.43152
11	2.66466	3.21361	3.43773	4.47618	5.77191	6.10139	6.92981
13	1.73881	2.07912	2.21854	2.94748	3.81728	4.09376	4.72881
14	1.3968	1.67379	1.78634	2.39048	3.12665	3.35173	3.90632
16	0.899228	1.08546	1.14284	1.55993	2.09764	2.26336	2.66562
17	0.721075	0.867427	0.918919	1.26048	1.72196	1.85375	2.20198
19	0.466197	0.551315	0.589559	0.825402	1.15522	1.25305	1.5026
21	0.304283	0.353769	0.380834	0.54046	0.77726	0.850284	1.02412
23	0.193548	0.225995	0.245134	0.35453	0.522095	0.576305	0.69687
26	0.0981875	0.114891	0.125266	0.187346	0.28627	0.323016	0.391161
28	0.0628765	0.0729609	0.0799722	0.123072	0.192326	0.219619	0.26617
30	0.0399053	0.0463889	0.0508714	0.0806222	0.129734	0.148355	0.181118
32	0.0252692	0.0294949	0.0325256	0.052854	0.0879255	0.100771	0.123243
35	0.0128191	0.0148227	0.016503	0.0278902	0.0490655	0.0567353	0.0698708
39	0.00517899	0.00593019	0.00675448	0.0119741	0.0227768	0.026293	0.0330867
43	0.00209848	0.00238012	0.00276626	0.00513936	0.010382	0.0121174	0.0154084
47	0.000832212	0.00095697	0.00112624	0.00219202	0.00473591	0.00561567	0.00717562
52	0.000256957	0.000305341	0.000367067	0.000758242	0.00178557	0.00214785	0.0027605
57	0.000079335	9.72556E-05	0.000120815	0.000265512	0.000671474	0.000820014	0.00108045
64	1.55605E-05	1.97486E-05	2.48821E-05	6.00507E-05	0.00017343	0.000213583	0.000285316
70	3.81517E-06	5.06713E-06	6.36754E-06	1.69231E-05	5.44242E-05	6.79053E-05	9.02054E-05
78	6.049E-07	8.18009E-07	1.04222E-06	3.10304E-06	1.15203E-05	1.49278E-05	1.98053E-05
86	9.47602E-08	1.29931E-07	1.71486E-07	5.74254E-07	2.42447E-06	3.27433E-06	4.45194E-06
95	1.17406E-08	1.65297E-08	2.24626E-08	8.64366E-08	4.25444E-07	5.85396E-07	8.30404E-07
100	3.69637E-09	5.27214E-09	7.18119E-09	3.04829E-08	1.61265E-07	2.27895E-07	3.26697E-07
105	1.16042E-09	1.70124E-09	2.32124E-09	1.06211E-08	6.15308E-08	8.85706E-08	1.28426E-07
116	9.0711E-11	1.37677E-10	1.92245E-10	1.03175E-09	7.17336E-09	1.07805E-08	1.65075E-08
128	5.57209E-12	8.84596E-12	1.319E-11	8.12746E-11	6.96992E-10	1.10368E-09	1.75928E-09
141	2.68002E-13	4.55109E-13	6.96623E-13	5.19523E-12	5.69637E-11	9.33256E-11	1.55582E-10
156	8.0818E-15	1.50754E-14	2.34303E-14	2.21045E-13	3.03877E-12	5.29457E-12	9.47381E-12
172	1.9436E-16	3.91964E-16	6.29515E-16	7.61283E-15	1.35632E-13	2.43748E-13	4.78698E-13
190	2.90235E-18	6.39331E-18	1.0798E-17	1.70588E-16	4.07752E-15	7.62368E-15	1.66549E-14
210	2.71327E-20	6.4917E-20	1.18855E-19	2.56731E-18	8.26606E-17	1.72208E-16	4.12415E-16
232	1.59777E-22	4.19666E-22	8.21241E-22	2.44801E-20	1.14121E-18	2.55223E-18	6.73391E-18
256	5.89129E-25	1.7248E-24	3.65364E-24	1.53205E-22	1.06429E-20	2.60633E-20	7.55465E-20
282	1.36211E-27	4.50027E-27	1.02754E-26	6.25063E-25	6.72305E-23	1.84373E-22	5.90196E-22
300	2.03919E-29	7.34624E-29	1.75534E-28	1.38598E-26	2.01837E-24	5.86754E-24	2.08811E-23
312	1.24777E-30	4.7578E-30	1.17036E-29	1.09391E-27	1.96034E-25	5.85368E-25	2.2504E-24
344	0	0	0	1.25384E-30	3.88721E-28	1.29497E-27	5.65942E-27
380	0	0	0	0	0	1.3638E-30	6.717E-30
420	0	0	0	0	0	0	0
464	0	0	0	0	0	0	0
512	0	0	0	0	0	0	0
565	0	0	0	0	0	0	0
624	0	0	0	0	0	0	0
689	0	0	0	0	0	0	0
761	0	0	0	0	0	0	0
840	0	0	0	0	0	0	0
928	0	0	0	0	0	0	0
1000	0	0	0	0	0	0	0
1024	0	0	0	0	0	0	0
1131	0	0	0	0	0	0	0
1249	0	0	0	0	0	0	0
1379	0	0	0	0	0	0	0
1523	0	0	0	0	0	0	0
1681	0	0	0	0	0	0	0
1856	0	0	0	0	0	0	0
2050	0	0	0	0	0	0	0
2263	0	0	0	0	0	0	0
2499	0	0	0	0	0	0	0
2759	0	0	0	0	0	0	0
3046	0	0	0	0	0	0	0
3363	0	0	0	0	0	0	0
3714	0	0	0	0	0	0	0
4100	0	0	0	0	0	0	0
4527	0	0	0	0	0	0	0
4999	0	0	0	0	0	0	0
5519	0	0	0	0	0	0	0
6094	0	0	0	0	0	0	0
6728	0	0	0	0	0	0	0
7428	0	0	0	0	0	0	0
8202	0	0	0	0	0	0	0
9056	0	0	0	0	0	0	0
9999	0	0	0	0	0	0	0
11039	0	0	0	0	0	0	0
12189	0	0	0	0	0	0	0
13458	0	0	0	0	0	0	0
14859	0	0	0	0	0	0	0
16406	0	0	0	0	0	0	0
18114	0	0	0	0	0	0	0
20000	0	0	0	0	0	0	0

iHRA1 Source	Species	RWQS (mg/l)					
	Cu	2					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0.0465644	0.0536199	0.0585367	0.0777285	0.0982918	0.104993	0.117581
1	0.046112	0.0530148	0.0578809	0.0767741	0.0969869	0.103626	0.115929
2	0.045664	0.0524058	0.057274	0.0758384	0.0956841	0.102276	0.1143
3	0.0425704	0.0486317	0.0531173	0.069675	0.0875354	0.0935611	0.104298
4	0.0395433	0.0452114	0.0489627	0.0640426	0.0802236	0.0851578	0.0954215
5	0.0366448	0.0417794	0.0453512	0.0588388	0.0735052	0.0777293	0.0871995
6	0.0338646	0.0387147	0.042095	0.0539083	0.0669866	0.0707971	0.0795488
7	0.0312953	0.0358224	0.0389073	0.0495421	0.0613562	0.0645116	0.0722928
8	0.0289209	0.0331869	0.0358371	0.0456608	0.056238	0.0589614	0.0658674
9	0.0268512	0.0307182	0.0331693	0.0419733	0.0515059	0.0540248	0.060017
10	0.0250834	0.0284806	0.0306042	0.0385361	0.0470336	0.0494505	0.0547508
11	0.0234319	0.026252	0.0282687	0.035377	0.0430078	0.045127	0.0495304
13	0.0203284	0.0225841	0.0241419	0.0298838	0.0361119	0.0380125	0.0416641
14	0.0188453	0.0209679	0.0223539	0.0274499	0.0330272	0.0348142	0.0384168
16	0.0161958	0.0179544	0.0190629	0.0231402	0.027835	0.0293915	0.0322209
17	0.0149792	0.0165451	0.0175403	0.021263	0.0255178	0.0270047	0.0295838
19	0.0127868	0.0141001	0.0149063	0.0180469	0.0216096	0.022617	0.0250615
21	0.0109522	0.0119522	0.012689	0.0152357	0.0182656	0.0191281	0.0211558
23	0.00929764	0.010188	0.010735	0.0128647	0.0154796	0.0163362	0.0179217
26	0.00729787	0.00796126	0.00831518	0.00996154	0.0121196	0.0127439	0.0140297
28	0.00615569	0.00672429	0.00699091	0.00842336	0.0102911	0.0108249	0.011872
30	0.0052253	0.00568562	0.00588304	0.00707188	0.00872986	0.00924901	0.0099779
32	0.00444083	0.00477791	0.00494819	0.00596262	0.0074307	0.0078756	0.00850106
35	0.00344795	0.00365544	0.00380412	0.00464169	0.00588666	0.00621667	0.0067108
39	0.00238501	0.00254137	0.00267015	0.00330545	0.00427136	0.00453512	0.00491871
43	0.00166028	0.00176656	0.00186311	0.00236695	0.00312879	0.00333074	0.00357644
47	0.00114015	0.00122779	0.00129358	0.00169246	0.00230405	0.00245106	0.0026344
52	0.000706941	0.000770667	0.000825996	0.00111204	0.00155762	0.00167532	0.0018114
57	0.000435935	0.000483935	0.000522413	0.000730032	0.00105851	0.00114808	0.00125245
64	0.000220821	0.000249865	0.000276257	0.00040537	0.000620496	0.000671523	0.000758277
70	0.000122279	0.000143244	0.000160411	0.000244806	0.000395632	0.000426428	0.00049588
78	5.58573E-05	6.79683E-05	7.67156E-05	0.000124807	0.000212548	0.000237704	0.000281477
86	2.57666E-05	3.20022E-05	3.66259E-05	6.39338E-05	0.000114712	0.000132331	0.000159775
95	1.07575E-05	1.36563E-05	1.59138E-05	3.01976E-05	5.73127E-05	6.83057E-05	8.44952E-05
100	6.58168E-06	8.53466E-06	9.96718E-06	1.98805E-05	3.92784E-05	4.73545E-05	5.93093E-05
105	4.00246E-06	5.29375E-06	6.27833E-06	0.000012978	2.68613E-05	3.27179E-05	4.16307E-05
116	1.34237E-06	1.85432E-06	2.29189E-06	5.19552E-06	1.16539E-05	0.000014581	1.91097E-05
128	4.10869E-07	5.97042E-07	7.62811E-07	1.88213E-06	4.68647E-06	6.06937E-06	0.000008369
141	1.13943E-07	1.75735E-07	2.2844E-07	6.24506E-07	1.76035E-06	2.3414E-06	3.43012E-06
156	2.59403E-08	4.26419E-08	5.68023E-08	1.76899E-07	5.67273E-07	7.88967E-07	0.000001205
172	5.35076E-09	9.26823E-09	1.27724E-08	4.62572E-08	1.67486E-07	2.44163E-07	4.03304E-07
190	9.15082E-10	1.68509E-09	2.40659E-09	1.03939E-08	4.299E-08	6.51711E-08	1.18941E-07
210	1.29516E-10	2.51837E-10	3.7941E-10	1.93998E-09	9.53465E-09	1.47956E-08	2.97573E-08
232	1.49192E-11	3.11345E-11	4.99862E-11	3.07585E-10	1.8022E-09	2.89976E-09	6.41461E-09
256	1.396E-12	3.18026E-12	5.37644E-12	4.11681E-11	2.89935E-10	5.00262E-10	1.20272E-09
282	1.07921E-13	2.68725E-13	4.87387E-13	4.69195E-12	4.07661E-11	7.59493E-11	1.96143E-10
300	1.84886E-14	4.85685E-14	9.28347E-14	1.03401E-12	1.04591E-11	2.02112E-11	5.58878E-11
312	5.70297E-15	1.54787E-14	3.0676E-14	3.78211E-13	4.20919E-12	8.36188E-12	2.41999E-11
344	2.4772E-16	7.25254E-16	1.58091E-15	2.55593E-14	3.79091E-13	7.94699E-13	2.59699E-12
380	7.27036E-18	2.31788E-17	5.59083E-17	1.25168E-15	2.51091E-14	5.6278E-14	2.12016E-13
420	1.4313E-19	5.14194E-19	1.38251E-18	4.33599E-17	1.20902E-15	3.02085E-15	1.34749E-14
464	1.88293E-21	7.82881E-21	2.39426E-20	1.06602E-18	4.30211E-17	1.21044E-16	6.50129E-16
512	1.67088E-23	8.1826E-23	2.86772E-22	1.88563E-20	1.12986E-18	3.56896E-18	2.38116E-17
565	9.16453E-26	5.32565E-25	2.12545E-24	2.18924E-22	2.04295E-20	7.30357E-20	6.10625E-19
624	2.76069E-28	1.9745E-27	9.04037E-27	1.57713E-24	2.31646E-22	9.62321E-22	1.01722E-20
689	0	4.15136E-30	2.25338E-29	6.81439E-27	1.70609E-24	8.16388E-24	1.11958E-22
761	0	0	0	1.58705E-29	7.41606E-27	4.14378E-26	7.84147E-25
840	0	0	0	0	1.89987E-29	1.25841E-28	3.39046E-27
928	0	0	0	0	0	0	7.88472E-30
1000	0	0	0	0	0	0	0
1024	0	0	0	0	0	0	0
1131	0	0	0	0	0	0	0
1249	0	0	0	0	0	0	0
1379	0	0	0	0	0	0	0
1523	0	0	0	0	0	0	0
1681	0	0	0	0	0	0	0
1856	0	0	0	0	0	0	0
2050	0	0	0	0	0	0	0
2263	0	0	0	0	0	0	0
2499	0	0	0	0	0	0	0
2759	0	0	0	0	0	0	0
3046	0	0	0	0	0	0	0
3363	0	0	0	0	0	0	0
3714	0	0	0	0	0	0	0
4100	0	0	0	0	0	0	0
4527	0	0	0	0	0	0	0
4999	0	0	0	0	0	0	0
5519	0	0	0	0	0	0	0
6094	0	0	0	0	0	0	0
6728	0	0	0	0	0	0	0
7428	0	0	0	0	0	0	0
8202	0	0	0	0	0	0	0
9056	0	0	0	0	0	0	0
9999	0	0	0	0	0	0	0
11039	0	0	0	0	0	0	0
12189	0	0	0	0	0	0	0
13458	0	0	0	0	0	0	0
14859	0	0	0	0	0	0	0
16406	0	0	0	0	0	0	0
18114	0	0	0	0	0	0	0
20000	0	0	0	0	0	0	0

iHRA1 Source	Species	RWQS (mg/l)					
	Hg	0.001					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	8.47682E-05	0.000113193	0.000142492	0.000352706	0.000644198	0.000765284	0.000891844
1	8.47682E-05	0.000113193	0.000142388	0.000351139	0.000639445	0.000759672	0.000884354
2	8.47682E-05	0.000113193	0.000142285	0.000349579	0.000634727	0.000754171	0.000876927
3	8.47682E-05	0.000113193	0.000141587	0.000339917	0.000606971	0.000715645	0.000830628
4	8.47682E-05	0.000113193	0.000140893	0.000329605	0.000580708	0.000678909	0.000790528
5	8.47682E-05	0.000113193	0.000140202	0.000320661	0.000555881	0.000644255	0.000752364
6	8.47682E-05	0.000113193	0.000139515	0.000311212	0.00053225	0.000611402	0.000716042
7	8.47682E-05	0.000113193	0.000138831	0.000302184	0.000508946	0.000578753	0.000681034
8	8.47682E-05	0.000113193	0.00013815	0.000293166	0.000486561	0.000547802	0.000646843
9	8.47682E-05	0.000113193	0.000137473	0.000284418	0.000465437	0.000521285	0.000615043
10	8.47682E-05	0.000113193	0.000136799	0.000276094	0.000444794	0.000494876	0.000585399
11	8.47682E-05	0.000113193	0.000136128	0.000268338	0.000425065	0.000470119	0.000556468
13	8.47682E-05	0.000113193	0.000134796	0.000252884	0.000386884	0.000426729	0.000501859
14	8.47682E-05	0.000113193	0.000134136	0.000245509	0.000368821	0.000407357	0.000478108
16	8.47682E-05	0.000113193	0.000132823	0.000231549	0.000337421	0.00036928	0.000432094
17	8.47682E-05	0.000113193	0.000132172	0.000224728	0.000322486	0.000350297	0.000409335
19	8.47682E-05	0.000113193	0.000130799	0.000211258	0.000294544	0.000318308	0.00036735
21	8.47682E-05	0.000113193	0.000129397	0.0001984	0.000267341	0.000287968	0.000329671
23	8.47682E-05	0.000113193	0.000127888	0.000187089	0.000244248	0.000261241	0.000297498
26	8.47682E-05	0.000113193	0.000125717	0.00017136	0.000212333	0.000226296	0.000257585
28	8.47682E-05	0.000113193	0.000124463	0.00016092	0.00019467	0.000206474	0.000233998
30	8.47682E-05	0.000113193	0.000123119	0.000151247	0.000179426	0.000188709	0.000211796
32	8.47682E-05	0.000113193	0.000121612	0.000142229	0.00016541	0.000172516	0.000190147
35	8.47682E-05	0.000113193	0.000118573	0.000129133	0.000147321	0.000152673	0.000163475
39	8.47682E-05	0.000101649	0.000106103	0.000116416	0.00012747	0.000131559	0.000137822
43	7.88236E-05	8.64942E-05	9.04808E-05	0.000104945	0.000115763	0.000117062	0.000118792
47	6.64682E-05	7.24547E-05	7.70378E-05	9.37259E-05	0.000109532	0.000113415	0.000116439
52	5.06202E-05	5.69896E-05	6.16594E-05	8.09605E-05	0.000104708	0.000111171	0.000116012
57	3.80593E-05	4.51708E-05	4.91961E-05	7.05271E-05	0.000100926	0.000108892	0.000115571
64	2.56509E-05	3.22798E-05	0.0000357	5.72893E-05	9.64476E-05	0.000106855	0.000114992
70	0.000018326	0.000024202	2.71061E-05	0.000048091	9.40044E-05	0.000105652	0.000114486
78	1.17896E-05	0.000016314	1.86965E-05	3.82849E-05	0.000089657	0.000104342	0.000113814
86	7.6119E-06	1.09602E-05	1.29756E-05	3.01962E-05	8.62375E-05	0.000102323	0.000113193
95	4.65304E-06	6.91455E-06	8.61049E-06	2.30855E-05	8.25228E-05	0.000100142	0.000113193
100	3.53983E-06	5.33312E-06	6.83704E-06	0.000019871	8.00724E-05	0.000100041	0.000112878
105	2.69296E-06	4.17394E-06	5.41592E-06	1.72336E-05	7.89331E-05	9.97145E-05	0.000112723
116	1.47561E-06	2.41743E-06	3.23196E-06	1.24058E-05	0.000077568	9.82698E-05	0.000112231
128	7.54838E-07	1.3028E-06	1.86446E-06	8.69286E-06	7.53737E-05	9.80773E-05	0.000112212
141	3.63363E-07	6.74733E-07	1.02031E-06	5.95349E-06	7.08753E-05	9.80773E-05	0.000112097
156	1.56307E-07	3.22831E-07	5.067E-07	3.8439E-06	6.55968E-05	9.75197E-05	0.000111426
172	6.35615E-08	1.43626E-07	2.4243E-07	2.38652E-06	6.04131E-05	9.75197E-05	0.000110642
190	2.30973E-08	5.77458E-08	1.05232E-07	1.4037E-06	5.51851E-05	9.57302E-05	0.000110642
210	7.5003E-09	2.09817E-08	4.20452E-08	7.77277E-07	4.99051E-05	9.41283E-05	0.000110577
232	2.17645E-09	6.8896E-09	1.51846E-08	4.06554E-07	4.46787E-05	9.17914E-05	0.000110039
256	5.64378E-10	2.01257E-09	4.93398E-09	1.9917E-07	3.95994E-05	9.13106E-05	0.000110039
282	1.30781E-10	5.38839E-10	1.47799E-09	9.23265E-08	3.47463E-05	8.91769E-05	0.000110039
300	4.75237E-11	2.18359E-10	6.4165E-10	5.41479E-08	3.17395E-05	8.85416E-05	0.000109595
312	2.42003E-11	1.19576E-10	3.70039E-10	3.79591E-08	2.98809E-05	8.85416E-05	0.000109248
344	4.00176E-12	2.37679E-11	8.52662E-11	1.47211E-08	2.54565E-05	8.85416E-05	0.0001088
380	5.33969E-13	3.90098E-12	1.61823E-11	5.11674E-09	2.12575E-05	0.00008689	0.0001088
420	5.73611E-14	5.24752E-13	2.53505E-12	1.55211E-09	1.73991E-05	8.51681E-05	0.0001088
464	4.9298E-15	5.7758E-14	3.29934E-13	4.20273E-10	1.39586E-05	8.51681E-05	0.0001088
512	3.38962E-16	5.20174E-15	3.56749E-14	1.00898E-10	1.09764E-05	8.47682E-05	0.0001088
565	1.76344E-17	3.64571E-16	3.07151E-15	2.09635E-11	8.41787E-06	8.41719E-05	0.0001088
624	6.56502E-19	1.89118E-17	2.02298E-16	3.64576E-12	6.26467E-06	8.31606E-05	0.0001088
689	1.74894E-20	7.23574E-19	1.0104E-17	5.31683E-13	4.52425E-06	8.06166E-05	0.0001088
761	3.15325E-22	1.95977E-20	3.65456E-19	6.31559E-14	3.1548E-06	8.00724E-05	0.0001088
840	3.84755E-24	3.71957E-22	9.57225E-21	6.09847E-15	2.1241E-06	8.00724E-05	0.0001088
928	2.84189E-26	4.49401E-24	1.65572E-22	4.51204E-16	1.36712E-06	7.88236E-05	0.0001088
1000	5.12379E-28	1.21193E-25	5.98861E-24	5.35991E-17	9.53303E-07	7.88236E-05	0.0001088
1024	1.34354E-28	3.63433E-26	1.98049E-24	2.64282E-17	8.45356E-07	7.88236E-05	0.0001088
1131	0	1.69232E-28	1.42662E-26	1.12374E-18	4.94712E-07	7.88236E-05	0.0001088
1249	0	0	6.18853E-29	3.41758E-20	2.73996E-07	7.80224E-05	0.0001088
1379	0	0	0	7.28626E-22	1.42902E-07	7.80224E-05	0.0001088
1523	0	0	0	1.02639E-23	6.94849E-08	7.80224E-05	0.0001088
1681	0	0	0	9.55313E-26	3.1499E-08	7.74061E-05	0.0001088
1856	0	0	0	5.37569E-28	1.31139E-08	7.74061E-05	0.0001088
2050	0	0	0	1.72373E-30	4.96423E-09	7.74061E-05	0.0001088
2263	0	0	0	0	1.70864E-09	7.74061E-05	0.0001088
2499	0	0	0	0	5.24125E-10	7.74061E-05	0.0001088
2759	0	0	0	0	1.4257E-10	7.74061E-05	0.0001088
3046	0	0	0	0	3.38769E-11	7.74061E-05	0.0001088
3363	0	0	0	0	6.92692E-12	7.74061E-05	0.0001088
3714	0	0	0	0	1.19465E-12	7.74061E-05	0.0001088
4100	0	0	0	0	1.72912E-13	7.74061E-05	0.0001088
4527	0	0	0	0	2.03822E-14	7.74061E-05	0.0001088
4999	0	0	0	0	1.91786E-15	0.000077147	0.0001088
5519	0	0	0	0	1.41906E-16	0.000077147	0.0001088
6094	0	0	0	0	7.97222E-18	0.000077147	0.0001088
6728	0	0	0	0	3.33313E-19	0.000077147	0.0001088
7428	0	0	0	0	1.00138E-20	0.000077147	0.0001088
8202	0	0	0	0	2.07694E-22	0.000077147	0.0001088
9056	0	0	0	0	2.88586E-24	0.000077147	0.0001088
9999	0	0	0	0	2.56793E-26	0.000077147	0.0001088
11039	0	0	0	0	1.40588E-28	0.000077147	0.0001088
12189	0	0	0	0	0	0.000077147	0.0001088
13458	0	0	0	0	0	0.000077147	0.0001088
14859	0	0	0	0	0	0.000077147	0.0001088
16406	0	0	0	0	0	0.000077147	0.0001088
18114	0	0	0	0	0	0.000077147	0.0001088
20000	0	0	0	0	0	0.000077147	0.0001088

iHRA1 Source	Species	RWQS (mg/l)					
	Ni	0.02					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0.0112025	0.0126831	0.0135852	0.0171801	0.0211176	0.0223561	0.0248294
1	0.0111521	0.0126212	0.0135145	0.0170687	0.0209425	0.022185	0.0246164
2	0.011102	0.0125539	0.0134442	0.016953	0.0207689	0.0220152	0.0244053
3	0.0107688	0.0121078	0.0129406	0.0161506	0.0197089	0.020795	0.022996
4	0.0104456	0.0116802	0.0124641	0.0154217	0.0187219	0.0196393	0.0215246
5	0.0101321	0.0112683	0.0119888	0.0146989	0.0177382	0.0186178	0.0203068
6	0.00982798	0.0108608	0.0115337	0.0140213	0.0168195	0.0176381	0.0192701
7	0.00953301	0.0104764	0.0110822	0.013373	0.0159651	0.0166931	0.0182374
8	0.0092469	0.0100989	0.010684	0.0127484	0.01512	0.0157527	0.0171818
9	0.00894279	0.00973826	0.0102997	0.0121566	0.0143229	0.0149434	0.0161537
10	0.0086515	0.00939047	0.00990665	0.0115911	0.0135581	0.0141806	0.0151897
11	0.00838758	0.0090551	0.00952326	0.0110773	0.012868	0.0134984	0.0142659
13	0.00784003	0.00841757	0.00878019	0.0101083	0.011583	0.0120137	0.0126411
14	0.00759667	0.00811917	0.00845727	0.0096408	0.0109878	0.0114023	0.0119706
16	0.007085	0.00753272	0.00778814	0.00877079	0.00989915	0.0103084	0.0107343
17	0.00686275	0.00723667	0.00749902	0.00836965	0.00938227	0.00979048	0.0101964
19	0.00641151	0.00671936	0.00691599	0.00761367	0.0084658	0.00881882	0.00913024
21	0.00598471	0.0062196	0.00636066	0.00693276	0.00769205	0.00794587	0.00825595
23	0.00553018	0.00573226	0.00581988	0.00632504	0.00700444	0.0071796	0.00747941
26	0.00489314	0.00499879	0.00507772	0.00550042	0.00605907	0.00622113	0.00649717
28	0.00443547	0.00452925	0.00461909	0.00500677	0.00553624	0.00569203	0.0058972
30	0.00397129	0.00409864	0.00418356	0.00457687	0.00507339	0.00518944	0.00538506
32	0.00353865	0.00369017	0.00378106	0.0041734	0.00467232	0.00477631	0.0049257
35	0.00297065	0.00312727	0.00322753	0.00365233	0.004116	0.00422371	0.00435204
39	0.0023548	0.00250342	0.00260905	0.00304835	0.00350526	0.00360055	0.00374686
43	0.00185703	0.00199905	0.00210306	0.00253134	0.00299416	0.00309591	0.0032593
47	0.00145572	0.00159621	0.00169473	0.00210886	0.00256075	0.00264864	0.00287086
52	0.00107071	0.00119935	0.00129606	0.00166915	0.00211038	0.00220261	0.00245114
57	0.000788743	0.000903018	0.000987043	0.00133153	0.00174068	0.00184183	0.00209946
64	0.000509791	0.000604395	0.000673411	0.000962559	0.00133198	0.00143126	0.00169919
70	0.000351764	0.000427884	0.000489435	0.000727395	0.00105507	0.00115324	0.00141252
78	0.000214404	0.000272184	0.000317162	0.000503377	0.000778659	0.000865719	0.00109649
86	0.00013078	0.000173161	0.000204652	0.000346071	0.00057591	0.000647715	0.000854072
95	7.49603E-05	0.000103305	0.00012444	0.000228185	0.000408537	0.000467441	0.000640747
100	0.000055164	7.75339E-05	0.000094469	0.000180955	0.000337799	0.000391116	0.000547853
105	4.06841E-05	5.83015E-05	7.17166E-05	0.000143893	0.000279641	0.000327343	0.000470537
116	2.08217E-05	3.11675E-05	3.92504E-05	8.69642E-05	0.000184275	0.000221186	0.000336697
128	9.96138E-06	1.57887E-05	2.02973E-05	0.000049305	0.000116094	0.00014447	0.000233707
141	4.44295E-06	7.46493E-06	1.00308E-05	2.69677E-05	7.11994E-05	9.08203E-05	0.000158498
156	1.75016E-06	3.13145E-06	4.39021E-06	1.35218E-05	4.01392E-05	5.30755E-05	0.000101323
172	6.47904E-07	1.26004E-06	1.8158E-06	6.39138E-06	2.19855E-05	0.000030088	6.24634E-05
190	2.11835E-07	4.53814E-07	6.75081E-07	2.77181E-06	1.11666E-05	1.58884E-05	3.60922E-05
210	6.11702E-08	1.45913E-07	2.20517E-07	1.09911E-06	5.27511E-06	7.81549E-06	1.96216E-05
232	1.56838E-08	4.18107E-08	6.54639E-08	3.95759E-07	2.30319E-06	3.58112E-06	1.00366E-05
256	3.55539E-09	1.06432E-08	1.75371E-08	1.3012E-07	9.30273E-07	1.52851E-06	4.83028E-06
282	7.12214E-10	2.41734E-09	4.20221E-09	3.91431E-08	3.47415E-07	6.07723E-07	2.1872E-06
300	2.33985E-10	8.66316E-10	1.54911E-09	1.70202E-08	1.75673E-07	3.20918E-07	1.2638E-06
312	1.11406E-10	4.37087E-10	7.96677E-10	9.78535E-09	1.115E-07	2.09661E-07	8.76738E-07
344	1.53989E-11	6.94914E-11	1.36582E-10	2.22283E-09	3.31742E-08	6.7378E-08	3.29297E-07
380	1.66205E-12	8.8632E-12	1.87563E-11	4.24221E-10	8.48231E-09	1.87885E-08	1.09365E-07
420	1.40079E-13	9.05417E-13	2.07021E-12	6.71553E-11	1.86388E-09	4.54614E-09	3.23724E-08
464	9.21878E-15	7.36262E-14	1.83303E-13	8.79808E-12	3.51977E-10	9.54482E-10	8.48706E-09
512	4.73748E-16	4.76587E-15	1.30162E-14	9.57008E-13	5.72276E-11	1.73919E-10	1.97008E-09
565	1.78918E-17	2.31958E-16	7.01425E-16	8.26193E-14	7.75814E-12	2.65648E-11	3.92772E-10
624	4.68671E-19	8.01797E-18	2.71566E-17	5.3517E-15	8.34812E-13	3.27165E-12	6.51436E-11
689	8.47662E-21	1.96838E-19	7.5538E-19	2.62269E-16	7.13788E-14	3.26108E-13	8.98801E-12
761	9.95193E-23	3.2417E-21	1.42862E-20	9.28865E-18	4.74106E-15	2.53577E-14	1.00188E-12
840	7.58442E-25	3.58144E-23	1.8371E-22	2.37744E-19	2.41927E-16	1.53821E-15	9.02265E-14
928	3.31626E-27	2.36824E-25	1.4386E-24	4.00789E-21	8.70702E-18	6.78057E-17	6.17654E-15
1000	3.89343E-29	3.90022E-27	2.72616E-26	1.41945E-22	5.73107E-19	5.27249E-18	6.88493E-16
1024	8.849E-30	9.92303E-28	7.27143E-27	4.66148E-23	2.31397E-19	2.25043E-18	3.31348E-16
1131	0	2.22029E-30	2.00838E-29	3.25448E-25	4.05806E-21	5.05588E-20	1.2713E-17
1249	0	0	0	1.37899E-27	4.69626E-23	7.68881E-22	3.48852E-19
1379	0	0	0	3.35564E-30	3.4534E-25	7.63917E-24	6.64087E-21
1523	0	0	0	0	1.49616E-27	4.61897E-26	8.25151E-23
1681	0	0	0	0	3.819E-30	1.69964E-28	6.69216E-25
1856	0	0	0	0	0	0	3.23312E-27
2050	0	0	0	0	0	0	8.75452E-30
2263	0	0	0	0	0	0	0
2499	0	0	0	0	0	0	0
2759	0	0	0	0	0	0	0
3046	0	0	0	0	0	0	0
3363	0	0	0	0	0	0	0
3714	0	0	0	0	0	0	0
4100	0	0	0	0	0	0	0
4527	0	0	0	0	0	0	0
4999	0	0	0	0	0	0	0
5519	0	0	0	0	0	0	0
6094	0	0	0	0	0	0	0
6728	0	0	0	0	0	0	0
7428	0	0	0	0	0	0	0
8202	0	0	0	0	0	0	0
9056	0	0	0	0	0	0	0
9999	0	0	0	0	0	0	0
11039	0	0	0	0	0	0	0
12189	0	0	0	0	0	0	0
13458	0	0	0	0	0	0	0
14859	0	0	0	0	0	0	0
16406	0	0	0	0	0	0	0
18114	0	0	0	0	0	0	0
20000	0	0	0	0	0	0	0

iHRA1 Source	Species	RWQS (mg/l)					
	SO4	250					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	208.881	231.742	242.484	293.534	348.5	362.38	388.087
1	205.407	227.696	238.436	288.787	342.408	356.324	381.899
2	201.842	223.72	234.473	284.02	336.425	350.655	375.858
3	180.332	199.326	208.824	253.004	299.844	312.117	336.561
4	160.923	177.62	186.326	225.664	267.55	278.762	302.181
5	141.787	157.66	165.917	200.871	238.075	248.587	271.313
6	127.926	139.98	147.944	178.723	212.252	221.035	241.098
7	114.453	124.633	132.272	158.937	189.118	197.346	214.607
8	101.424	110.904	117.227	141.465	168.971	175.701	191.926
9	89.6222	98.5083	104.336	126.014	150.21	157.186	171.856
10	79.1935	87.3693	92.7662	112.06	134.065	140.635	153.957
11	69.9783	77.6698	82.4938	99.7264	119.383	125.634	137.828
13	54.7691	61.4712	65.0633	78.9921	95.848	100.856	110.611
14	48.574	54.4312	57.7223	70.5164	85.5991	90.2167	99.0671
16	37.9944	42.7941	45.443	56.0462	68.4598	72.0605	79.6927
17	33.572	37.8647	40.3466	49.8844	61.2706	64.5733	71.4267
19	26.2235	29.8007	31.703	39.6005	48.9417	51.9613	57.541
21	20.628	23.4184	24.9902	31.3794	39.2206	41.9152	46.207
23	15.993	18.333	19.5418	24.9085	31.5449	33.926	37.2322
26	11.135	12.7843	13.5389	17.6036	22.6541	24.4778	27.2671
28	8.7867	10.0384	10.6006	14.0163	18.2368	19.7404	22.154
30	6.85822	7.86357	8.30377	11.1118	14.6311	15.9126	17.9997
32	5.38875	6.13538	6.53367	8.78133	11.8376	12.8214	14.6244
35	3.72515	4.26585	4.49669	6.20483	8.56432	9.30198	10.6439
39	2.23509	2.57951	2.74766	3.89549	5.56319	6.06434	6.91425
43	1.34477	1.57198	1.68037	2.4461	3.62029	3.93871	4.5177
47	0.819739	0.960737	1.02622	1.52663	2.35926	2.58175	2.95517
52	0.439403	0.514983	0.556242	0.853246	1.39682	1.52017	1.77453
57	0.234173	0.275752	0.30088	0.477734	0.81567	0.899579	1.05452
64	0.0973902	0.115229	0.127079	0.212177	0.380635	0.432345	0.505865
70	0.0455919	0.054488	0.0604993	0.105091	0.202136	0.231606	0.268438
78	0.0166558	0.0197907	0.0224128	0.0416126	0.0856538	0.0999834	0.116595
86	0.0060017	0.00724173	0.00836033	0.0165642	0.0364681	0.0428551	0.0516081
95	0.00190939	0.00233693	0.0027674	0.00581712	0.0138498	0.0166318	0.0203422
100	0.00100891	0.00124669	0.00148741	0.00324888	0.00813778	0.009768	0.0120236
105	0.000537182	0.000664186	0.00080419	0.00182479	0.00478645	0.00573685	0.00720325
116	0.000133791	0.000166768	0.000205721	0.000506764	0.00148711	0.00182504	0.00236928
128	2.85E-05	3.70E-05	4.63E-05	0.000125956	0.000411305	0.000523643	0.000671238
141	5.35E-06	7.25E-06	9.15E-06	2.77E-05	0.0001025	0.000135398	0.000177783
156	7.94E-07	1.09E-06	1.43E-06	4.87E-06	2.08E-05	2.84E-05	3.77E-05
172	1.02E-07	1.46E-07	2.00E-07	7.70E-07	3.77E-06	5.33E-06	7.34E-06
190	1.01E-08	1.52E-08	2.15E-08	9.41E-08	5.58E-07	8.03E-07	1.17E-06
210	7.69E-10	1.21E-09	1.81E-09	9.23E-09	6.50E-08	9.91E-08	1.50E-07
232	4.68E-11	7.62E-11	1.19E-10	7.17E-10	6.18E-09	9.83E-09	1.55E-08
256	2.17E-12	3.66E-12	6.01E-12	4.37E-11	4.77E-10	7.95E-10	1.32E-09
282	7.81E-14	1.38E-13	2.39E-13	2.13E-12	2.96E-11	5.20E-11	9.14E-11
300	7.87E-15	1.43E-14	2.56E-14	2.61E-13	4.25E-12	7.98E-12	1.44E-11
312	1.71E-15	3.16E-15	5.79E-15	6.45E-14	1.17E-12	2.28E-12	4.20E-12
344	2.87E-17	5.63E-17	1.10E-16	1.55E-15	3.85E-14	7.85E-14	1.61E-13
380	2.85E-19	6.08E-19	1.25E-18	2.38E-17	8.34E-16	1.82E-15	3.96E-15
420	1.69E-21	3.96E-21	8.74E-21	2.31E-19	1.15E-17	2.72E-17	6.46E-17
464	6.10E-24	1.58E-23	3.74E-23	1.38E-21	1.06E-19	2.78E-19	7.06E-19
512	1.32E-26	3.75E-26	9.80E-26	5.28E-24	6.29E-22	1.83E-21	5.12E-21
565	1.50E-29	4.74E-29	1.38E-28	1.10E-26	2.24E-24	6.96E-24	2.22E-23
624	0	0	0	1.18E-29	4.02E-27	1.41E-26	5.25E-26
689	0	0	0	0	3.92E-30	1.53E-29	6.78E-29
761	0	0	0	0	0	0	0
840	0	0	0	0	0	0	0
928	0	0	0	0	0	0	0
1000	0	0	0	0	0	0	0
1024	0	0	0	0	0	0	0
1131	0	0	0	0	0	0	0
1249	0	0	0	0	0	0	0
1379	0	0	0	0	0	0	0
1523	0	0	0	0	0	0	0
1681	0	0	0	0	0	0	0
1856	0	0	0	0	0	0	0
2050	0	0	0	0	0	0	0
2263	0	0	0	0	0	0	0
2499	0	0	0	0	0	0	0
2759	0	0	0	0	0	0	0
3046	0	0	0	0	0	0	0
3363	0	0	0	0	0	0	0
3714	0	0	0	0	0	0	0
4100	0	0	0	0	0	0	0
4527	0	0	0	0	0	0	0
4999	0	0	0	0	0	0	0
5519	0	0	0	0	0	0	0
6094	0	0	0	0	0	0	0
6728	0	0	0	0	0	0	0
7428	0	0	0	0	0	0	0
8202	0	0	0	0	0	0	0
9056	0	0	0	0	0	0	0
9999	0	0	0	0	0	0	0
11039	0	0	0	0	0	0	0
12189	0	0	0	0	0	0	0
13458	0	0	0	0	0	0	0
14859	0	0	0	0	0	0	0
16406	0	0	0	0	0	0	0
18114	0	0	0	0	0	0	0
20000	0	0	0	0	0	0	0

iHRA1 Source	Species	RWQS (mg/l)					
	Zn	5					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0.0780283	0.0927918	0.103558	0.139373	0.180168	0.189771	0.211303
1	0.0770798	0.0915942	0.102312	0.137514	0.177819	0.187336	0.208619
2	0.0761428	0.0904655	0.101082	0.135711	0.175353	0.184932	0.205969
3	0.0700533	0.0836729	0.0930159	0.124035	0.159839	0.168626	0.188908
4	0.0644208	0.0773903	0.0850982	0.113472	0.145846	0.153088	0.17238
5	0.0592412	0.0715795	0.0781818	0.103688	0.132342	0.140234	0.15679
6	0.0544781	0.0662049	0.0717513	0.0946233	0.120507	0.127329	0.143254
7	0.0500979	0.0605425	0.0660364	0.0866715	0.109655	0.1167	0.131059
8	0.0460699	0.0558782	0.0605694	0.0793243	0.0995064	0.106263	0.120207
9	0.0423658	0.0515732	0.0557699	0.0725609	0.0909566	0.0967825	0.110365
10	0.0387513	0.0474068	0.0510269	0.0663614	0.0827607	0.0885077	0.100381
11	0.0354165	0.0434374	0.046855	0.060695	0.0753336	0.0811843	0.0918149
13	0.0298739	0.0363818	0.0392098	0.0506971	0.062915	0.0673864	0.0763418
14	0.0274437	0.0333396	0.0357743	0.0464342	0.0574444	0.0617161	0.0694689
16	0.0232919	0.0279699	0.0300181	0.0387402	0.0479472	0.0510417	0.05863
17	0.0213705	0.0256416	0.0275687	0.035447	0.0438005	0.0467284	0.0538371
19	0.0179903	0.0214917	0.0231336	0.0296508	0.0364924	0.0389657	0.0449865
21	0.0151529	0.0180841	0.0194064	0.024757	0.0304915	0.0328348	0.0374629
23	0.0127878	0.0150552	0.0162384	0.0207194	0.0255774	0.0275092	0.0314984
26	0.00991399	0.0115091	0.0123747	0.0157143	0.0197235	0.0213211	0.0243851
28	0.00836661	0.00957763	0.010388	0.0130841	0.0165848	0.0180281	0.0205597
30	0.00704955	0.00792736	0.00864132	0.0109858	0.0139232	0.0152436	0.0173344
32	0.00593583	0.00659248	0.00717828	0.00915907	0.0117512	0.0127735	0.014615
35	0.00459292	0.00504804	0.00542001	0.00696102	0.00908854	0.00999089	0.0112616
39	0.00320746	0.00349142	0.00375983	0.00486542	0.00649546	0.00711602	0.00801768
43	0.00220712	0.0024158	0.00257837	0.00339689	0.00461889	0.00508027	0.00571744
47	0.0015177	0.00166881	0.00176756	0.00238125	0.00329754	0.00365422	0.00406492
52	0.000946246	0.00104734	0.00110234	0.00151586	0.00218261	0.00242153	0.00266025
57	0.000581135	0.000647946	0.000686135	0.000971428	0.00144325	0.0016001	0.00176408
64	0.000294086	0.000326384	0.000353473	0.000516817	0.000812794	0.000907046	0.000996508
70	0.000162049	0.000180595	0.000199214	0.000302367	0.00049579	0.000551115	0.000624074
78	7.37E-05	8.20E-05	9.29E-05	0.000148563	0.000257797	0.000288811	0.000323361
86	3.28E-05	3.74E-05	4.33E-05	7.32E-05	0.000133449	0.000151497	0.000173966
95	1.33E-05	1.57E-05	1.83E-05	3.26E-05	6.38E-05	7.24E-05	8.71E-05
100	8.14E-06	9.59E-06	1.13E-05	2.07E-05	4.23E-05	4.87E-05	5.87E-05
105	4.95E-06	5.87E-06	6.98E-06	1.32E-05	2.79E-05	3.27E-05	3.97E-05
116	1.61E-06	2.01E-06	2.40E-06	4.96E-06	1.12E-05	1.34E-05	1.71E-05
128	4.83E-07	6.14E-07	7.49E-07	1.68E-06	4.14E-06	5.17E-06	6.85E-06
141	1.31E-07	1.67E-07	2.12E-07	5.26E-07	1.42E-06	1.84E-06	2.52E-06
156	2.85E-08	3.88E-08	4.91E-08	1.39E-07	4.19E-07	5.48E-07	8.09E-07
172	5.61E-09	7.93E-09	1.04E-08	3.37E-08	1.12E-07	1.52E-07	2.40E-07
190	9.08E-10	1.33E-09	1.82E-09	6.69E-09	2.57E-08	3.56E-08	6.08E-08
210	1.20E-10	1.87E-10	2.62E-10	1.13E-09	4.94E-09	7.07E-09	1.31E-08
232	1.28E-11	2.15E-11	3.10E-11	1.54E-10	8.27E-10	1.23E-09	2.42E-09
256	1.11E-12	2.03E-12	3.04E-12	1.81E-11	1.16E-10	1.81E-10	3.85E-10
282	7.94E-14	1.57E-13	2.44E-13	1.80E-12	1.39E-11	2.29E-11	5.21E-11
300	1.27E-14	2.67E-14	4.30E-14	3.60E-13	3.22E-12	5.50E-12	1.31E-11
312	3.76E-15	8.22E-15	1.34E-14	1.24E-13	1.22E-12	2.13E-12	5.19E-12
344	1.45E-16	3.53E-16	5.97E-16	7.07E-15	9.08E-14	1.68E-13	4.47E-13
380	3.75E-18	1.02E-17	1.81E-17	2.82E-16	4.85E-15	9.51E-15	2.84E-14
420	6.43E-20	1.95E-19	3.67E-19	7.78E-18	1.82E-16	3.90E-16	1.33E-15
464	7.35E-22	2.51E-21	5.07E-21	1.50E-19	4.92E-18	1.18E-17	4.57E-17
512	5.59E-24	2.17E-23	4.83E-23	2.07E-21	9.77E-20	2.58E-19	1.16E-18
565	2.56E-26	1.19E-25	2.90E-25	1.85E-23	1.29E-21	3.81E-21	2.00E-20
624	6.37E-29	3.63E-28	9.77E-28	9.50E-26	1.04E-23	3.49E-23	2.18E-22
689	0	0	1.85E-30	2.84E-28	5.12E-26	1.98E-25	1.50E-24
761	0	0	0	0	1.42E-28	6.36E-28	6.15E-27
840	0	0	0	0	0	1.17E-30	1.47E-29
928	0	0	0	0	0	0	0
1000	0	0	0	0	0	0	0
1024	0	0	0	0	0	0	0
1131	0	0	0	0	0	0	0
1249	0	0	0	0	0	0	0
1379	0	0	0	0	0	0	0
1523	0	0	0	0	0	0	0
1681	0	0	0	0	0	0	0
1856	0	0	0	0	0	0	0
2050	0	0	0	0	0	0	0
2263	0	0	0	0	0	0	0
2499	0	0	0	0	0	0	0
2759	0	0	0	0	0	0	0
3046	0	0	0	0	0	0	0
3363	0	0	0	0	0	0	0
3714	0	0	0	0	0	0	0
4100	0	0	0	0	0	0	0
4527	0	0	0	0	0	0	0
4999	0	0	0	0	0	0	0
5519	0	0	0	0	0	0	0
6094	0	0	0	0	0	0	0
6728	0	0	0	0	0	0	0
7428	0	0	0	0	0	0	0
8202	0	0	0	0	0	0	0
9056	0	0	0	0	0	0	0
9999	0	0	0	0	0	0	0
11039	0	0	0	0	0	0	0
12189	0	0	0	0	0	0	0
13458	0	0	0	0	0	0	0
14859	0	0	0	0	0	0	0
16406	0	0	0	0	0	0	0
18114	0	0	0	0	0	0	0
20000	0	0	0	0	0	0	0

iHRA1 GW	Species	RWQS (mg/l)					
	NH3-	0.5					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1.07963E-20
2	0	0	0	0	9.10541E-17	4.69599E-16	8.07287E-15
3	0	0	0	3.59049E-20	3.73909E-14	3.06204E-13	8.45633E-12
4	0	0	0	1.00233E-18	9.1952E-12	6.39687E-11	1.46275E-09
5	0	0	0	4.35845E-15	1.74905E-09	8.83857E-09	1.24539E-07
6	0	0	0	1.43417E-11	3.21889E-07	1.20798E-06	4.4632E-06
7	3.14293E-17	1.57028E-15	8.65778E-11	7.32826E-06	6.57118E-05	0.000088381	0.000128087
8	3.11581E-17	1.22766E-10	1.75541E-07	6.28756E-05	0.000178646	0.000210591	0.000274131
9	1.63821E-16	3.7401E-08	4.20551E-06	0.000117735	0.000237335	0.000289097	0.000349245
10	2.735E-14	5.95541E-07	1.78405E-05	0.000147346	0.00027478	0.000328855	0.00041849
11	6.0094E-12	3.31493E-06	0.000044982	0.000159897	0.000302335	0.000364559	0.000485292
13	2.96826E-09	2.15321E-05	7.41687E-05	0.000163142	0.000318871	0.000392045	0.000597005
14	2.08716E-08	3.79397E-05	7.35018E-05	0.00016097	0.000332358	0.000398316	0.00062809
16	3.22933E-07	0.000046684	0.000062361	0.000144652	0.000345764	0.000431305	0.000641545
17	8.7422E-07	4.50196E-05	5.77298E-05	0.000136513	0.000350119	0.000438199	0.000668846
19	4.01986E-06	3.70638E-05	4.60889E-05	0.000118012	0.000352944	0.000461245	0.000748274
21	1.21628E-05	2.97958E-05	0.000037293	9.73159E-05	0.000334246	0.000441415	0.000754648
23	1.37687E-05	2.31824E-05	2.81971E-05	8.00548E-05	0.000318202	0.000443606	0.000709671
26	1.03347E-05	1.62453E-05	1.94457E-05	5.81489E-05	0.000298358	0.000441813	0.000733211
28	8.18298E-06	1.23538E-05	1.49724E-05	4.68322E-05	0.000286898	0.000433341	0.000707849
30	6.49353E-06	9.30366E-06	0.00001144	3.69213E-05	0.000266595	0.000412674	0.00069045
32	4.70102E-06	6.74546E-06	8.44051E-06	2.90002E-05	0.000257554	0.000401098	0.000707806
35	2.93203E-06	4.13843E-06	5.18541E-06	0.000019037	0.000254724	0.000384189	0.000656956
39	1.68017E-06	2.44189E-06	3.07427E-06	1.14829E-05	0.000219111	0.000354828	0.000576975
43	9.1409E-07	1.3409E-06	1.68401E-06	6.86783E-06	0.000189705	0.000335539	0.000519943
47	5.59778E-07	8.09412E-07	1.01438E-06	4.14387E-06	0.000162403	0.000308883	0.000490982
52	3.37677E-07	4.91255E-07	6.28544E-07	2.39972E-06	0.000140013	0.000281579	0.000492701
57	2.12923E-07	3.10764E-07	3.95762E-07	1.48335E-06	0.000116389	0.000238868	0.000461034
64	1.05418E-07	1.56313E-07	1.97822E-07	7.72387E-07	8.61324E-05	0.000196717	0.000476307
70	4.76565E-08	6.87092E-08	9.08388E-08	3.9231E-07	6.75827E-05	0.000172589	0.000448017
78	1.82623E-08	2.77439E-08	3.55702E-08	1.61327E-07	0.00004592	0.00013645	0.000421019
86	7.62377E-09	1.14712E-08	1.46474E-08	7.05002E-08	3.20379E-05	0.000106357	0.000424306
95	2.47244E-09	3.86614E-09	4.91204E-09	2.61987E-08	2.27705E-05	8.39156E-05	0.000401426
100	9.60004E-10	1.58585E-09	2.12483E-09	1.38947E-08	1.89301E-05	7.30708E-05	0.000383182
105	2.53928E-10	4.62133E-10	6.63653E-10	5.91502E-09	1.56264E-05	6.37651E-05	0.000362677
116	6.40064E-11	1.00804E-10	1.37414E-10	1.22841E-09	9.98119E-06	4.74338E-05	0.00034267
128	1.63799E-11	2.61305E-11	3.37255E-11	2.77561E-10	6.0643E-06	3.27602E-05	0.000295628
141	5.47098E-12	8.93415E-12	1.12093E-11	7.20814E-11	3.70674E-06	2.38051E-05	0.000242129
156	1.79408E-12	3.17689E-12	4.0973E-12	2.20063E-11	2.20992E-06	1.65137E-05	0.000204038
172	0	2.39248E-14	2.8859E-13	5.86094E-12	1.25945E-06	1.08117E-05	0.000176238
190	0	5.52431E-15	1.32083E-14	2.94206E-13	6.91834E-07	6.64791E-06	0.000152265
210	0	0	0	3.51287E-14	3.60496E-07	4.4323E-06	0.000129482
232	0	1.12528E-15	3.46624E-15	3.99166E-14	1.77367E-07	2.87648E-06	0.00010857
256	1.33173E-15	1.95594E-15	2.54697E-15	9.52114E-15	8.59324E-08	0.000001717	8.99137E-05
282	8.97013E-17	2.14871E-16	3.36205E-16	3.08206E-15	3.97919E-08	9.54007E-07	0.000073651
300	1.79E-16	2.67813E-16	3.39065E-16	1.2167E-15	2.35336E-08	6.47298E-07	0.000064338
312	0.00E+00	1.44E-17	2.52106E-17	1.68522E-16	1.64948E-08	5.03443E-07	5.88702E-05
344	0.00E+00	0.00E+00	0.00E+00	3.41919E-18	6.28338E-09	2.60117E-07	4.66843E-05
380	0.00E+00	0.00E+00	0.00E+00	2.18E-17	2.15499E-09	1.3384E-07	3.59273E-05
420	0.00E+00	1.13E-18	2.56E-18	1.89E-17	6.66767E-10	6.85566E-08	2.55104E-05
464	1.18E-18	2.44E-18	3.21E-18	1.39E-17	1.86E-10	3.33317E-08	1.77092E-05
512	0.00E+00	0.00E+00	0.00E+00	6.31E-19	4.71E-11	1.54E-08	1.20339E-05
565	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.05E-11	6.21E-09	7.95E-06
624	0.00E+00	0.00E+00	0.00E+00	9.54E-18	2.00E-12	2.25E-09	5.08E-06
689	0.00E+00	1.69E-18	7.13E-18	3.55E-17	3.25E-13	7.46E-10	3.37E-06
761	0.00E+00	0.00E+00	2.32E-17	1.19E-16	4.50E-14	2.20E-10	2.18E-06
840	0.00E+00	0.00E+00	6.82E-17	4.68E-16	6.62E-15	5.83E-11	1.36E-06
928	0.00E+00	2.29E-16	3.13E-16	8.21E-16	9.53E-15	1.35E-11	8.20E-07
1000	0.00E+00	2.41E-16	3.54E-16	9.85E-16	7.31E-15	2.24E-12	5.47E-07
1024	0.00E+00	0.00E+00	3.48E-19	3.56E-17	3.47E-15	1.54E-12	4.78E-07
1131	0.00E+00	0.00E+00	0.00E+00	1.15E-17	1.28E-15	2.79E-13	2.65E-07
1249	1.83E-19	9.55E-17	2.28E-16	9.51E-16	5.21E-15	5.08E-14	1.40E-07
1379	2.04E-16	4.61E-16	5.95E-16	1.52E-15	8.33E-15	2.96E-14	7.04E-08
1523	0.00E+00	0.00E+00	0.00E+00	2.20E-18	1.33E-17	2.97E-16	3.34E-08
1681	0.00E+00	0.00E+00	6.50E-19	2.58E-18	1.40E-17	4.83E-17	1.49E-08
1856	0.00E+00	0.00E+00	3.43E-19	1.89E-18	1.24E-17	3.85E-17	6.18E-09
2050	0.00E+00	6.92E-20	7.71E-19	4.29E-18	2.31E-17	5.30E-17	2.37E-09
2263	0.00E+00	3.24E-19	7.92E-19	3.86E-18	1.92E-17	4.32E-17	8.38E-10
2499	0.00E+00	0.00E+00	0.00E+00	7.54E-19	6.05E-18	1.50E-17	2.69E-10
2759	0.00E+00	0.00E+00	0.00E+00	0.00E+00	9.62E-19	4.22E-18	7.31E-11
3046	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.54E-19	2.60E-18	1.67E-11
3363	0	0.00E+00	0.00E+00	7.48E-20	1.40E-18	4.57E-18	3.32E-12
3714	0	0	0	8.18E-19	5.37E-18	1.01E-17	5.65E-13
4100	0	3.61905E-19	7.0889E-19	2.88E-18	1.38E-17	2.43E-17	8.18E-14
4527	0	0	6.90464E-19	3.51454E-18	1.81E-17	2.91E-17	9.73E-15
4999	0	0	0	0	1.29E-18	3.35E-18	9.36E-16
5519	0	0	0	0	5.87E-18	1.33E-17	1.57E-16
6094	0	0	0	2.62271E-18	3.12539E-17	5.50E-17	3.52E-16
6728	0	0	0	2.52171E-17	1.33025E-16	2.60381E-16	1.07E-15
7428	0	0	0	2.45557E-17	3.21005E-16	6.55558E-16	2.76981E-15
8202	0	8.42686E-17	1.14176E-16	3.86693E-16	1.76631E-15	3.52175E-15	1.09577E-14
9056	0	0	0	1.72901E-16	9.30442E-16	1.76325E-15	5.20874E-15
9999	3.65257E-16	7.65542E-16	1.10756E-15	3.05741E-15	1.44396E-14	2.46239E-14	7.54863E-14
11039	0	0	2.60203E-20	1.71813E-15	1.17299E-14	2.23875E-14	8.81076E-14
12189	0	4.3662E-21	3.15003E-19	1.70213E-15	8.81228E-15	1.56837E-14	5.61844E-14
13458	0	2.83643E-20	1.00938E-17	1.29616E-15	7.12297E-15	1.33625E-14	4.13028E-14
14859	3.34699E-16	1.15575E-15	1.38163E-15	3.27048E-15	1.65838E-14	2.76847E-14	8.18885E-14
16406	3.88842E-19	2.96627E-16	5.12942E-16	1.53469E-15	7.63359E-15	1.23834E-14	3.95273E-14
18114	0	0	0	0	3.08337E-18	9.10292E-18	3.52703E-17
20000	0	0	0	5.03809E-19	1.5292E-17	2.91463E-17	1.57681E-16

iHRA1 GW	Species	RWQS (mg/l)					
	As	0.01					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	4.21656E-19
11	0	0	0	0	3.48928E-21	1.57233E-19	1.7031E-17
13	0	0	0	0	3.75066E-18	8.164E-17	4.18144E-15
14	0	0	0	0	5.58435E-17	9.57521E-16	3.59781E-14
16	0	0	0	1.42472E-20	4.09166E-15	5.27965E-14	1.18757E-12
17	0	0	0	1.78294E-19	2.36718E-14	2.48794E-13	4.59538E-12
19	0	0	0	1.27145E-17	4.26079E-13	3.42919E-12	4.4269E-11
21	0	0	0	4.06614E-16	4.3157E-12	2.73827E-11	2.6951E-10
23	0	0	0	6.43264E-15	2.98718E-11	1.51386E-10	1.14916E-09
26	0	0	0	1.83411E-13	2.68784E-10	1.13817E-09	6.29161E-09
28	0	0	0	1.12267E-12	8.66739E-10	3.32794E-09	1.62997E-08
30	0	0	1.17045E-19	5.33771E-12	2.44603E-09	8.36859E-09	3.60809E-08
32	0	0	1.52645E-19	2.06033E-11	5.93784E-09	1.87865E-08	6.67509E-08
35	0	5.0613E-20	8.1361E-19	1.04399E-10	1.81944E-08	5.03798E-08	1.53545E-07
39	0	5.7911E-20	5.34538E-18	6.31365E-10	5.89843E-08	1.43214E-07	3.82649E-07
43	0	1.30961E-19	1.4265E-16	2.68282E-09	1.46559E-07	3.23867E-07	8.10481E-07
47	0	3.51402E-19	2.46888E-15	8.81388E-09	3.06947E-07	6.09201E-07	1.48676E-06
52	0	7.17386E-19	4.52761E-14	2.84606E-08	6.41118E-07	1.15065E-06	2.54363E-06
57	0	6.15797E-18	4.82022E-13	7.28531E-08	1.13363E-06	1.94425E-06	3.67059E-06
64	0	3.06896E-16	6.87927E-12	2.05987E-07	2.14119E-06	3.32265E-06	5.87136E-06
70	0	4.89449E-15	4.30344E-11	4.17452E-07	3.19367E-06	4.72161E-06	7.95866E-06
78	0	9.59357E-14	3.00363E-10	8.79337E-07	4.8618E-06	6.79522E-06	1.05728E-05
86	0	1.01424E-12	1.40855E-09	1.56301E-06	6.78623E-06	9.12936E-06	1.39272E-05
95	0	8.72551E-12	5.72212E-09	2.59196E-06	8.80923E-06	1.14623E-05	1.70773E-05
100	3.2137E-17	2.41543E-11	1.10722E-08	3.26486E-06	9.94065E-06	1.28873E-05	1.78083E-05
105	3.82251E-17	6.02675E-11	1.99983E-08	4.01913E-06	1.10019E-05	1.40897E-05	1.81884E-05
116	4.66022E-17	3.35006E-10	6.0292E-08	5.83291E-06	1.30465E-05	1.65482E-05	2.13479E-05
128	8.71506E-17	1.62615E-09	1.58187E-07	7.74434E-06	1.51332E-05	1.83809E-05	2.36787E-05
141	9.95061E-16	6.6867E-09	3.65448E-07	9.58875E-06	1.70529E-05	1.99542E-05	2.56288E-05
156	1.82513E-14	2.43543E-08	7.95593E-07	1.12887E-05	1.86246E-05	2.13888E-05	2.82974E-05
172	2.32979E-13	7.45316E-08	1.54396E-06	1.24949E-05	2.00725E-05	2.26091E-05	3.04473E-05
190	2.39502E-12	2.02305E-07	2.79638E-06	1.33015E-05	2.10615E-05	2.48602E-05	3.30824E-05
210	1.94897E-11	4.9827E-07	4.65786E-06	1.39274E-05	2.24014E-05	2.57287E-05	0.000035769
232	1.25807E-10	1.01372E-06	6.72001E-06	1.39401E-05	2.35734E-05	2.75635E-05	3.69466E-05
256	6.52167E-10	1.90922E-06	7.09697E-06	1.37298E-05	2.43399E-05	2.83583E-05	0.000036918
282	2.76317E-09	3.21174E-06	6.35689E-06	1.31917E-05	2.47291E-05	2.90016E-05	3.91218E-05
300	6.40587E-09	4.15493E-06	5.99545E-06	1.25839E-05	0.000025225	0.00002916	4.07873E-05
312	1.05788E-08	4.16954E-06	0.000005579	1.20681E-05	2.48288E-05	2.96012E-05	4.08171E-05
344	3.34022E-08	3.51643E-06	4.52096E-06	1.07476E-05	2.45694E-05	2.99489E-05	4.03108E-05
380	9.42508E-08	2.54051E-06	3.40293E-06	9.22537E-06	2.46514E-05	2.99105E-05	4.02656E-05
420	2.36199E-07	1.80787E-06	2.49083E-06	7.58727E-06	2.40465E-05	0.000029898	4.00572E-05
464	5.2689E-07	1.22412E-06	1.72313E-06	6.09339E-06	2.30832E-05	2.86838E-05	3.99865E-05
512	5.25396E-07	8.50936E-07	1.18533E-06	4.77389E-06	2.22693E-05	2.89764E-05	4.01296E-05
565	3.5391E-07	5.63678E-07	8.3784E-07	3.6032E-06	2.12772E-05	2.88648E-05	3.96697E-05
624	2.06768E-07	3.6477E-07	5.37275E-07	2.62899E-06	0.00002094	2.83708E-05	3.86743E-05
689	1.11159E-07	2.14748E-07	3.26459E-07	1.90491E-06	1.97308E-05	2.72703E-05	3.76933E-05
761	5.86082E-08	1.19852E-07	1.82112E-07	1.28659E-06	1.92711E-05	2.67231E-05	3.73593E-05
840	2.72654E-08	6.28965E-08	9.58621E-08	8.42689E-07	1.70341E-05	2.49821E-05	3.87338E-05
928	1.18865E-08	3.0748E-08	4.59025E-08	5.27804E-07	1.48145E-05	2.36827E-05	3.61769E-05
1000	5.65854E-09	1.60254E-08	2.56253E-08	3.5551E-07	1.38564E-05	2.24443E-05	3.56745E-05
1024	4.42583E-09	1.30951E-08	2.11696E-08	3.1445E-07	1.32284E-05	2.23606E-05	3.52184E-05
1131	1.15499E-09	4.03963E-09	7.36315E-09	1.72299E-07	1.13043E-05	2.14286E-05	3.26844E-05
1249	3.13154E-10	1.25548E-09	2.50801E-09	9.10825E-08	9.78492E-06	2.07936E-05	3.13193E-05
1379	7.94914E-11	3.74627E-10	8.88586E-10	4.48165E-08	8.08608E-06	1.86001E-05	3.17264E-05
1523	1.94306E-11	1.00396E-10	2.74519E-10	2.05003E-08	6.37952E-06	1.68785E-05	3.06171E-05
1681	4.81705E-12	2.72981E-11	8.3018E-11	9.52913E-09	4.95759E-06	1.42226E-05	0.000031798
1856	1.30424E-12	1.02954E-11	2.65094E-11	4.21181E-09	3.78363E-06	1.22206E-05	0.000030826
2050	1.7455E-13	1.92452E-12	5.88232E-12	1.65316E-09	2.83243E-06	1.00029E-05	2.93488E-05
2263	1.75603E-14	2.57476E-13	1.12429E-12	6.36955E-10	2.08318E-06	7.82458E-06	3.04936E-05
2499	4.32322E-15	4.89088E-14	2.17449E-13	2.10871E-10	1.49895E-06	6.14129E-06	2.79589E-05
2759	9.9856E-16	9.16143E-15	3.79071E-14	6.36473E-11	1.05049E-06	4.88535E-06	0.000025375
3046	1.61085E-16	1.30306E-15	4.81841E-15	1.79042E-11	7.12716E-07	3.74637E-06	2.27389E-05
3363	8.67768E-18	9.42451E-17	4.40972E-16	4.51889E-12	4.70407E-07	2.85131E-06	2.07701E-05
3714	0	5.2275E-19	2.84867E-17	1.0327E-12	3.00933E-07	2.12832E-06	1.86658E-05
4100	0	0	1.81393E-18	1.93759E-13	1.86634E-07	1.55917E-06	0.000016451
4527	0	5.59803E-19	1.09366E-18	3.11993E-14	1.11543E-07	1.11728E-06	1.41305E-05
4999	0	2.69522E-19	1.02965E-18	4.07274E-15	6.40319E-08	7.67416E-07	0.000011962
5519	0	1.42057E-19	3.98575E-19	4.73171E-16	3.56459E-08	5.13533E-07	9.98584E-06
6094	0	1.78238E-19	5.26117E-19	4.7475E-17	1.94026E-08	3.33536E-07	8.21371E-06
6728	0	0	0	5.46168E-18	1.02302E-08	2.09939E-07	6.65827E-06
7428	0	0	0	1.23109E-17	4.98207E-09	1.27596E-07	5.31511E-06
8202	0	0	0	9.31587E-18	2.21255E-09	7.45675E-08	4.17394E-06
9056	0	0	1.68492E-18	4.21736E-17	9.16796E-10	4.17901E-08	3.22338E-06
9999	0	0	0	2.76009E-17	3.5168E-10	2.23557E-08	2.44499E-06
11039	0	0	0	2.1128E-17	1.25E-10	1.13632E-08	1.81997E-06
12189	0	0	0	1.55553E-17	3.97033E-11	5.4629E-09	1.32659E-06
13458	0	0	0	3.7481E-17	1.14301E-11	2.46765E-09	9.45908E-07
14859	0	0	0	1.5707E-17	3.00847E-12	1.04019E-09	6.58475E-07
16406	0	2.68952E-20	2.56976E-18	2.17934E-16	7.04405E-13	4.06801E-10	4.46564E-07
18114	0	0	0	2.21089E-19	1.4107E-13	1.46481E-10	2.94363E-07
20000	0	0	0	4.13942E-19	2.48488E-14	4.80935E-11	1.88339E-07

iHRA1 GW	Species	RWQS (mg/l)					
	Cl-	250					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	4.70143E-10	1.72305E-09	1.79873E-07
2	9.16371E-07	0.000210568	0.000344497	0.000635473	0.0011779	0.00137873	0.00167903
3	0.000186904	0.00563035	0.00861986	0.0162165	0.0298044	0.0347022	0.0453998
4	0.00351236	0.0252864	0.0310425	0.0555185	0.104368	0.123042	0.160474
5	0.0209553	0.0310617	0.0372131	0.0695093	0.171252	0.206553	0.285644
6	0.0200235	0.0258607	0.030447	0.0601844	0.201258	0.261387	0.373756
7	0.0166399	0.0210575	0.024837	0.0492356	0.210007	0.28739	0.41992
8	0.0141964	0.0178979	0.0207218	0.0413677	0.22062	0.299272	0.443199
9	0.0115631	0.0150404	0.0173102	0.0347434	0.199241	0.308865	0.489374
10	0.00949566	0.0125601	0.0145128	0.0286891	0.183318	0.305746	0.50547
11	0.00719532	0.00935182	0.0107761	0.0219087	0.156663	0.28624	0.509007
13	0.00567242	0.00718293	0.00841483	0.0165095	0.113144	0.222077	0.523269
14	0.00478481	0.00605522	0.00711221	0.0141875	0.0974981	0.194748	0.54717
16	0.00361443	0.00461126	0.00545274	0.0106561	0.0713635	0.152169	0.540819
17	0.00278297	0.00357112	0.00425332	0.00847855	0.0619764	0.136313	0.526493
19	0.00191134	0.00246365	0.00289041	0.00575933	0.0428164	0.100981	0.48765
21	0.00141222	0.00186137	0.00212073	0.00432948	0.0307299	0.075795	0.437574
23	0.00106694	0.00141119	0.00160754	0.00332212	0.0226261	0.058061	0.373565
26	0.000740183	0.000970284	0.00111302	0.00232788	0.0145863	0.0390172	0.290953
28	0.000483685	0.000629591	0.000737729	0.0015708	0.0109056	0.0302185	0.245346
30	0.000291068	0.000381091	0.000449561	0.000969317	0.00745171	0.0225502	0.206343
32	0.000177455	0.000229778	0.000273651	0.000608889	0.00483344	0.0159235	0.172588
35	0.000105407	0.000134111	0.000162757	0.000371281	0.00265601	0.0092398	0.130852
39	6.60089E-05	8.47768E-05	0.000102174	0.000240642	0.00144289	0.00486333	0.0901806
43	0.000042635	5.53359E-05	6.61261E-05	0.000159421	0.000907822	0.00283717	0.0627468
47	2.57295E-05	3.33154E-05	4.03494E-05	9.92607E-05	0.000577007	0.00170486	0.0441493
52	0.000013229	1.72778E-05	2.09355E-05	5.31411E-05	0.000309053	0.000865218	0.028761
57	6.23553E-06	7.90266E-06	9.64522E-06	2.53494E-05	0.000152082	0.000425703	0.0189264
64	2.50701E-06	3.34622E-06	4.03338E-06	1.13017E-05	6.50453E-05	0.00016922	0.0112692
70	1.01894E-06	1.37541E-06	1.69026E-06	5.00265E-06	2.99468E-05	7.96775E-05	0.00735656
78	4.70211E-07	6.30695E-07	7.77908E-07	2.40609E-06	1.30226E-05	3.42227E-05	0.00423891
86	1.55446E-07	2.06737E-07	2.60948E-07	8.73783E-07	4.83901E-06	1.29249E-05	0.00248585
95	5.5746E-08	7.63815E-08	9.74964E-08	3.42221E-07	0.000001948	4.39629E-06	0.00138706
100	1.71739E-08	2.48952E-08	3.15247E-08	1.17601E-07	7.88629E-07	2.29848E-06	0.00100981
105	4.99989E-09	6.91558E-09	8.66908E-09	3.08701E-08	2.35482E-07	8.70314E-07	0.000738203
116	2.17309E-09	3.00857E-09	3.74472E-09	1.14901E-08	6.40514E-08	1.79415E-07	0.000375363
128	8.54426E-10	1.31234E-09	1.65866E-09	5.26353E-09	2.75043E-08	6.46307E-08	0.000182669
141	9.97079E-11	2.34307E-10	3.92525E-10	1.74549E-09	9.31556E-09	1.87043E-08	0.000085111
156	0	6.39024E-13	3.57231E-12	3.15545E-10	2.09976E-09	3.93177E-09	0.000035863
172	2.82716E-12	3.90077E-12	5.04626E-12	1.97144E-11	1.79537E-10	4.15437E-10	1.45099E-05
190	8.51872E-13	2.39236E-12	3.02537E-12	9.4398E-12	5.6275E-11	1.07807E-10	5.33094E-06
210	3.15974E-14	7.10192E-13	1.10822E-12	4.73238E-12	2.25215E-11	3.95547E-11	1.78056E-06
232	3.50578E-13	5.39417E-13	6.89661E-13	2.5552E-12	1.15771E-11	1.91444E-11	5.42092E-07
256	6.89162E-14	9.71763E-14	1.2277E-13	5.62488E-13	2.98371E-12	5.42954E-12	1.50436E-07
282	2.35338E-14	3.64711E-14	4.96243E-14	1.5454E-13	8.13295E-13	1.27368E-12	3.81442E-08
300	0	5.31459E-15	8.44165E-15	2.76491E-14	1.37245E-13	2.31916E-13	1.48571E-08
312	0	0	0	0	2.7928E-15	1.12326E-14	7.9466E-09
344	0	0	0	1.282E-17	1.84684E-15	5.95668E-15	1.51547E-09
380	0	0	0	6.6701E-16	3.83344E-15	8.63749E-15	2.39359E-10
420	0	0	0	1.34467E-16	1.99547E-15	4.71536E-15	3.09893E-11
464	0	0	0	0	1.31032E-15	3.07383E-15	3.20439E-12
512	0	0	1.77633E-16	1.01669E-15	5.1032E-15	9.21544E-15	2.51472E-13
565	0	5.01318E-16	8.35209E-16	2.52661E-15	1.22246E-14	2.2051E-14	8.7449E-14
624	0	6.75957E-16	1.14814E-15	4.00575E-15	1.74601E-14	2.98936E-14	1.05245E-13
689	3.15024E-15	5.53995E-15	7.0062E-15	1.6831E-14	8.22797E-14	1.25649E-13	3.80689E-13
761	0	0	0	0	3.15506E-14	8.16455E-14	4.63204E-13
840	0	0	0	1.05777E-14	7.4245E-14	1.19747E-13	3.0457E-13
928	0	0	0	0	3.1464E-13	7.80959E-13	3.04728E-12
1000	0	0	0	1.23617E-13	6.14703E-13	1.17717E-12	3.63818E-12
1024	9.27721E-14	1.51826E-13	1.89461E-13	4.17471E-13	2.09847E-12	3.5344E-12	9.03029E-12
1131	9.46584E-14	1.32704E-13	1.55279E-13	3.2517E-13	1.52022E-12	2.7939E-12	7.60241E-12
1249	5.06907E-14	6.81786E-14	8.32289E-14	1.8228E-13	8.49959E-13	1.52909E-12	4.1786E-12
1379	5.8947E-15	1.48066E-14	1.89768E-14	4.62949E-14	2.22909E-13	3.81745E-13	1.08506E-12
1523	3.54821E-17	1.60103E-16	2.24543E-16	6.63845E-16	3.31857E-15	6.72067E-15	2.38801E-14
1681	1.72544E-17	2.54766E-16	3.74888E-16	1.13695E-15	5.91993E-15	1.02638E-14	3.51821E-14
1856	3.39434E-16	6.21687E-16	8.24182E-16	2.24677E-15	1.05092E-14	1.91775E-14	5.85857E-14
2050	2.91064E-16	6.21973E-16	7.71032E-16	1.96434E-15	9.57202E-15	1.67231E-14	6.06177E-14
2263	0	2.15671E-16	3.04473E-16	9.19748E-16	4.09423E-15	7.97361E-15	2.13431E-14
2499	0	0	7.02287E-17	2.97862E-16	1.49839E-15	2.58523E-15	6.50197E-15
2759	0	0	0	1.04598E-16	6.75236E-16	1.42683E-15	3.85989E-15
3046	0	0	0	4.18772E-17	2.98194E-16	5.69013E-16	1.91463E-15
3363	0	2.92133E-17	5.52971E-17	2.33334E-16	1.33989E-15	2.27474E-15	7.295E-15
3714	6.46691E-17	1.41183E-16	1.75152E-16	4.57495E-16	2.25728E-15	3.93309E-15	1.06922E-14
4100	1.26476E-16	2.03279E-16	2.56678E-16	6.68908E-16	3.3912E-15	5.64648E-15	1.58723E-14
4527	5.21538E-17	1.69413E-16	2.37508E-16	7.3518E-16	4.06382E-15	6.6344E-15	2.20168E-14
4999	0	0	0	0	1.14835E-15	1.93608E-15	6.30268E-15
5519	0	0	0	0	0	0	1.79894E-15
6094	0	1.16465E-16	6.49505E-16	3.15712E-15	1.55684E-14	2.63685E-14	7.62579E-14
6728	1.02798E-15	2.22121E-15	3.15078E-15	7.96168E-15	3.83251E-14	6.65477E-14	2.00331E-13
7428	0	2.21294E-15	3.86321E-15	1.33565E-14	6.4858E-14	1.17634E-13	3.04091E-13
8202	0	0	6.78556E-15	3.36642E-14	1.75017E-13	3.11445E-13	1.07442E-12
9056	0	0	3.55285E-15	4.70263E-14	2.3124E-13	4.67246E-13	1.33456E-12
9999	0	0	3.6302E-15	2.01484E-13	1.05164E-12	1.83633E-12	5.50183E-12
11039	1.83205E-13	2.84776E-13	3.44064E-13	7.64084E-13	3.57753E-12	6.62747E-12	1.98397E-11
12189	2.28872E-13	3.3846E-13	3.9298E-13	8.4565E-13	4.02473E-12	7.18937E-12	1.96359E-11
13458	1.29626E-13	1.8476E-13	2.31816E-13	5.41096E-13	2.45161E-12	4.55071E-12	1.36502E-11
14859	3.07192E-14	6.99875E-14	8.7731E-14	2.28238E-13	1.093E-12	1.89829E-12	6.16962E-12
16406	0	7.95043E-15	1.38362E-14	4.33818E-14	1.91511E-13	3.519E-13	1.21891E-12
18114	0	0	0	0	3.14556E-16	8.99165E-16	4.21074E-15
20000	0	0	0	0	1.3791E-15	3.02484E-15	1.1109E-14

iHRA1 GW	Species	RWQS (mg/l)					
	Cu	2					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0
86	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0
100	0	0	0	0	0	0	5.04E-21
105	0	0	0	0	0	0	5.80E-21
116	0	0	0	0	0	0	9.48E-21
128	0	0	0	0	0	0	9.77E-21
141	0	0	0	0	0	0	2.62E-20
156	0	0	0	0	0	0	6.30E-19
172	0	0	0	0	0	0	8.60E-19
190	0	0	0	0	0	0	2.91E-17
210	0	0	0	0	0	0	7.24E-16
232	0	0	0	0	0	0	1.29E-14
256	0	0	0	0	0	1.49E-20	1.67E-13
282	0	0	0	0	0	3.11E-20	1.62E-12
300	0	0	0	0	0	5.46E-20	6.14E-12
312	0	0	0	0	0	7.94E-20	1.36E-11
344	0	0	0	0	0	3.77E-19	8.13E-11
380	0	0	0	0	4.50E-21	1.08E-17	3.59E-10
420	0	0	0	0	2.06E-20	2.32E-16	1.36E-09
464	0	0	0	0	2.07E-19	3.52E-15	4.40E-09
512	0	0	0	0	6.59E-18	3.92E-14	1.21E-08
565	0	0	0	0	1.55E-16	3.44E-13	2.92E-08
624	0	0	0	0	2.70E-15	2.45E-12	6.25E-08
689	0	0	0	0	3.39E-14	1.63E-11	1.20E-07
761	0	0	0	0	3.02E-13	8.99E-11	2.08E-07
840	0	0	0	0	2.12E-12	3.86E-10	3.25E-07
928	0	0	0	0	1.24E-11	1.35E-09	3.78E-07
1000	0	0	0	0	4.14E-11	2.81E-09	5.24E-07
1024	0	0	0	1.18E-20	5.92E-11	3.49E-09	5.82E-07
1131	0	0	0	3.14E-19	2.51E-10	8.03E-09	7.83E-07
1249	0	0	0	3.35E-18	7.98E-10	2.06E-08	9.05E-07
1379	0	0	0	7.65E-17	2.00E-09	4.13E-08	9.65E-07
1523	0	0	0	1.25E-15	4.79E-09	8.52E-08	9.65E-07
1681	0	0	0	1.47E-14	1.12E-08	1.23E-07	9.79E-07
1856	0	0	0	1.29E-13	2.17E-08	1.96E-07	9.71E-07
2050	0	0	0	9.34E-13	4.79E-08	3.09E-07	9.69E-07
2263	0	0	0	5.63E-12	8.32E-08	3.41E-07	1.06E-06
2499	0	0	7.49E-20	2.81E-11	1.27E-07	3.80E-07	1.22E-06
2759	0	0	2.46E-19	1.14E-10	1.87E-07	4.32E-07	1.18E-06
3046	0	0	5.56E-18	3.94E-10	2.22E-07	4.72E-07	1.31E-06
3363	0	0	1.11E-16	1.18E-09	2.57E-07	4.79E-07	1.38E-06
3714	0	0	1.66E-15	3.07E-09	2.98E-07	4.99E-07	1.52E-06
4100	0	7.89E-20	1.86E-14	6.78E-09	3.23E-07	4.97E-07	1.43E-06
4527	0	2.01E-18	1.63E-13	1.34E-08	3.60E-07	4.99E-07	1.34E-06
4999	0	4.26E-17	1.14E-12	2.42E-08	3.64E-07	5.58E-07	1.19E-06
5519	0	6.54E-16	6.45E-12	3.81E-08	3.72E-07	5.62E-07	1.08E-06
6094	0	7.53E-15	2.81E-11	5.73E-08	3.71E-07	5.60E-07	1.06E-06
6728	0	6.64E-14	1.12E-10	7.79E-08	3.69E-07	5.41E-07	1.12E-06
7428	0	4.67E-13	3.81E-10	9.97E-08	3.70E-07	5.23E-07	1.03E-06
8202	0	2.58E-12	1.01E-09	1.16E-07	3.67E-07	5.29E-07	1.05E-06
9056	0	1.18E-11	2.01E-09	1.23E-07	3.51E-07	4.99E-07	1.04E-06
9999	1.47E-18	4.56E-11	4.47E-09	1.28E-07	3.29E-07	4.67E-07	1.04E-06
11039	3.49E-17	1.31E-10	8.27E-09	1.29E-07	3.03E-07	4.43E-07	9.61E-07
12189	1.27E-16	2.69E-10	9.17E-09	1.29E-07	3.00E-07	3.94E-07	8.39E-07
13458	1.74E-15	5.53E-10	1.08E-08	1.24E-07	2.86E-07	3.69E-07	7.44E-07
14859	9.16E-15	8.34E-10	8.35E-09	1.16E-07	2.74E-07	3.55E-07	6.75E-07
16406	6.61E-14	9.20E-10	6.86E-09	1.04E-07	2.53E-07	3.39E-07	6.15E-07
18114	7.78E-14	6.68E-10	6.24E-09	9.45E-08	2.39E-07	3.07E-07	5.66E-07
20000	5.35E-14	4.87E-10	4.83E-09	8.14E-08	2.23E-07	2.96E-07	6.04E-07

iHRA1 GW	Species	RWQS (mg/l)					
	Hg	0.001					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0
86	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0
128	0	0	0	0	0	0	0
141	0	0	0	0	0	0	0
156	0	0	0	0	0	0	9.519E-20
172	0	0	0	0	0	5.95244E-20	1.96262E-18
190	0	0	0	0	1.34188E-19	1.40769E-18	3.19285E-17
210	0	0	0	0	2.95414E-18	2.41099E-17	4.11499E-16
232	0	0	0	0	4.72776E-17	3.08866E-16	4.25487E-15
256	0	0	0	3.99633E-20	5.51121E-16	3.00666E-15	3.19479E-14
282	0	0	0	8.75366E-19	4.89896E-15	2.29422E-14	1.86579E-13
300	0	0	0	5.32259E-18	1.77652E-14	7.51713E-14	5.25307E-13
312	0	0	0	1.62783E-17	3.89959E-14	1.53446E-13	9.76867E-13
344	0	0	0	2.13083E-16	2.42033E-13	8.08492E-13	4.1319E-12
380	0	0	0	2.20169E-15	1.26091E-12	3.7206E-12	1.59809E-11
420	0	0	0	1.89099E-14	5.49905E-12	1.49888E-11	5.39503E-11
464	0	0	0	1.30479E-13	2.09347E-11	5.09653E-11	1.63403E-10
512	0	0	0	6.99237E-13	6.45581E-11	1.48462E-10	4.33325E-10
565	0	0	0	3.24437E-12	1.78583E-10	3.63362E-10	9.19934E-10
624	0	0	3.09741E-19	1.22644E-11	4.37803E-10	7.98822E-10	1.8331E-09
689	0	0	6.60143E-18	4.01795E-11	9.38967E-10	1.61658E-09	3.27029E-09
761	0	0	1.02654E-16	1.1588E-10	1.83496E-09	2.94921E-09	5.23427E-09
840	0	0	1.1856E-15	2.93353E-10	3.20298E-09	4.90372E-09	7.88742E-09
928	0	1.78755E-19	1.09758E-14	6.63388E-10	5.22206E-09	7.30414E-09	1.14974E-08
1000	0	2.07448E-18	5.02377E-14	1.12131E-09	6.92049E-09	9.17385E-09	1.468E-08
1024	0	4.21721E-18	7.93881E-14	1.29375E-09	7.63458E-09	9.87326E-09	1.57176E-08
1131	0	7.23798E-17	4.77862E-13	2.35288E-09	1.03761E-08	1.32899E-08	2.11239E-08
1249	0	9.22662E-16	2.38765E-12	3.90514E-09	1.33279E-08	1.66934E-08	2.76819E-08
1379	0	8.89531E-15	9.81321E-12	5.58336E-09	1.58739E-08	1.9402E-08	3.46618E-08
1523	0	6.73793E-14	3.35851E-11	7.74955E-09	1.80762E-08	2.32598E-08	4.48691E-08
1681	0	4.02978E-13	9.99287E-11	9.42817E-09	1.97839E-08	2.69497E-08	5.81107E-08
1856	0	1.98103E-12	2.83362E-10	1.0593E-08	2.12899E-08	2.97802E-08	7.61664E-08
2050	0	8.65985E-12	7.044E-10	1.13788E-08	2.22082E-08	3.55729E-08	9.2813E-08
2263	1.38595E-18	3.15715E-11	1.38771E-09	1.14756E-08	2.32678E-08	4.14005E-08	1.08242E-07
2499	2.44648E-17	9.48353E-11	2.46447E-09	1.1273E-08	2.40562E-08	4.69731E-08	1.22607E-07
2759	3.18096E-16	2.46516E-10	3.40483E-09	1.0719E-08	2.52104E-08	5.41672E-08	1.38164E-07
3046	3.13683E-15	5.63131E-10	3.71113E-09	1.00024E-08	2.52031E-08	6.50202E-08	1.49402E-07
3363	2.46031E-14	1.0803E-09	3.10517E-09	9.1855E-09	2.42229E-08	8.46749E-08	1.55476E-07
3714	1.62965E-13	1.31941E-09	2.5104E-09	8.08163E-09	2.4419E-08	9.58051E-08	1.69264E-07
4100	8.65256E-13	1.16745E-09	1.90003E-09	6.90511E-09	2.30945E-08	1.05436E-07	1.8555E-07
4527	3.79936E-12	8.72022E-10	1.36587E-09	5.93006E-09	2.15052E-08	1.14658E-07	2.096E-07
4999	1.40308E-11	6.66751E-10	9.73805E-10	4.85012E-09	2.03497E-08	1.18829E-07	2.39153E-07
5519	4.4168E-11	4.45847E-10	6.9996E-10	3.88011E-09	1.89388E-08	1.20499E-07	2.67707E-07
6094	8.17909E-11	2.94199E-10	4.75058E-10	3.14975E-09	1.83902E-08	1.30963E-07	3.05583E-07
6728	6.98577E-11	1.81683E-10	2.99724E-10	2.42796E-09	1.85397E-08	1.3794E-07	3.27329E-07
7428	4.82292E-11	1.09363E-10	1.9484E-10	1.83899E-09	1.80875E-08	1.32397E-07	3.46676E-07
8202	2.8954E-11	6.35538E-11	1.18717E-10	1.36628E-09	1.69944E-08	1.3278E-07	3.91063E-07
9056	1.53386E-11	3.54481E-11	7.01266E-11	1.01915E-09	1.67079E-08	1.48822E-07	4.17941E-07
9999	7.38492E-12	1.97174E-11	3.89045E-11	7.2363E-10	1.57073E-08	1.33171E-07	4.67968E-07
11039	3.32524E-12	9.3075E-12	2.00644E-11	4.97816E-10	1.51249E-08	1.29338E-07	4.90458E-07
12189	1.3229E-12	4.3367E-12	9.671105E-12	3.33704E-10	1.38583E-08	1.23379E-07	5.10005E-07
13458	4.97644E-13	1.87968E-12	4.47796E-12	2.20314E-10	1.37127E-08	1.34324E-07	6.16289E-07
14859	1.6936E-13	7.29331E-13	2.00244E-12	1.38913E-10	1.35045E-08	1.57762E-07	6.29812E-07
16406	5.228E-14	2.60685E-13	8.25805E-13	8.42646E-11	1.3222E-08	1.57846E-07	6.35937E-07
18114	1.47505E-14	8.99487E-14	3.13967E-13	4.99033E-11	1.24917E-08	1.57892E-07	6.62197E-07
20000	3.74498E-15	2.86596E-14	1.10012E-13	2.86829E-11	1.14139E-08	1.57917E-07	6.72061E-07

iHRA1 GW	Species	RWQS (mg/l)					
	Ni	0.02					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	2.32983E-18
14	0	0	0	0	0	0	3.58172E-17
16	0	0	0	0	0	6.13398E-21	2.93613E-15
17	0	0	0	0	0	7.51165E-20	1.53049E-14
19	0	0	0	0	3.53353E-21	6.14792E-18	2.96524E-13
21	0	0	0	0	2.6663E-19	1.91114E-16	3.09686E-12
23	0	0	0	0	8.17677E-18	3.16746E-15	2.08711E-11
26	0	0	0	0	4.98494E-16	8.95776E-14	2.00177E-10
28	0	0	0	0	4.54789E-15	5.55472E-13	6.64448E-10
30	0	0	0	0	2.97419E-14	2.80376E-12	1.84308E-09
32	0	0	0	0	1.50704E-13	9.93403E-12	4.38642E-09
35	0	0	0	1.2497E-20	1.16699E-12	5.47841E-11	1.29816E-08
39	0	0	0	4.21856E-19	1.03655E-11	2.99035E-10	4.18904E-08
43	0	0	0	1.32921E-17	6.11157E-11	1.17827E-09	1.05879E-07
47	0	0	0	2.3235E-16	2.59123E-10	4.12234E-09	2.19151E-07
52	0	0	0	4.47428E-15	1.12742E-09	1.29244E-08	4.46737E-07
57	0	0	0	4.73399E-14	3.77968E-09	3.25908E-08	7.8083E-07
64	0	0	0	7.19651E-13	1.45082E-08	8.99864E-08	1.41289E-06
70	0	0	0	4.61601E-12	3.62617E-08	1.83858E-07	2.06645E-06
78	0	0	0	3.32254E-11	9.73687E-08	4.0966E-07	3.00069E-06
86	0	0	0	1.64185E-10	2.00079E-07	6.90478E-07	3.89963E-06
95	0	0	7.23058E-19	6.94396E-10	3.93495E-07	1.13523E-06	4.91032E-06
100	0	0	1.09517E-17	1.37232E-09	5.22524E-07	1.41742E-06	5.64666E-06
105	0	6.99168E-20	2.42929E-17	2.52628E-09	6.54555E-07	1.71926E-06	6.39432E-06
116	0	4.26093E-19	5.92677E-16	7.81401E-09	1.06102E-06	2.4408E-06	6.95674E-06
128	0	1.20592E-18	1.00055E-14	2.13302E-08	1.57894E-06	3.10037E-06	7.28113E-06
141	0	3.27195E-18	1.20698E-13	5.08388E-08	2.14201E-06	3.77616E-06	7.59712E-06
156	3.03602E-19	2.0831E-17	1.18761E-12	1.11012E-07	2.69423E-06	4.10364E-06	8.11451E-06
172	3.09243E-19	4.23749E-16	8.69978E-12	2.20802E-07	3.01421E-06	4.51014E-06	8.38183E-06
190	3.15631E-19	7.28481E-15	5.42093E-11	3.96719E-07	3.26131E-06	4.61495E-06	8.26002E-06
210	7.01434E-19	9.55188E-14	2.80239E-10	6.44121E-07	3.4366E-06	4.69709E-06	9.22801E-06
232	7.22222E-19	9.42289E-13	1.19509E-09	9.52599E-07	3.6613E-06	0.000004921	8.65369E-06
256	9.06427E-19	7.31371E-12	4.0494E-09	1.26879E-06	3.82561E-06	4.95534E-06	8.29706E-06
282	9.37464E-19	4.3943E-11	1.20123E-08	1.51892E-06	3.90316E-06	4.84467E-06	7.77642E-06
300	8.38269E-19	1.24957E-10	2.23686E-08	1.65094E-06	0.000003852	4.86645E-06	8.20679E-06
312	9.38149E-19	2.33074E-10	3.18841E-08	1.68273E-06	3.80296E-06	4.83326E-06	8.37664E-06
344	1.75465E-18	9.71407E-10	7.28286E-08	1.78034E-06	3.63886E-06	4.87026E-06	8.81239E-06
380	2.43284E-17	3.3006E-09	1.20018E-07	1.75127E-06	3.47734E-06	4.67825E-06	8.14061E-06
420	5.57194E-16	9.34954E-09	1.70692E-07	1.66954E-06	3.26648E-06	4.41741E-06	7.46897E-06
464	9.36468E-15	1.91352E-08	2.46088E-07	1.55881E-06	3.18157E-06	4.1989E-06	7.21436E-06
512	1.13677E-13	2.62361E-08	2.34827E-07	1.46743E-06	3.15464E-06	3.94776E-06	6.02341E-06
565	1.05944E-12	3.21069E-08	2.15273E-07	1.29655E-06	2.97402E-06	3.65024E-06	5.83893E-06
624	7.86886E-12	3.54006E-08	1.80867E-07	1.13603E-06	2.75707E-06	3.47554E-06	5.96565E-06
689	4.64966E-11	2.69622E-08	1.37733E-07	9.4253E-07	2.59423E-06	3.42337E-06	6.09597E-06
761	1.15684E-10	1.84198E-08	9.23498E-08	7.77367E-07	2.52573E-06	3.21347E-06	5.57779E-06
840	8.98546E-11	1.33135E-08	5.90045E-08	6.20003E-07	2.40005E-06	3.16359E-06	5.97021E-06
928	3.93533E-11	7.00167E-09	3.36901E-08	4.95458E-07	2.28831E-06	3.07122E-06	5.67392E-06
1000	3.11679E-11	4.84051E-09	2.25519E-08	4.05199E-07	2.17495E-06	3.02473E-06	5.92541E-06
1024	2.34337E-11	4.05556E-09	1.97682E-08	3.79122E-07	2.13908E-06	2.94318E-06	5.91783E-06
1131	7.89605E-12	1.67745E-09	1.18229E-08	2.85096E-07	2.01333E-06	2.76662E-06	5.61932E-06
1249	2.52022E-12	7.165E-10	5.97973E-09	2.07288E-07	1.89481E-06	2.6488E-06	5.4043E-06
1379	8.1499E-13	2.65695E-10	2.96908E-09	1.49682E-07	1.75398E-06	2.45807E-06	5.11114E-06
1523	1.49874E-13	9.14966E-11	1.26368E-09	1.06769E-07	1.71964E-06	2.34289E-06	4.60948E-06
1681	1.51534E-14	2.89024E-11	5.16569E-10	7.18654E-08	1.60717E-06	2.32921E-06	4.11866E-06
1856	3.52806E-15	7.32932E-12	2.01384E-10	4.83922E-08	1.49184E-06	2.20099E-06	3.60935E-06
2050	4.10731E-16	1.96862E-12	6.91746E-11	3.0351E-08	1.32245E-06	2.14079E-06	3.31697E-06
2263	5.64685E-17	4.65755E-13	2.19073E-11	1.87891E-08	1.23399E-06	0.000001908	3.10864E-06
2499	4.16732E-18	8.62458E-14	6.59712E-12	1.12621E-08	1.09961E-06	0.000001874	3.02123E-06
2759	4.68534E-19	1.12178E-14	1.78201E-12	6.41775E-09	1.01015E-06	1.78112E-06	2.89073E-06
3046	3.72921E-20	1.06284E-15	4.26182E-13	3.55671E-09	8.76695E-07	1.58969E-06	2.92321E-06
3363	9.00536E-20	2.53048E-16	9.04521E-14	1.90276E-09	7.1311E-07	1.4599E-06	3.02527E-06
3714	8.43462E-20	2.48454E-17	1.65397E-14	9.84019E-10	5.61162E-07	1.40189E-06	3.00389E-06
4100	2.07554E-20	1.58021E-18	2.73541E-15	4.61108E-10	4.67237E-07	1.20952E-06	2.79476E-06
4527	4.66198E-20	5.27578E-19	3.69572E-16	1.99651E-10	3.68343E-07	9.92661E-07	2.84248E-06
4999	0	1.92623E-19	3.77096E-17	8.49622E-11	2.73272E-07	9.20359E-07	2.63497E-06
5519	0	1.0432E-19	3.55609E-18	3.31528E-11	2.04715E-07	8.36518E-07	2.63425E-06
6094	0	2.14014E-19	9.97322E-19	1.22301E-11	1.54577E-07	6.9979E-07	2.42139E-06
6728	0	1.25919E-19	5.93536E-19	3.93069E-12	1.10727E-07	5.58904E-07	2.19076E-06
7428	0	1.78005E-19	1.29942E-18	1.12176E-12	7.76657E-08	4.35246E-07	2.07476E-06
8202	0	0	0	2.87142E-13	5.13615E-08	3.3409E-07	1.97347E-06
9056	0	1.79591E-18	4.66136E-18	6.44274E-14	3.34149E-08	2.51858E-07	1.8386E-06
9999	0	0	0	1.29281E-14	2.16853E-08	1.90919E-07	1.63447E-06
11039	0	0	1.10454E-19	1.83127E-15	1.30155E-08	1.41767E-07	1.39701E-06
12189	0	0	0	3.20989E-16	7.66839E-09	1.00708E-07	1.20734E-06
13458	0	0	0	1.13238E-16	4.48144E-09	6.98408E-08	1.08039E-06
14859	0	0	6.39047E-21	9.97193E-17	2.45063E-09	4.71782E-08	9.06316E-07
16406	0	2.01468E-17	4.91945E-17	2.27321E-16	1.29084E-09	3.09667E-08	7.43382E-07
18114	0	0	1.943E-20	2.52294E-18	6.74569E-10	1.96983E-08	6.00734E-07
20000	0	0	0	8.9984E-19	3.26132E-10	1.19212E-08	4.79756E-07

iHRA1 GW	Species	RWQS (mg/l)					
	SO4	250					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	4.62561E-09	1.50916E-08	1.58329E-06
2	8.86876E-06	0.00232225	0.00333769	0.00586826	0.0107199	0.0119448	0.0139392
3	0.00129898	0.0594369	0.0860444	0.15139	0.273965	0.307649	0.377285
4	0.0283976	0.257121	0.307024	0.524606	0.958367	1.10987	1.31625
5	0.17675	0.329862	0.372596	0.697188	1.60218	1.92471	2.47253
6	0.245033	0.29961	0.334592	0.647912	2.01812	2.57713	3.48181
7	0.225155	0.266883	0.295969	0.582368	2.19842	2.92772	4.25024
8	0.204194	0.240053	0.26731	0.530247	2.30292	3.2494	4.7336
9	0.184901	0.220121	0.24503	0.483811	2.34424	3.40523	5.16103
10	0.161585	0.195931	0.217645	0.431738	2.25424	3.54532	5.87175
11	0.140876	0.166375	0.186606	0.373384	2.12134	3.5378	5.73551
13	0.12198	0.145923	0.162568	0.322453	1.69235	3.29898	6.03766
14	0.112328	0.13455	0.150292	0.297814	1.57399	3.09793	6.12882
16	0.094188	0.114993	0.128939	0.253104	1.33281	2.81072	6.09472
17	0.0820004	0.0991481	0.111886	0.223322	1.23154	2.64622	6.29066
19	0.0666872	0.0804541	0.0908439	0.18157	1.03631	2.28159	5.94685
21	0.0566101	0.0689277	0.0768044	0.155012	0.859754	1.94256	5.68884
23	0.0492583	0.0600227	0.0675298	0.135954	0.743153	1.66549	5.09946
26	0.0403146	0.0489604	0.0551183	0.110519	0.593102	1.30574	4.28759
28	0.0318251	0.0385976	0.0435368	0.088136	0.500073	1.11633	3.80703
30	0.0240421	0.0286562	0.0327421	0.0669189	0.394983	0.927225	3.37793
32	0.0183028	0.0216699	0.0249959	0.0513303	0.310186	0.750673	3.04321
35	0.0140501	0.0164588	0.0190842	0.039353	0.220111	0.535782	2.55208
39	0.011136	0.0129327	0.0149052	0.0311856	0.162907	0.362573	1.98245
43	0.00863917	0.0102027	0.0117435	0.0247746	0.127638	0.268684	1.5453
47	0.00640619	0.00760648	0.00880143	0.0186851	0.0959352	0.20697	1.21346
52	0.0042942	0.0051433	0.00599512	0.0127177	0.0659815	0.144332	0.895744
57	0.00270062	0.00327315	0.00384045	0.00838779	0.0435711	0.0976387	0.658124
64	0.00164286	0.0020221	0.00236695	0.0052119	0.0259418	0.0558179	0.422386
70	0.000991033	0.0012494	0.00143735	0.00325578	0.0166846	0.0359012	0.290888
78	0.000633221	0.000814872	0.000945217	0.00218509	0.0108521	0.0214312	0.177705
86	0.000319138	0.000423693	0.00049117	0.00118718	0.00598564	0.0117713	0.109487
95	0.000179295	0.000240144	0.000277827	0.000690009	0.00336562	0.00637774	0.0633936
100	8.92384E-05	0.00012274	0.000142177	0.000368821	0.00197939	0.00414471	0.0471089
105	3.22259E-05	0.000043655	5.16868E-05	0.000140235	0.000861092	0.00201154	0.0341138
116	0.000010498	1.44918E-05	1.72967E-05	4.95192E-05	0.000262148	0.000513996	0.0158693
128	4.50E-06	6.30E-06	7.48E-06	2.27861E-05	0.000116946	0.000207287	0.00717594
141	1.98E-06	2.85E-06	3.43E-06	1.13E-05	5.54705E-05	9.68988E-05	0.00317647
156	1.03E-06	1.50E-06	1.83E-06	6.42E-06	3.09E-05	5.17E-05	1.30E-03
172	4.94E-07	7.24E-07	9.01E-07	3.27E-06	1.58E-05	2.74E-05	5.27E-04
190	1.64E-07	2.47E-07	3.11E-07	1.21E-06	5.87E-06	1.05E-05	1.92E-04
210	3.77E-08	5.72E-08	7.30E-08	3.19E-07	1.65E-06	2.78E-06	6.16E-05
232	7.55E-09	1.18E-08	1.56E-08	7.22E-08	3.93E-07	6.97E-07	1.77E-05
256	9.50E-10	1.71E-09	2.47E-09	1.35E-08	8.05E-08	1.47E-07	4.56E-06
282	5.25E-11	1.50E-10	2.41E-10	1.95E-09	1.33E-08	2.76E-08	1.07E-06
300	0.00E+00	1.58E-12	1.72E-11	2.43E-10	1.77E-09	3.87E-09	3.89E-07
312	0.00E+00	0.00E+00	0.00E+00	2.51E-11	1.87E-10	3.93E-10	2.00E-07
344	0.00E+00	0.00E+00	0.00E+00	5.02E-12	4.52E-11	9.49E-11	3.70E-08
380	0.00E+00	0.00E+00	2.29E-13	1.31E-12	1.01E-11	2.39E-11	5.73E-09
420	0.00E+00	1.00E-14	3.64E-14	3.63E-13	2.94E-12	7.08E-12	7.38E-10
464	1.01E-15	1.69E-14	3.01E-14	1.67E-13	1.00E-12	2.13E-12	7.96E-11
512	0.00E+00	1.40E-15	8.74E-15	5.81E-14	3.41E-13	7.49E-13	8.56E-12
565	0.00E+00	0.00E+00	0.00E+00	2.87E-14	1.78E-13	4.40E-13	2.06E-12
624	0	0	4.70904E-16	3.10E-14	1.49E-13	2.51E-13	1.13E-12
689	0	2.29095E-14	3.66465E-14	1.0958E-13	5.17E-13	1.06E-12	3.12E-12
761	0	0	0	9.0918E-14	6.97663E-13	1.41687E-12	3.47215E-12
840	0	0	0	0	5.44216E-13	1.06288E-12	3.51728E-12
928	0	0	0	4.61106E-14	3.29324E-12	7.15216E-12	2.77682E-11
1000	0	0	0	6.32127E-13	4.31826E-12	8.5542E-12	2.11282E-11
1024	5.87347E-13	1.01595E-12	1.27732E-12	3.05398E-12	1.4214E-11	2.64186E-11	6.26783E-11
1131	6.42075E-13	1.01237E-12	1.2504E-12	2.79112E-12	1.38144E-11	2.24101E-11	7.43524E-11
1249	4.08832E-13	5.95764E-13	7.42573E-13	1.6548E-12	7.97998E-12	1.38315E-11	3.97954E-11
1379	5.92438E-14	1.16353E-13	1.46725E-13	3.65024E-13	1.62532E-12	3.23501E-12	7.72681E-12
1523	0	6.73337E-16	1.57229E-15	1.12267E-14	6.87641E-14	1.30733E-13	3.58851E-13
1681	0	1.05084E-15	3.48021E-15	1.45185E-14	7.78474E-14	1.37375E-13	4.09856E-13
1856	2.12302E-15	6.12233E-15	8.58859E-15	2.61416E-14	1.41433E-13	2.55847E-13	6.40444E-13
2050	0	6.18598E-15	9.13858E-15	2.60907E-14	1.29335E-13	2.52991E-13	7.15745E-13
2263	0	0	3.87696E-16	6.89238E-15	3.65939E-14	6.93894E-14	1.82214E-13
2499	0	0	0	0	2.40945E-15	6.00065E-15	2.52662E-14
2759	0	0	0	4.66296E-16	3.61429E-15	7.4865E-15	3.11718E-14
3046	0	0	0	3.14571E-16	3.10845E-15	6.30794E-15	2.33873E-14
3363	2.64208E-16	7.44379E-16	1.05311E-15	2.93788E-15	1.39936E-14	2.5136E-14	7.32943E-14
3714	1.81737E-15	2.67979E-15	3.31087E-15	6.87361E-15	3.30211E-14	6.27988E-14	1.90572E-13
4100	2.95156E-15	4.10091E-15	4.9961E-15	1.04755E-14	5.00944E-14	9.66418E-14	2.46411E-13
4527	2.63879E-15	4.23538E-15	5.53714E-15	1.24166E-14	5.93314E-14	1.05429E-13	2.60838E-13
4999	0	0	0	1.77324E-15	1.83475E-14	3.68825E-14	1.55955E-13
5519	0	0	0	0	0	1.71414E-16	6.14814E-14
6094	0	0	0	1.43711E-14	8.53676E-14	1.68646E-13	5.9272E-13
6728	0	1.0598E-14	1.80991E-14	5.68822E-14	2.72207E-13	4.97409E-13	1.84851E-12
7428	0	0	1.88547E-14	1.05694E-13	4.72205E-13	8.49582E-13	3.17963E-12
8202	0	0	9.0639E-14	3.44167E-13	1.58944E-12	2.88425E-12	9.02088E-12
9056	0	0	0	4.83224E-13	2.61419E-12	4.632E-12	1.77169E-11
9999	0	0	2.76341E-13	2.22823E-12	1.13561E-11	2.01688E-11	6.2601E-11
11039	1.7781E-12	2.78834E-12	3.36783E-12	7.31743E-12	3.45325E-11	5.96583E-11	1.54716E-10
12189	2.13609E-12	3.00955E-12	3.50516E-12	7.85543E-12	3.60473E-11	6.1367E-11	1.69321E-10
13458	9.09298E-13	1.46878E-12	1.97029E-12	4.60599E-12	2.24166E-11	3.97464E-11	1.0604E-10
14859	1.47722E-13	4.582E-13	6.6817E-13	1.93831E-12	9.12428E-12	1.6557E-11	4.14755E-11
16406	0	5.07037E-14	9.9432E-14	3.84724E-13	1.76195E-12	2.97736E-12	9.31374E-12
18114	0	0	0	0	0	3.48927E-15	5.58229E-14
20000	0	0	0	0	7.18466E-15	1.52991E-14	6.13045E-14

iHRA1 GW	Species	RWQS (mg/l)					
	Zn	5					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	6.08188E-19
7	0	0	0	0	0	0	3.45762E-17
8	0	0	0	0	0	1.88745E-20	2.76018E-13
9	0	0	0	0	0	2.38384E-19	7.38549E-11
10	0	0	0	0	0	2.10321E-17	8.78401E-10
11	0	0	0	0	5.03076E-21	2.22083E-15	5.64554E-09
13	0	0	0	0	6.29103E-18	4.99598E-13	8.56696E-08
14	0	0	0	0	1.00675E-16	3.43304E-12	2.33912E-07
16	0	0	0	0	1.4237E-14	6.33192E-11	9.91346E-07
17	0	0	0	0	6.54777E-14	2.29732E-10	1.78136E-06
19	0	0	0	0	1.73323E-12	1.64355E-09	4.76642E-06
21	0	0	0	0	1.65032E-11	7.87432E-09	0.000010734
23	0	0	0	0	1.07971E-10	2.90035E-08	2.01664E-05
26	0	0	0	4.62629E-19	9.58028E-10	1.4684E-07	3.25781E-05
28	0	0	0	3.59191E-18	3.15135E-09	3.25108E-07	4.20806E-05
30	0	0	0	3.57209E-17	8.78958E-09	6.22176E-07	4.91883E-05
32	0	0	0	3.30231E-16	2.0927E-08	1.08566E-06	5.66221E-05
35	0	0	0	5.40347E-15	6.73457E-08	2.15901E-06	6.33402E-05
39	0	0	0	1.22793E-13	2.17529E-07	4.15985E-06	6.43373E-05
43	0	0	0	1.41551E-12	5.9514E-07	7.65877E-06	6.11721E-05
47	0	0	2.38887E-20	1.05852E-11	1.26456E-06	1.19002E-05	6.95766E-05
52	0	0	1.14881E-19	8.19775E-11	2.60306E-06	1.72915E-05	7.53563E-05
57	0	0	3.74423E-19	4.22396E-10	4.61814E-06	2.25986E-05	7.49316E-05
64	0	0	5.04787E-18	2.68961E-09	7.93559E-06	2.75121E-05	0.000075532
70	0	0	1.18737E-16	9.1347E-09	1.14037E-05	3.14163E-05	0.000074425
78	0.00E+00	0.00E+00	3.89E-15	3.6374E-08	1.62324E-05	3.33946E-05	7.94334E-05
86	0.00E+00	1.02E-19	6.99E-14	1.03E-07	1.97493E-05	3.48699E-05	7.36089E-05
95	0.00E+00	1.62E-18	8.21E-13	2.66E-07	2.11E-05	3.40E-05	7.52E-05
100	2.94E-19	1.33E-16	2.64E-12	4.18E-07	2.22E-05	3.36E-05	8.37E-05
105	3.54E-19	1.62E-16	7.72E-12	6.10E-07	2.35E-05	3.36E-05	8.72E-05
116	4.33E-19	1.89E-15	5.84E-11	1.26E-06	2.51E-05	3.40E-05	7.69E-05
128	6.91E-19	3.37E-14	3.51E-10	2.29E-06	2.60E-05	3.41E-05	6.79E-05
141	2.86E-18	4.48E-13	1.77E-09	3.77E-06	2.63E-05	3.51E-05	7.10E-05
156	1.18E-17	5.02E-12	7.19E-09	5.50E-06	2.66E-05	3.56E-05	7.76E-05
172	1.21E-17	4.01E-11	2.52E-08	6.94E-06	2.53E-05	3.44E-05	6.75E-05
190	1.24E-17	2.64E-10	6.97E-08	8.23E-06	2.55E-05	3.29E-05	7.54E-05
210	1.18E-17	1.41E-09	1.46E-07	9.12E-06	2.48E-05	3.23E-05	7.96E-05
232	1.21E-17	6.18E-09	2.85E-07	9.69E-06	2.29E-05	3.20E-05	8.20E-05
256	1.23E-17	7.15E-09	5.89E-07	9.57E-06	2.20E-05	3.02E-05	7.98E-05
282	3.48E-17	1.42E-08	6.45E-07	9.27E-06	2.13E-05	2.92E-05	6.58E-05
300	2.50E-16	1.81E-08	6.53E-07	9.13E-06	2.16E-05	2.86E-05	6.19E-05
312	8.57E-16	2.52E-08	5.85E-07	8.96E-06	2.14E-05	2.75E-05	5.90E-05
344	1.49E-14	3.71E-08	5.59E-07	8.55E-06	1.98E-05	2.60E-05	6.00E-05
380	2.03E-13	2.72E-08	3.85E-07	7.67E-06	1.92E-05	2.53E-05	5.16E-05
420	3.72E-13	2.89E-08	3.33E-07	7.15E-06	1.85E-05	2.33E-05	4.43E-05
464	4.32E-13	2.23E-08	2.13E-07	6.20E-06	1.76E-05	2.29E-05	4.08E-05
512	4.75E-13	9.02E-09	1.48E-07	5.09E-06	1.61E-05	2.26E-05	3.62E-05
565	1.47E-13	3.08E-09	8.70E-08	4.14E-06	1.56E-05	2.09E-05	3.44E-05
624	1.61E-14	2.16E-09	3.66E-08	3.31E-06	1.51E-05	1.99E-05	3.56E-05
689	9.43212E-15	8.31071E-10	1.78E-08	2.53E-06	1.40E-05	1.95E-05	3.60E-05
761	1.40727E-15	4.05502E-10	8.46536E-09	1.94329E-06	1.33E-05	1.82E-05	3.53E-05
840	0	1.00848E-10	4.06811E-09	1.42991E-06	1.23133E-05	1.71E-05	3.20E-05
928	5.36187E-16	2.26129E-11	1.59059E-09	1.00774E-06	0.000011402	1.60678E-05	3.06029E-05
1000	1.21036E-16	9.76027E-12	6.41898E-10	7.63449E-07	1.07947E-05	1.56746E-05	3.00036E-05
1024	0	6.82825E-12	3.65707E-10	7.02107E-07	1.07113E-05	1.55628E-05	2.99091E-05
1131	5.22259E-16	2.19568E-12	1.46706E-10	5.01167E-07	1.00688E-05	0.000014646	2.91659E-05
1249	1.80387E-16	3.67152E-13	4.75866E-11	3.37897E-07	9.15442E-06	1.45686E-05	2.99635E-05
1379	0	1.09781E-13	1.18441E-11	2.23053E-07	8.1293E-06	0.000013514	2.83401E-05
1523	0	4.11319E-15	1.98454E-12	1.40492E-07	6.91626E-06	1.22923E-05	2.62846E-05
1681	3.3191E-18	1.76865E-15	3.67942E-13	8.65037E-08	5.96226E-06	1.19995E-05	2.49519E-05
1856	6.02491E-19	5.75217E-16	6.30555E-14	5.17721E-08	5.11855E-06	1.11192E-05	2.28148E-05
2050	0	4.03174E-17	1.03963E-14	2.89333E-08	4.33377E-06	9.55876E-06	0.000021428
2263	0	6.36327E-18	1.50919E-15	1.55368E-08	3.94801E-06	8.21355E-06	2.19839E-05
2499	0	5.26982E-18	3.28542E-16	7.64074E-09	3.4085E-06	7.64289E-06	1.94187E-05
2759	0	2.15181E-18	5.00106E-17	3.71214E-09	2.7595E-06	6.85489E-06	1.86262E-05
3046	0	4.75174E-19	3.93315E-18	1.6891E-09	2.13039E-06	6.62063E-06	1.75533E-05
3363	0	2.18406E-19	1.54559E-18	7.05985E-10	1.67754E-06	5.61793E-06	1.62694E-05
3714	0	5.32495E-19	2.0304E-18	2.68863E-10	1.27322E-06	4.57543E-06	1.48401E-05
4100	0	6.69897E-19	1.76031E-18	9.21138E-11	9.49324E-07	3.87279E-06	1.28455E-05
4527	0	7.01338E-19	1.3434E-18	3.14062E-11	6.9323E-07	3.12233E-06	1.18149E-05
4999	0	0	3.08057E-19	9.70084E-12	4.95092E-07	2.50816E-06	1.11844E-05
5519	0	0	1.20136E-19	2.46621E-12	3.45585E-07	1.98565E-06	1.06606E-05
6094	0	3.11723E-19	1.00935E-18	5.93039E-13	2.34977E-07	1.53783E-06	1.00211E-05
6728	0	0	1.82159E-19	1.28036E-13	1.55445E-07	1.17037E-06	9.27036E-06
7428	0	0	0	2.22998E-14	9.9738E-08	8.73927E-07	8.44548E-06
8202	0	0	1.30038E-18	3.58855E-15	6.18481E-08	6.39086E-07	7.67586E-06
9056	0	0	9.35239E-18	5.90541E-16	3.69837E-08	4.57264E-07	7.13277E-06
9999	0	0	0	4.68638E-16	2.17953E-08	2.99519E-07	6.5264E-06
11039	0	0	0	3.32005E-16	1.17767E-08	2.0495E-07	5.23932E-06
12189	0	0	0	2.8209E-16	6.10828E-09	1.36318E-07	4.27533E-06
13458	0	0	0	3.48566E-16	2.90616E-09	8.7482E-08	3.3246E-06
14859	0	0	2.67595E-20	5.39599E-16	1.26559E-09	5.34951E-08	2.73794E-06
16406	0	1.21939E-16	3.35387E-16	1.59129E-15	5.12612E-10	3.25784E-08	2.22178E-06
18114	0	0	5.08172E-20	3.49169E-18	1.93605E-10	1.90908E-08	1.77556E-06
20000	0	0	0	3.63865E-18	7.25306E-11	1.0585E-08	1.39757E-06

s1HRA1 GW	Species	RWQS (mg/l)					
	NH3-	0.5					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	8.601E-21	1.92805E-19
2	0	0	0	4.08527E-20	3.19004E-15	1.46659E-14	1.59119E-13
3	0	0	0	3.97578E-17	2.65269E-12	1.32059E-11	1.84259E-10
4	0	0	0	4.85364E-16	5.14524E-10	2.39181E-09	1.87568E-08
5	0	0	0	1.16704E-12	4.70371E-08	1.82144E-07	7.37429E-07
6	0	0	4.14863E-18	3.45948E-10	2.21679E-06	5.46342E-06	1.41329E-05
7	5.83719E-17	5.27564E-14	5.39862E-10	1.18606E-05	9.55076E-05	0.000123166	0.000185429
8	6.08731E-17	3.62398E-10	3.99005E-07	8.78723E-05	0.000233956	0.000288662	0.000357646
9	2.4219E-15	5.18812E-08	6.27371E-06	0.000157841	0.000302448	0.000378542	0.000446356
10	1.31734E-13	9.17404E-07	2.69554E-05	0.00018998	0.00034706	0.000418731	0.000517376
11	2.20719E-11	4.45583E-06	6.31318E-05	0.000194591	0.000368379	0.00044458	0.000584736
13	8.51866E-09	2.99033E-05	8.26241E-05	0.000183675	0.000386122	0.000471882	0.000733332
14	5.49609E-08	4.71558E-05	7.67587E-05	0.000177786	0.000389766	0.000484673	0.000749973
16	7.43461E-07	0.000046274	6.05049E-05	0.000152186	0.000398717	0.000495336	0.000752668
17	1.90653E-06	4.12356E-05	5.36836E-05	0.000140345	0.0003982	0.000498259	0.000769285
19	7.4484E-06	3.13455E-05	3.87351E-05	0.000110042	0.000385978	0.000496843	0.000838621
21	1.34695E-05	2.33709E-05	2.85524E-05	8.76612E-05	0.000357051	0.000482979	0.000802147
23	1.04006E-05	1.63488E-05	2.02567E-05	6.84537E-05	0.000330519	0.000482112	0.000793787
26	6.7088E-06	1.00739E-05	1.26401E-05	4.49881E-05	0.000305759	0.000468761	0.000758141
28	4.7177E-06	7.12631E-06	8.9037E-06	3.44186E-05	0.000289475	0.000444852	0.000752779
30	3.54313E-06	5.01708E-06	6.29323E-06	2.59165E-05	0.000275096	0.000425751	0.000749639
32	2.3863E-06	3.30116E-06	4.19429E-06	0.000019266	0.000272957	0.000411404	0.000710752
35	1.25189E-06	1.74894E-06	2.23768E-06	1.20448E-05	0.000250404	0.000393141	0.000636891
39	5.8312E-07	8.92722E-07	1.12306E-06	6.48363E-06	0.000214435	0.000355561	0.000583037
43	2.67596E-07	4.02851E-07	5.24534E-07	3.52252E-06	0.000180323	0.000343084	0.000533024
47	1.43823E-07	2.09643E-07	2.74024E-07	1.95666E-06	0.000152365	0.000313463	0.000523926
52	7.24248E-08	1.06782E-07	1.44658E-07	9.55965E-07	0.00013641	0.000269698	0.000508838
57	3.97466E-08	5.79663E-08	7.99382E-08	4.98853E-07	0.000106742	0.000231978	0.000490487
64	1.60284E-08	2.38169E-08	3.20304E-08	2.03155E-07	7.82687E-05	0.000191294	0.000475134
70	5.36022E-09	8.52464E-09	1.18037E-08	8.95364E-08	5.78321E-05	0.000159547	0.000475181
78	1.62454E-09	2.59221E-09	3.4967E-09	3.10252E-08	4.05069E-05	0.000126179	0.000441047
86	5.08459E-10	8.02594E-10	1.09655E-09	1.08523E-08	2.95513E-05	0.000100389	0.000427531
95	1.15204E-10	1.98389E-10	2.68438E-10	3.14062E-09	2.05753E-05	7.73506E-05	0.000424299
100	3.91144E-11	6.78245E-11	9.61589E-11	1.50019E-09	1.67266E-05	6.74153E-05	0.000387288
105	1.19792E-11	1.98997E-11	3.03119E-11	6.58895E-10	1.36465E-05	5.88917E-05	0.000377937
116	6.77218E-12	9.61211E-12	1.24326E-11	1.32345E-10	8.81426E-06	4.38222E-05	0.000335891
128	3.14967E-12	4.47853E-12	5.63002E-12	3.38188E-11	5.51356E-06	3.12363E-05	0.000283516
141	6.19282E-13	9.63334E-13	1.20882E-12	7.61667E-12	0.000003445	2.26434E-05	0.000244241
156	0	0	0	9.15151E-13	1.98792E-06	1.58157E-05	0.000205824
172	0	0	2.69456E-14	7.11507E-13	1.17234E-06	1.03329E-05	0.000171932
190	2.1715E-14	1.21126E-13	2.41777E-13	9.53442E-13	6.65735E-07	6.65555E-06	0.000146225
210	2.3241E-14	4.88352E-14	7.36305E-14	4.75445E-13	3.44407E-07	4.44486E-06	0.000123849
232	0	5.75599E-16	9.50389E-16	8.85078E-14	1.6875E-07	2.88901E-06	0.000103447
256	0	0	0	1.48436E-15	7.90203E-08	1.70499E-06	8.53484E-05
282	0	0	0	2.70975E-17	3.66586E-08	9.48606E-07	6.96495E-05
300	0.00E+00	1.08754E-17	1.592E-17	1.42746E-16	2.17037E-08	6.3873E-07	6.06933E-05
312	0.00E+00	2.19E-18	1.57825E-17	9.23287E-17	1.53491E-08	4.96997E-07	5.54471E-05
344	0.00E+00	0.00E+00	0.00E+00	3.19744E-17	6.09154E-09	2.57049E-07	4.06056E-05
380	0.00E+00	0.00E+00	3.98E-20	1.36E-17	2.09181E-09	1.34779E-07	2.88521E-05
420	0.00E+00	1.95E-18	3.04E-18	1.08E-17	6.47951E-10	6.90955E-08	1.99689E-05
464	1.01E-18	1.97E-18	2.63E-18	8.19E-18	1.81E-10	3.36191E-08	1.40496E-05
512	0.00E+00	0.00E+00	0.00E+00	1.56E-18	4.55E-11	1.52E-08	1.01193E-05
565	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.00E-11	6.04E-09	7.12E-06
624	0.00E+00	0.00E+00	0.00E+00	9.08E-18	1.90E-12	2.19E-09	4.87E-06
689	0.00E+00	9.42E-18	1.70E-17	6.21E-17	3.08E-13	7.26E-10	3.25E-06
761	0.00E+00	0.00E+00	0.00E+00	1.69E-16	4.29E-14	2.17E-10	2.10E-06
840	0.00E+00	0.00E+00	6.11E-17	4.23E-16	6.00E-15	5.73E-11	1.31E-06
928	0.00E+00	1.99E-16	3.13E-16	9.37E-16	1.04E-14	1.33E-11	7.90E-07
1000	0.00E+00	9.52E-17	2.32E-16	8.74E-16	5.53E-15	1.44E-12	5.27E-07
1024	0.00E+00	0.00E+00	0.00E+00	1.51E-17	1.90E-15	9.28E-13	4.60E-07
1131	0.00E+00	0.00E+00	0.00E+00	8.58E-18	1.21E-15	2.37E-13	2.55E-07
1249	0.00E+00	8.92E-17	2.58E-16	1.04E-15	5.84E-15	7.37E-14	1.35E-07
1379	3.19E-16	6.61E-16	8.21E-16	1.90E-15	9.88E-15	3.16E-14	6.79E-08
1523	0.00E+00	0.00E+00	0.00E+00	2.23E-18	1.34E-17	2.78E-16	3.22E-08
1681	0.00E+00	0.00E+00	1.16E-19	2.60E-18	1.30E-17	3.90E-17	1.44E-08
1856	0.00E+00	0.00E+00	2.26E-19	1.78E-18	1.35E-17	5.28E-17	5.97E-09
2050	0.00E+00	3.64E-19	9.79E-19	4.64E-18	2.86E-17	7.20E-17	2.11E-09
2263	0.00E+00	0.00E+00	1.89E-19	3.25E-18	1.79E-17	3.51E-17	6.54E-10
2499	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.41E-18	8.55E-18	1.81E-10
2759	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.50E-19	3.69E-18	4.49E-11
3046	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.16E-19	1.91E-18	9.71E-12
3363	0	0.00E+00	0.00E+00	1.57E-19	2.46E-18	6.07E-18	1.82E-12
3714	0	0	2.54336E-19	1.70E-18	8.91E-18	1.72E-17	2.92E-13
4100	0	8.31752E-19	1.34811E-18	4.06E-18	1.87E-17	3.43E-17	3.90E-14
4527	0	9.97024E-19	1.70379E-18	5.82179E-18	3.02E-17	6.04E-17	4.40E-15
4999	0	0	0	0	1.48E-18	4.31E-18	2.88E-16
5519	0	0	0	0	6.64E-18	1.52E-17	1.43E-16
6094	0	0	0	1.82273E-18	3.19005E-17	6.02E-17	3.62E-16
6728	0	0	0	2.74604E-17	1.65934E-16	2.98696E-16	1.34E-15
7428	0	0	0	9.35146E-17	5.9052E-16	1.30598E-15	3.05108E-15
8202	0	1.00875E-16	1.6484E-16	5.20893E-16	2.40185E-15	4.82282E-15	1.08507E-14
9056	0	0	0	3.1422E-16	1.52291E-15	2.55353E-15	6.85079E-15
9999	5.61826E-16	1.16528E-15	1.59273E-15	4.06084E-15	1.81168E-14	3.76145E-14	9.73644E-14
11039	0	0	0	1.31136E-19	8.25951E-15	1.45344E-14	3.71862E-14
12189	4.47333E-20	4.02579E-16	8.86871E-16	3.77674E-15	1.96753E-14	3.722E-14	9.51234E-14
13458	2.11158E-20	5.48959E-17	4.31001E-16	2.05959E-15	9.02946E-15	2.02162E-14	5.67785E-14
14859	1.00352E-15	1.58186E-15	1.98582E-15	4.5811E-15	2.16887E-14	3.86162E-14	1.11265E-13
16406	3.37257E-17	5.55431E-16	7.30398E-16	2.00652E-15	9.78101E-15	1.70969E-14	4.62702E-14
18114	0	0	0	0	5.60247E-18	1.40137E-17	7.03957E-17
20000	0	0	0	0	1.74991E-17	3.77152E-17	1.46542E-16

s1HRA1 GW	Species	RWQS (mg/l)					
	As	0.01					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	4.20E-19
10	0	0	0	0	1.20E-20	4.79E-19	4.76E-17
11	0	0	0	0	8.37E-19	2.46E-17	1.26E-15
13	0	0	0	0	4.15E-16	5.94E-15	1.78E-13
14	0	0	0	1.10E-20	4.54E-15	5.27E-14	1.21E-12
16	0	0	0	2.66E-18	2.07E-13	1.76E-12	2.57E-11
17	0	0	0	2.60E-17	9.52E-13	6.62E-12	8.56E-11
19	0	0	0	1.05E-15	1.16E-11	6.10E-11	5.88E-10
21	0	0	0	2.06E-14	8.11E-11	3.72E-10	2.61E-09
23	0	0	0	2.29E-13	3.89E-10	1.67E-09	9.19E-09
26	0	0	1.71E-19	4.09E-12	2.60E-09	9.60E-09	4.06E-08
28	0	0	2.24E-19	1.96E-11	7.08E-09	2.40E-08	8.55E-08
30	0	9.46E-20	6.47E-19	7.45E-11	1.71E-08	5.07E-08	1.69E-07
32	0	9.71E-20	1.16E-18	2.34E-10	3.71E-08	9.79E-08	3.03E-07
35	0	2.46E-19	3.48E-18	9.88E-10	9.24E-08	2.18E-07	6.25E-07
39	0	2.68E-19	9.24E-17	4.67E-09	2.45E-07	5.21E-07	1.33E-06
43	0	5.39E-19	2.20E-15	1.60E-08	5.28E-07	1.02E-06	2.36E-06
47	0	9.69E-19	3.02E-14	4.43E-08	9.76E-07	1.73E-06	3.70E-06
52	0	3.06E-18	4.35E-13	1.21E-07	1.79E-06	2.93E-06	5.69E-06
57	0	5.44E-17	3.69E-12	2.77E-07	2.84E-06	4.54E-06	7.87E-06
64	0	2.13E-15	4.04E-11	6.76E-07	4.74E-06	6.95E-06	1.11E-05
70	0	2.87E-14	2.10E-10	1.20E-06	6.55E-06	9.28E-06	1.36E-05
78	0	4.96E-13	1.27E-09	2.21E-06	9.12E-06	1.22E-05	1.72E-05
86	0	4.91E-12	5.30E-09	3.53E-06	1.16E-05	1.48E-05	2.10E-05
95	0	3.97E-11	1.94E-08	5.28E-06	1.41E-05	1.76E-05	2.31E-05
100	7.49E-17	1.07E-10	3.56E-08	6.40E-06	1.51E-05	1.90E-05	2.47E-05
105	8.55E-17	2.59E-10	6.13E-08	7.55E-06	1.62E-05	2.04E-05	2.59E-05
116	9.42E-17	1.36E-09	1.67E-07	9.73E-06	1.86E-05	2.24E-05	2.88E-05
128	2.77E-16	5.57E-09	4.04E-07	1.18E-05	2.06E-05	2.41E-05	3.02E-05
141	4.17E-15	1.85E-08	8.64E-07	1.35E-05	2.20E-05	2.51E-05	3.33E-05
156	6.76E-14	6.14E-08	1.60E-06	1.48E-05	2.34E-05	2.62E-05	3.52E-05
172	7.61E-13	1.74E-07	2.80E-06	1.52E-05	2.39E-05	2.82E-05	3.88E-05
190	6.95E-12	4.27E-07	4.63E-06	1.56E-05	2.51E-05	2.93E-05	4.11E-05
210	5.07E-11	9.24E-07	6.88E-06	1.56E-05	2.61E-05	3.02E-05	4.08E-05
232	2.96E-10	1.74E-06	7.28E-06	1.49E-05	2.68E-05	3.12E-05	4.05E-05
256	1.40E-09	3.01E-06	6.48E-06	1.42E-05	2.72E-05	3.17E-05	4.29E-05
282	5.55E-09	3.98E-06	5.53E-06	1.30E-05	2.67E-05	3.22E-05	4.38E-05
300	1.28E-08	3.82E-06	5.02E-06	1.19E-05	2.62E-05	3.19E-05	4.39E-05
312	2.11E-08	3.49E-06	4.55E-06	1.14E-05	2.62E-05	3.20E-05	4.27E-05
344	6.61E-08	2.45E-06	3.38E-06	9.77E-06	2.61E-05	3.18E-05	4.25E-05
380	1.85E-07	1.63E-06	2.42E-06	8.11E-06	2.58E-05	3.18E-05	4.27E-05
420	4.24E-07	1.06E-06	1.63E-06	6.46E-06	2.44E-05	3.08E-05	4.16E-05
464	4.05E-07	7.03E-07	1.08E-06	4.96E-06	2.35E-05	2.99E-05	4.08E-05
512	2.47E-07	4.47E-07	7.03E-07	3.69E-06	2.25E-05	3.05E-05	4.22E-05
565	1.40E-07	2.84E-07	4.40E-07	2.66E-06	2.19E-05	2.98E-05	3.95E-05
624	7.68E-08	1.62E-07	2.64E-07	1.91E-06	2.00E-05	2.84E-05	3.94E-05
689	3.82E-08	8.64E-08	1.47E-07	1.33E-06	1.99E-05	2.73E-05	3.87E-05
761	1.65E-08	4.13E-08	7.72E-08	8.66E-07	1.83E-05	2.62E-05	3.80E-05
840	6.83E-09	1.84E-08	3.73E-08	5.52E-07	1.63E-05	2.50E-05	3.79E-05
928	2.48E-09	7.48E-09	1.70E-08	3.33E-07	1.47E-05	2.40E-05	3.59E-05
1000	1.04E-09	3.53E-09	9.05E-09	2.24E-07	1.34E-05	2.27E-05	3.56E-05
1024	7.75E-10	2.75E-09	7.36E-09	1.95E-07	1.28E-05	2.24E-05	3.50E-05
1131	1.62E-10	7.21E-10	2.54E-09	1.07E-07	1.11E-05	2.16E-05	3.32E-05
1249	3.57E-11	1.87E-10	8.21E-10	5.35E-08	9.33E-06	2.04E-05	3.32E-05
1379	7.83E-12	4.63E-11	2.36E-10	2.70E-08	7.65E-06	1.89E-05	3.39E-05
1523	1.73E-12	1.14E-11	6.38E-11	1.35E-08	6.05E-06	1.62E-05	3.55E-05
1681	4.40E-13	2.83E-12	1.66E-11	6.11E-09	4.59E-06	1.37E-05	3.30E-05
1856	1.59E-13	6.96E-13	4.71E-12	2.62E-09	3.59E-06	1.19E-05	3.11E-05
2050	1.09E-14	1.19E-13	8.45E-13	1.08E-09	2.70E-06	9.57E-06	3.05E-05
2263	2.88E-15	1.37E-14	1.21E-13	4.11E-10	1.99E-06	7.57E-06	3.03E-05
2499	3.63E-16	3.21E-15	2.45E-14	1.42E-10	1.43E-06	5.95E-06	2.77E-05
2759	7.00E-17	6.25E-16	4.04E-15	4.56E-11	9.96E-07	4.75E-06	2.51E-05
3046	2.32E-17	9.89E-17	3.66E-16	1.34E-11	6.77E-07	3.64E-06	2.29E-05
3363	0	9.39E-18	3.89E-17	3.33E-12	4.48E-07	2.77E-06	2.06E-05
3714	0	0	3.34E-18	7.24E-13	2.87E-07	2.07E-06	1.84E-05
4100	0	8.40E-20	1.02E-18	1.39E-13	1.78E-07	1.52E-06	1.62E-05
4527	0	3.43E-19	7.39E-19	2.33E-14	1.07E-07	1.08E-06	1.39E-05
4999	0	0	0	3.22E-15	6.13E-08	7.45E-07	1.18E-05
5519	0	5.28E-20	2.95E-19	3.71E-16	3.41E-08	4.99E-07	9.86E-06
6094	0	3.46E-19	6.55E-19	3.71E-17	1.87E-08	3.24E-07	8.11E-06
6728	0	0	0	7.72E-18	9.87E-09	2.04E-07	6.58E-06
7428	0	0	0	1.20E-17	4.82E-09	1.24E-07	5.26E-06
8202	0	0	0	1.44E-17	2.14E-09	7.27E-08	4.13E-06
9056	0	0	0	4.63E-17	8.87E-10	4.08E-08	3.19E-06
9999	0	0	0	1.97E-17	3.41E-10	2.18E-08	2.37E-06
11039	0	0	0	2.42E-17	1.21E-10	1.11E-08	1.70E-06
12189	0	0	0	3.29E-17	3.84E-11	5.34E-09	1.20E-06
13458	0	0	0	5.99E-17	1.11E-11	2.41E-09	8.20E-07
14859	0	0	0	1.98E-17	2.89E-12	1.02E-09	5.47E-07
16406	0	4.96E-20	2.80E-17	2.96E-16	6.97E-13	3.98E-10	3.54E-07
18114	0	0	7.75E-21	3.28E-19	1.38E-13	1.43E-10	2.24E-07
20000	0	0	0	5.76E-19	2.43E-14	4.71E-11	1.42E-07

s1HRA1 GW	Species	RWQS (mg/l)					
	Cl-	250					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	5.71E-10	2.29E-09	2.32E-07
2	1.74E-06	0.000287307	0.000461294	0.000851461	0.00155262	0.00182321	0.00231909
3	0.000233211	0.00714525	0.0108276	0.0198385	0.0365362	0.0422975	0.0535278
4	0.00514087	0.0320281	0.0385457	0.0685968	0.132491	0.149117	0.200214
5	0.0260204	0.0386504	0.0455355	0.0859148	0.208704	0.257067	0.344726
6	0.0239978	0.0307183	0.0362375	0.0710854	0.244576	0.326528	0.453919
7	0.0179047	0.0230929	0.0269037	0.054085	0.261939	0.349943	0.504005
8	0.0140773	0.0186229	0.0215662	0.04362	0.255174	0.356197	0.549478
9	0.0110029	0.0148107	0.0168569	0.0351207	0.228515	0.358437	0.579239
10	0.00924888	0.0119864	0.0139003	0.0279501	0.192071	0.343815	0.605347
11	0.00618257	0.00797711	0.00935693	0.0196217	0.160596	0.305862	0.590421
13	0.00441087	0.00579897	0.00669832	0.0132207	0.103643	0.223293	0.64264
14	0.00355159	0.00456701	0.00539222	0.0108465	0.0873536	0.189783	0.663528
16	0.00251082	0.00324988	0.00382107	0.00759792	0.0584302	0.139538	0.610958
17	0.00179747	0.00235262	0.00271261	0.00566744	0.0481062	0.118836	0.577754
19	0.00107707	0.00142799	0.0016355	0.00346535	0.0293055	0.0876212	0.506861
21	0.000726485	0.000950715	0.00109972	0.00233267	0.0193965	0.0623644	0.428197
23	0.000509169	0.000654655	0.000772161	0.00164414	0.0132026	0.0433803	0.355714
26	0.000316192	0.000412141	0.000486075	0.00104883	0.00742529	0.0254122	0.267049
28	0.000183766	0.000234643	0.000283214	0.000645536	0.00515584	0.018207	0.220292
30	9.61E-05	0.000122119	0.000147829	0.000351277	0.00327727	0.0123712	0.18173
32	5.02E-05	6.43E-05	7.68E-05	0.000189289	0.00201392	0.00839352	0.149742
35	2.52E-05	3.25E-05	3.95E-05	9.90E-05	0.000927325	0.00449016	0.111938
39	1.38E-05	1.77E-05	2.14E-05	5.55E-05	0.000420045	0.00207261	0.0764267
43	7.90E-06	1.02E-05	1.24E-05	3.32E-05	0.00021799	0.00105306	0.0528514
47	4.12E-06	5.42E-06	6.60E-06	1.83E-05	0.000119448	0.000546864	0.0370112
52	1.76E-06	2.38E-06	2.92E-06	8.49E-06	5.33E-05	0.000242619	0.0240601
57	6.65E-07	8.94E-07	1.11E-06	3.39E-06	2.22E-05	0.000104807	0.0162581
64	2.18E-07	2.91E-07	3.60E-07	1.19E-06	7.77E-06	3.31E-05	0.00978167
70	6.74E-08	9.31E-08	1.19E-07	4.19E-07	2.82E-06	1.27E-05	0.00634896
78	2.37E-08	3.42E-08	4.32E-08	1.64E-07	1.07E-06	3.99E-06	0.0034722
86	5.93E-09	8.56E-09	1.12E-08	4.60E-08	3.12E-07	1.14E-06	0.00193379
95	1.59E-09	2.38E-09	3.11E-09	1.40E-08	9.76E-08	3.25E-07	0.00101865
100	5.35E-10	7.72E-10	9.99E-10	4.22E-09	3.28E-08	1.40E-07	0.000738546
105	2.60E-10	3.94E-10	4.88E-10	1.68E-09	1.17E-08	5.68E-08	0.000537716
116	1.39E-10	1.98E-10	2.49E-10	7.66E-10	4.76E-09	1.44E-08	0.000270815
128	4.98E-11	7.23E-11	8.82E-11	2.21E-10	1.34E-09	3.40E-09	0.000130235
141	0	0	4.88E-12	1.19E-10	6.05E-10	1.37E-09	5.98E-05
156	0	1.90E-11	6.73E-11	1.69E-10	8.42E-10	1.56E-09	2.48E-05
172	2.64E-11	4.18E-11	5.09E-11	1.37E-10	7.07E-10	1.28E-09	9.85E-06
190	7.44E-12	1.08E-11	1.38E-11	5.56E-11	2.79E-10	5.11E-10	3.54E-06
210	8.42E-13	1.21E-12	1.63E-12	8.31E-12	5.98E-11	1.26E-10	1.16E-06
232	0	0	0	0	6.95E-12	1.60E-11	3.42E-07
256	0	0	0	0	5.58E-14	2.03E-13	9.22E-08
282	0	0	1.57E-16	8.06E-15	6.41E-14	1.31E-13	2.26E-08
300	0	0	0	1.60E-15	2.36E-14	6.67E-14	8.62E-09
312	0	0	0	1.11E-15	6.53E-15	1.35E-14	4.54E-09
344	0	6.05E-17	3.16E-16	1.48E-15	7.30E-15	1.40E-14	8.32E-10
380	5.65E-18	2.96E-16	3.99E-16	1.03E-15	5.42E-15	9.67E-15	1.26E-10
420	0	0	0	1.33E-16	1.30E-15	2.97E-15	1.55E-11
464	0	0	0	0	2.85E-16	8.53E-16	1.59E-12
512	0	0	3.35E-17	9.57E-16	5.02E-15	9.88E-15	1.64E-13
565	4.78E-17	8.90E-16	1.30E-15	3.46E-15	1.62E-14	2.84E-14	1.05E-13
624	0	4.03E-16	1.21E-15	4.16E-15	1.81E-14	3.08E-14	9.50E-14
689	5.73E-15	8.77E-15	1.04E-14	2.32E-14	1.10E-13	1.98E-13	5.55E-13
761	0	0	0	2.49E-15	5.81E-14	1.32E-13	4.26E-13
840	0	0	0	2.76E-14	1.23E-13	1.89E-13	5.04E-13
928	0	0	0	0	2.88E-13	5.50E-13	2.59E-12
1000	0	0	0	1.16E-13	5.83E-13	1.24E-12	3.22E-12
1024	1.07E-13	1.65E-13	2.06E-13	4.34E-13	2.14E-12	3.82E-12	9.96E-12
1131	1.01E-13	1.53E-13	1.80E-13	3.77E-13	1.94E-12	3.10E-12	8.30E-12
1249	5.81E-14	8.54E-14	1.04E-13	2.23E-13	1.15E-12	1.86E-12	5.50E-12
1379	1.18E-14	2.03E-14	2.62E-14	5.92E-14	2.89E-13	5.06E-13	1.53E-12
1523	5.94E-17	1.30E-16	1.71E-16	5.12E-16	2.47E-15	5.35E-15	2.27E-14
1681	0	1.46E-16	2.56E-16	9.64E-16	4.89E-15	9.42E-15	2.99E-14
1856	2.35E-16	5.95E-16	8.05E-16	2.23E-15	1.19E-14	1.93E-14	4.98E-14
2050	2.65E-16	6.13E-16	8.79E-16	2.21E-15	1.13E-14	2.04E-14	6.32E-14
2263	0	1.41E-16	2.40E-16	7.53E-16	3.83E-15	6.68E-15	2.16E-14
2499	0	0	0	1.34E-16	7.68E-16	1.40E-15	4.04E-15
2759	0	0	0	3.78E-17	4.34E-16	8.87E-16	3.30E-15
3046	0	0	0	5.08E-17	3.05E-16	5.35E-16	2.37E-15
3363	0	3.38E-17	6.30E-17	2.31E-16	1.37E-15	2.90E-15	8.05E-15
3714	8.39E-17	1.35E-16	1.87E-16	5.38E-16	2.60E-15	4.69E-15	1.50E-14
4100	1.66E-16	2.49E-16	3.43E-16	8.36E-16	4.04E-15	7.18E-15	2.23E-14
4527	1.56E-16	2.89E-16	4.13E-16	1.13E-15	5.42E-15	9.77E-15	2.96E-14
4999	0	0	0	3.46E-16	3.56E-15	6.81E-15	2.21E-14
5519	0	0	0	0	1.84E-16	2.52E-15	1.07E-14
6094	0	5.87E-16	1.22E-15	4.92E-15	2.27E-14	4.34E-14	1.40E-13
6728	1.51E-15	3.28E-15	4.41E-15	1.12E-14	5.43E-14	9.30E-14	2.65E-13
7428	0	3.17E-15	5.43E-15	1.78E-14	8.75E-14	1.55E-13	4.19E-13
8202	0	0	9.28E-15	4.35E-14	1.99E-13	3.84E-13	1.17E-12
9056	0	0	9.12E-15	6.05E-14	3.13E-13	5.46E-13	1.57E-12
9999	0	0	2.21E-14	2.77E-13	1.58E-12	2.75E-12	7.73E-12
11039	2.39E-13	3.64E-13	4.35E-13	9.52E-13	4.72E-12	7.86E-12	2.55E-11
12189	3.22E-13	4.05E-13	4.86E-13	9.95E-13	4.98E-12	8.05E-12	2.44E-11
13458	1.72E-13	2.35E-13	2.90E-13	6.21E-13	3.07E-12	5.36E-12	1.54E-11
14859	5.16E-14	8.65E-14	1.10E-13	2.69E-13	1.22E-12	2.28E-12	7.02E-12
16406	6.51E-16	1.11E-14	1.92E-14	5.50E-14	2.60E-13	4.48E-13	1.49E-12
18114	0	0	0	0	4.05E-16	9.06E-16	4.40E-15
20000	0	0	0	0	2.14E-15	4.95E-15	1.61E-14

s1HRA1 GW	Species	RWQS (mg/l)					
	Cu	2					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0
86	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0
100	0	0	0	0	0	0	4.15E-20
105	0	0	0	0	0	0	5.04E-20
116	0	0	0	0	0	0	5.09E-20
128	0	0	0	0	0	0	1.72E-19
141	0	0	0	0	0	0	8.91E-19
156	0	0	0	0	0	0	6.79E-18
172	0	0	0	0	0	0	2.03E-16
190	0	0	0	0	0	0	4.27E-15
210	0	0	0	0	0	1.38E-20	6.60E-14
232	0	0	0	0	0	2.29E-20	7.64E-13
256	0	0	0	0	0	6.54E-20	6.71E-12
282	0	0	0	0	0	1.32E-19	4.12E-11
300	0	0	0	0	0	6.21E-19	1.12E-10
312	0	0	0	0	0	7.14E-19	2.03E-10
344	0	0	0	0	1.37E-20	1.84E-17	7.99E-10
380	0	0	0	0	4.87E-20	3.97E-16	2.75E-09
420	0	0	0	0	7.08E-19	7.03E-15	8.21E-09
464	0	0	0	0	1.83E-17	8.39E-14	2.13E-08
512	0	0	0	0	3.33E-16	7.24E-13	4.83E-08
565	0	0	0	0	5.22E-15	5.05E-12	9.73E-08
624	0	0	0	0	6.35E-14	2.98E-11	1.77E-07
689	0	0	0	0	5.81E-13	1.39E-10	2.36E-07
761	0	0	0	0	3.96E-12	5.63E-10	3.81E-07
840	0	0	0	0	2.04E-11	1.93E-09	6.08E-07
928	0	0	0	1.12E-20	1.01E-10	5.78E-09	7.81E-07
1000	0	0	0	4.39E-19	2.64E-10	1.14E-08	9.81E-07
1024	0	0	0	7.29E-19	3.63E-10	1.35E-08	1.05E-06
1131	0	0	0	1.39E-17	1.30E-09	2.97E-08	1.05E-06
1249	0	0	0	2.66E-16	3.83E-09	5.77E-08	1.11E-06
1379	0	0	0	3.65E-15	9.83E-09	9.75E-08	1.08E-06
1523	0	0	0	4.08E-14	2.28E-08	1.51E-07	1.11E-06
1681	0	0	0	3.33E-13	4.31E-08	2.54E-07	1.04E-06
1856	0	0	0	2.36E-12	7.89E-08	3.33E-07	1.16E-06
2050	0	0	2.38E-20	1.22E-11	1.27E-07	3.93E-07	1.37E-06
2263	0	0	1.05E-19	5.29E-11	1.78E-07	4.49E-07	1.48E-06
2499	0	0	2.96E-19	1.99E-10	2.36E-07	4.94E-07	1.35E-06
2759	0	0	5.34E-18	6.73E-10	2.87E-07	5.30E-07	1.53E-06
3046	0	0	1.08E-16	1.83E-09	3.40E-07	5.57E-07	1.60E-06
3363	0	0	1.62E-15	4.64E-09	3.75E-07	5.73E-07	1.68E-06
3714	0	5.16E-20	1.85E-14	1.01E-08	4.00E-07	5.90E-07	1.55E-06
4100	0	6.75E-19	1.63E-13	1.97E-08	4.25E-07	6.29E-07	1.41E-06
4527	0	1.58E-17	1.17E-12	3.43E-08	4.49E-07	6.40E-07	1.34E-06
4999	0	2.71E-16	6.46E-12	5.31E-08	4.54E-07	6.45E-07	1.24E-06
5519	0	3.42E-15	3.02E-11	7.34E-08	4.40E-07	6.61E-07	1.24E-06
6094	0	3.30E-14	1.13E-10	9.51E-08	4.26E-07	6.32E-07	1.30E-06
6728	0	2.47E-13	3.81E-10	1.13E-07	4.26E-07	5.92E-07	1.23E-06
7428	0	1.48E-12	9.66E-10	1.26E-07	4.10E-07	5.94E-07	1.26E-06
8202	0	7.49E-12	2.15E-09	1.34E-07	3.84E-07	5.56E-07	1.24E-06
9056	2.65E-19	2.97E-11	4.12E-09	1.40E-07	3.55E-07	5.25E-07	1.14E-06
9999	7.19E-18	1.03E-10	6.19E-09	1.40E-07	3.29E-07	4.72E-07	9.80E-07
11039	1.40E-16	2.45E-10	9.18E-09	1.39E-07	3.11E-07	4.36E-07	8.93E-07
12189	5.10E-16	5.12E-10	1.00E-08	1.32E-07	3.05E-07	3.94E-07	8.10E-07
13458	5.96E-15	5.76E-10	7.90E-09	1.23E-07	2.94E-07	3.81E-07	7.13E-07
14859	2.10E-15	6.43E-10	6.28E-09	1.13E-07	2.70E-07	3.63E-07	6.59E-07
16406	1.73E-14	8.36E-10	4.33E-09	1.01E-07	2.57E-07	3.33E-07	5.95E-07
18114	3.77E-14	5.29E-10	3.62E-09	8.71E-08	2.41E-07	3.12E-07	6.50E-07
20000	1.24E-14	2.27E-10	2.64E-09	7.41E-08	2.24E-07	2.98E-07	7.21E-07

s1HRA1 GW	Species	RWQS (mg/l)					
	Hg	0.001					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0
86	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0
128	0	0	0	0	0	0	2.10E-20
141	0	0	0	0	0	1.03E-20	4.75E-19
156	0	0	0	0	2.54E-20	3.18E-19	9.53E-18
172	0	0	0	0	6.97E-19	6.30E-18	1.32E-16
190	0	0	0	0	1.32E-17	9.97E-17	1.61E-15
210	0	0	0	0	1.83E-16	1.18E-15	1.43E-14
232	0	0	0	1.35E-19	2.02E-15	1.11E-14	9.72E-14
256	0	0	0	2.87E-18	1.71E-14	7.89E-14	5.31E-13
282	0	0	0	4.30E-17	1.09E-13	4.36E-13	2.53E-12
300	0	0	0	2.14E-16	3.23E-13	1.19E-12	6.28E-12
312	0	0	0	5.59E-16	6.19E-13	2.16E-12	1.08E-11
344	0	0	0	5.37E-15	2.96E-12	8.64E-12	3.76E-11
380	0	0	0	4.14E-14	1.19E-11	3.04E-11	1.16E-10
420	0	0	0	2.72E-13	4.15E-11	9.88E-11	3.14E-10
464	0	0	0	1.41E-12	1.25E-10	2.64E-10	7.46E-10
512	0	0	0	6.18E-12	3.27E-10	6.26E-10	1.57E-09
565	0	0	1.70E-19	2.21E-11	7.48E-10	1.35E-09	2.91E-09
624	0	0	3.66E-18	7.03E-11	1.48E-09	2.54E-09	4.90E-09
689	0	0	5.91E-17	1.95E-10	2.74E-09	4.34E-09	7.45E-09
761	0	0	7.35E-16	4.55E-10	4.59E-09	6.82E-09	1.08E-08
840	0	6.27E-20	7.06E-15	9.53E-10	7.08E-09	9.48E-09	1.65E-08
928	0	1.66E-18	5.52E-14	1.77E-09	1.00E-08	1.27E-08	2.13E-08
1000	0	1.57E-17	2.25E-13	2.74E-09	1.23E-08	1.58E-08	2.65E-08
1024	0	3.06E-17	3.43E-13	3.06E-09	1.30E-08	1.64E-08	2.88E-08
1131	0	4.25E-16	1.80E-12	4.79E-09	1.61E-08	1.94E-08	3.55E-08
1249	0	4.46E-15	8.06E-12	6.82E-09	1.84E-08	2.38E-08	4.76E-08
1379	0	3.59E-14	2.99E-11	8.99E-09	2.05E-08	2.71E-08	6.03E-08
1523	0	2.35E-13	9.44E-11	1.08E-08	2.20E-08	3.11E-08	8.09E-08
1681	0	1.29E-12	2.29E-10	1.16E-08	2.32E-08	3.61E-08	1.00E-07
1856	0	5.82E-12	5.70E-10	1.21E-08	2.42E-08	4.11E-08	1.20E-07
2050	3.60E-19	2.22E-11	1.16E-09	1.21E-08	2.52E-08	4.79E-08	1.40E-07
2263	7.61E-18	6.87E-11	2.18E-09	1.18E-08	2.53E-08	5.55E-08	1.59E-07
2499	1.20E-16	1.84E-10	3.43E-09	1.11E-08	2.62E-08	6.23E-08	1.78E-07
2759	1.40E-15	4.32E-10	3.69E-09	1.05E-08	2.63E-08	8.12E-08	1.94E-07
3046	1.26E-14	8.37E-10	3.07E-09	9.55E-09	2.48E-08	1.04E-07	2.01E-07
3363	8.82E-14	1.23E-09	2.61E-09	8.41E-09	2.50E-08	1.22E-07	2.13E-07
3714	5.00E-13	1.19E-09	2.08E-09	7.28E-09	2.37E-08	1.21E-07	2.36E-07
4100	2.31E-12	9.76E-10	1.55E-09	6.31E-09	2.23E-08	1.29E-07	2.54E-07
4527	8.93E-12	7.09E-10	1.13E-09	5.32E-09	2.11E-08	1.47E-07	2.91E-07
4999	2.95E-11	5.15E-10	8.61E-10	4.33E-09	2.00E-08	1.38E-07	3.27E-07
5519	8.41E-11	3.54E-10	5.82E-10	3.42E-09	1.90E-08	1.52E-07	3.62E-07
6094	8.35E-11	2.31E-10	3.99E-10	2.77E-09	1.89E-08	1.60E-07	4.12E-07
6728	6.72E-11	1.42E-10	2.55E-10	2.21E-09	1.89E-08	1.72E-07	4.37E-07
7428	4.32E-11	9.33E-11	1.61E-10	1.66E-09	1.79E-08	1.72E-07	4.63E-07
8202	2.38E-11	5.43E-11	1.04E-10	1.25E-09	1.73E-08	1.66E-07	5.24E-07
9056	1.26E-11	3.03E-11	5.96E-11	9.16E-10	1.67E-08	1.62E-07	5.51E-07
9999	5.82E-12	1.57E-11	3.19E-11	6.64E-10	1.55E-08	1.60E-07	6.17E-07
11039	2.52E-12	7.72E-12	1.65E-11	4.58E-10	1.51E-08	1.60E-07	6.44E-07
12189	1.07E-12	3.60E-12	8.37E-12	3.11E-10	1.34E-08	1.73E-07	6.68E-07
13458	3.88E-13	1.55E-12	4.00E-12	2.04E-10	1.33E-08	1.86E-07	8.07E-07
14859	1.30E-13	6.04E-13	1.78E-12	1.27E-10	1.38E-08	2.05E-07	8.20E-07
16406	4.19E-14	2.21E-13	7.30E-13	7.80E-11	1.34E-08	2.05E-07	8.32E-07
18114	1.22E-14	7.75E-14	2.76E-13	4.64E-11	1.23E-08	2.05E-07	8.63E-07
20000	2.88E-15	2.27E-14	9.61E-14	2.64E-11	1.16E-08	2.05E-07	8.75E-07

s1HRA1 GW	Species	RWQS (mg/l)					
	Ni	0.02					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	4.24E-19
13	0	0	0	0	0	0	3.64E-16
14	0	0	0	0	0	0	3.95E-15
16	0	0	0	0	0	5.14E-19	1.78E-13
17	0	0	0	0	1.14E-20	5.10E-18	7.73E-13
19	0	0	0	0	8.04E-19	2.60E-16	8.88E-12
21	0	0	0	0	3.33E-17	6.11E-15	6.50E-11
23	0	0	0	0	6.79E-16	7.79E-14	3.25E-10
26	0	0	0	0	2.29E-14	1.54E-12	2.20E-09
28	0	0	0	0	1.54E-13	7.94E-12	6.08E-09
30	0	0	0	1.40E-20	7.95E-13	2.89E-11	1.44E-08
32	0	0	0	6.09E-20	3.29E-12	9.28E-11	2.99E-08
35	0	0	0	9.72E-19	2.00E-11	4.44E-10	7.43E-08
39	0	0	0	3.91E-17	1.37E-10	2.40E-09	1.95E-07
43	0	0	0	8.48E-16	6.30E-10	8.54E-09	4.14E-07
47	0	0	0	1.04E-14	2.24E-09	2.31E-08	7.50E-07
52	0	0	0	1.45E-13	7.50E-09	6.44E-08	1.33E-06
57	0	0	0	1.18E-12	2.02E-08	1.34E-07	2.06E-06
64	0	0	0	1.23E-11	6.28E-08	3.29E-07	3.20E-06
70	0	0	0	6.12E-11	1.35E-07	6.18E-07	4.17E-06
78	0	0	0	3.35E-10	3.01E-07	1.11E-06	5.44E-06
86	0	0	8.41E-19	1.31E-09	5.46E-07	1.54E-06	6.44E-06
95	0	0	2.71E-17	4.51E-09	9.35E-07	2.15E-06	7.20E-06
100	0	6.47E-19	1.41E-16	8.10E-09	1.13E-06	2.55E-06	7.60E-06
105	0	8.64E-19	6.29E-16	1.37E-08	1.34E-06	3.10E-06	7.94E-06
116	0	2.07E-18	1.06E-14	3.58E-08	1.94E-06	3.79E-06	8.23E-06
128	0	5.38E-18	1.30E-13	8.35E-08	2.69E-06	4.51E-06	8.52E-06
141	0	1.10E-17	1.16E-12	1.71E-07	3.16E-06	4.82E-06	8.75E-06
156	7.81E-19	1.93E-16	8.18E-12	3.30E-07	3.55E-06	5.11E-06	9.29E-06
172	7.92E-19	3.54E-15	4.58E-11	5.59E-07	3.84E-06	5.21E-06	8.84E-06
190	8.04E-19	4.62E-14	2.10E-10	8.66E-07	4.11E-06	5.49E-06	9.87E-06
210	1.17E-18	4.63E-13	9.98E-10	1.19E-06	4.30E-06	5.44E-06	9.19E-06
232	1.23E-18	3.58E-12	4.08E-09	1.52E-06	4.25E-06	5.60E-06	8.90E-06
256	1.15E-18	2.47E-11	1.32E-08	1.73E-06	4.24E-06	5.44E-06	9.19E-06
282	1.19E-18	1.56E-10	3.33E-08	1.86E-06	4.17E-06	5.33E-06	9.47E-06
300	1.03E-18	4.28E-10	5.95E-08	1.89E-06	3.99E-06	5.32E-06	9.57E-06
312	1.05E-18	7.51E-10	8.20E-08	1.94E-06	3.91E-06	5.16E-06	9.71E-06
344	5.66E-18	2.72E-09	1.15E-07	1.87E-06	3.69E-06	5.03E-06	8.60E-06
380	1.31E-16	8.57E-09	1.50E-07	1.78E-06	3.46E-06	4.78E-06	7.81E-06
420	2.56E-15	1.98E-08	1.97E-07	1.62E-06	3.37E-06	4.44E-06	7.72E-06
464	3.63E-14	2.28E-08	2.21E-07	1.52E-06	3.32E-06	4.06E-06	6.56E-06
512	3.78E-13	2.79E-08	2.05E-07	1.38E-06	3.14E-06	3.80E-06	6.16E-06
565	3.06E-12	2.80E-08	1.66E-07	1.19E-06	2.90E-06	3.62E-06	6.08E-06
624	1.99E-11	2.62E-08	1.28E-07	1.01E-06	2.71E-06	3.57E-06	6.60E-06
689	9.28E-11	1.89E-08	1.03E-07	8.53E-07	2.61E-06	3.34E-06	6.43E-06
761	1.17E-10	1.17E-08	6.45E-08	7.03E-07	2.51E-06	3.28E-06	6.27E-06
840	4.89E-11	6.38E-09	4.13E-08	5.60E-07	2.41E-06	3.17E-06	5.80E-06
928	3.28E-11	3.38E-09	2.63E-08	4.40E-07	2.28E-06	3.19E-06	6.13E-06
1000	2.58E-11	1.96E-09	1.73E-08	3.63E-07	2.18E-06	2.96E-06	6.23E-06
1024	1.99E-11	1.51E-09	1.49E-08	3.42E-07	2.15E-06	2.91E-06	6.17E-06
1131	5.38E-12	9.43E-10	8.35E-09	2.57E-07	2.00E-06	2.77E-06	5.67E-06
1249	1.40E-12	3.88E-10	4.37E-09	1.90E-07	1.90E-06	2.60E-06	5.44E-06
1379	3.27E-13	1.44E-10	2.13E-09	1.36E-07	1.77E-06	2.48E-06	4.99E-06
1523	4.81E-14	4.89E-11	9.36E-10	9.60E-08	1.73E-06	2.36E-06	4.63E-06
1681	9.03E-15	1.50E-11	4.00E-10	6.54E-08	1.57E-06	2.32E-06	4.03E-06
1856	1.73E-15	4.16E-12	1.55E-10	4.37E-08	1.47E-06	2.26E-06	3.50E-06
2050	1.39E-16	1.02E-12	5.50E-11	2.82E-08	1.37E-06	2.14E-06	3.35E-06
2263	9.86E-18	2.20E-13	1.85E-11	1.75E-08	1.22E-06	2.01E-06	3.12E-06
2499	2.14E-18	4.12E-14	5.71E-12	1.04E-08	1.12E-06	1.87E-06	3.10E-06
2759	9.84E-19	6.59E-15	1.56E-12	5.84E-09	1.00E-06	1.79E-06	3.09E-06
3046	5.37E-20	8.90E-16	3.77E-13	3.37E-09	8.69E-07	1.60E-06	3.04E-06
3363	6.50E-20	9.76E-17	7.90E-14	1.81E-09	6.99E-07	1.45E-06	3.10E-06
3714	9.01E-20	8.57E-18	1.55E-14	9.02E-10	5.61E-07	1.41E-06	3.13E-06
4100	5.11E-20	8.70E-19	2.33E-15	4.27E-10	4.80E-07	1.22E-06	3.05E-06
4527	3.82E-20	3.45E-19	2.89E-16	1.89E-10	3.66E-07	1.09E-06	2.89E-06
4999	0	1.22E-19	3.12E-17	8.04E-11	2.72E-07	9.86E-07	2.80E-06
5519	0	7.65E-20	3.26E-18	3.11E-11	2.03E-07	8.41E-07	2.54E-06
6094	6.27E-20	2.56E-19	1.24E-18	1.13E-11	1.54E-07	6.99E-07	2.45E-06
6728	0	1.02E-19	6.11E-19	3.68E-12	1.11E-07	5.61E-07	2.21E-06
7428	0	8.89E-20	1.31E-18	1.03E-12	7.63E-08	4.34E-07	2.11E-06
8202	0	0	1.06E-18	2.64E-13	5.05E-08	3.34E-07	2.04E-06
9056	0	2.66E-18	5.99E-18	6.08E-14	3.34E-08	2.52E-07	1.85E-06
9999	0	0	0	1.15E-14	2.17E-08	1.92E-07	1.65E-06
11039	0	0	1.16E-19	1.99E-15	1.30E-08	1.41E-07	1.41E-06
12189	0	0	3.18E-21	3.69E-16	7.59E-09	1.00E-07	1.23E-06
13458	0	0	0	1.59E-16	4.51E-09	6.97E-08	1.08E-06
14859	0	0	7.68E-20	1.21E-16	2.44E-09	4.71E-08	8.99E-07
16406	6.84E-21	3.20E-17	7.34E-17	2.92E-16	1.30E-09	3.09E-08	7.35E-07
18114	0	0	2.04E-20	3.18E-18	6.70E-10	1.97E-08	5.91E-07
20000	0	0	0	1.21E-18	3.23E-10	1.12E-08	4.70E-07

s1HRA1 GW	Species	RWQS (mg/l)					
	SO4	250					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	6.07E-09	2.26E-08	2.19E-06
2	1.33E-05	0.00319687	0.00448001	0.00795999	0.0143714	0.0158912	0.0188888
3	0.00167789	0.0823751	0.108243	0.193402	0.34215	0.379025	0.470185
4	0.041426	0.332001	0.388588	0.672735	1.22421	1.40761	1.70236
5	0.25468	0.418942	0.471107	0.879012	2.00515	2.39505	3.22296
6	0.306661	0.363511	0.404153	0.795912	2.51887	3.20619	4.51509
7	0.266071	0.314995	0.347866	0.692425	2.71969	3.66681	5.3013
8	0.233776	0.273924	0.304378	0.61115	2.82072	3.95249	6.12093
9	0.206082	0.245436	0.272895	0.546674	2.77102	4.05952	6.54043
10	0.179085	0.21209	0.235204	0.474534	2.60865	4.32023	6.86282
11	0.144713	0.171609	0.193228	0.388148	2.3286	4.21067	7.13671
13	0.118789	0.143226	0.159891	0.320538	1.81815	3.68172	7.22608
14	0.106248	0.127558	0.144055	0.288113	1.64821	3.45182	7.10703
16	0.0865156	0.104654	0.117546	0.235063	1.34749	2.94725	7.63378
17	0.0719479	0.0878335	0.0976634	0.199467	1.2222	2.71796	7.01205
19	0.0545705	0.0664474	0.0744416	0.150982	0.932516	2.2437	6.56959
21	0.0441413	0.0538495	0.0606904	0.122582	0.731199	1.81833	5.8084
23	0.0371634	0.0446686	0.0503475	0.102947	0.594569	1.46526	5.04038
26	0.0286819	0.0340484	0.0392762	0.0798352	0.438229	1.06657	4.08797
28	0.0212651	0.0249896	0.0290251	0.0596393	0.357144	0.871471	3.61441
30	0.0148886	0.0172488	0.0199809	0.0419093	0.269483	0.692928	3.20527
32	0.010266	0.0121033	0.013912	0.029855	0.202658	0.542588	2.81706
35	0.00704185	0.00842695	0.00978575	0.0208587	0.129068	0.359158	2.28203
39	0.00508386	0.00610506	0.00710947	0.0152538	0.0864665	0.220597	1.69688
43	0.00367385	0.00446277	0.00523231	0.0114105	0.0612475	0.148604	1.2659
47	0.00251934	0.00308175	0.00361702	0.00796046	0.0433351	0.101964	0.951594
52	0.0015128	0.00189672	0.00221395	0.00495404	0.0267799	0.0615771	0.667719
57	0.00083474	0.00107845	0.00124821	0.00288017	0.0154943	0.0367704	0.468515
64	0.00042751	0.000568473	0.000652504	0.00159334	0.0080354	0.018556	0.284414
70	0.000223887	0.000300633	0.000347005	0.000866512	0.00459183	0.0100204	0.187026
78	0.000127532	0.000170487	0.000199736	0.000513579	0.00258302	0.00509716	0.107876
86	5.49E-05	7.49E-05	8.96E-05	0.000238599	0.00121999	0.00236448	0.0630561
95	2.63E-05	3.63E-05	4.32E-05	0.000121023	0.000620348	0.00116627	0.0347389
100	1.10E-05	1.52E-05	1.83E-05	5.38E-05	0.000314345	0.000647732	0.0250993
105	3.09E-06	4.41E-06	5.30E-06	1.66E-05	0.000112782	0.000300554	0.018018
116	8.66E-07	1.23E-06	1.48E-06	4.88E-06	2.76E-05	6.39E-05	0.008656
128	3.18E-07	4.51E-07	5.44E-07	1.82E-06	9.69E-06	1.83E-05	0.00401105
141	1.15E-07	1.64E-07	1.98E-07	6.94E-07	3.82E-06	6.70E-06	0.00179242
156	4.16E-08	6.02E-08	7.65E-08	2.99E-07	1.60E-06	2.79E-06	0.000726629
172	1.17E-08	1.72E-08	2.34E-08	1.10E-07	6.24E-07	1.12E-06	0.000283886
190	1.12E-09	2.12E-09	3.24E-09	2.44E-08	1.65E-07	3.24E-07	9.64E-05
210	5.92E-12	6.09E-11	8.79E-11	1.72E-09	2.18E-08	4.92E-08	3.19E-05
232	7.71E-11	9.96E-11	1.24E-10	4.14E-10	3.31E-09	7.11E-09	9.40E-06
256	1.21E-11	6.61E-11	8.11E-11	1.90E-10	8.98E-10	1.66E-09	2.51E-06
282	1.41E-12	2.26E-11	3.00E-11	7.74E-11	3.80E-10	7.30E-10	6.10E-07
300	0	2.02E-12	3.66E-12	1.11E-11	5.45E-11	1.08E-10	2.31E-07
312	0	0	0	0	5.21E-15	2.98E-12	1.21E-07
344	0	2.63E-15	7.15E-15	5.34E-14	3.40E-13	6.41E-13	2.21E-08
380	0	0	0	0	2.01E-13	5.88E-13	3.31E-09
420	0	0	0	0	4.49E-14	1.32E-13	4.06E-10
464	0	7.25E-16	5.10E-15	2.62E-14	1.34E-13	2.52E-13	4.17E-11
512	2.59E-16	9.34E-15	1.33E-14	3.95E-14	1.98E-13	3.26E-13	2.84E-12
565	0	0	0	1.80E-14	1.12E-13	1.89E-13	7.86E-13
624	0	0	2.63E-15	2.79E-14	1.34E-13	2.87E-13	8.88E-13
689	2.43E-14	5.27E-14	6.88E-14	1.62E-13	7.77E-13	1.36E-12	3.88E-12
761	0	0	0	8.10E-14	7.41E-13	1.96E-12	5.67E-12
840	0	0	0	1.29E-13	9.00E-13	1.40E-12	3.32E-12
928	0	0	0	3.49E-13	4.72E-12	9.70E-12	3.13E-11
1000	0	0	0	1.49E-12	7.19E-12	1.36E-11	3.56E-11
1024	1.12E-12	1.78E-12	2.20E-12	5.45E-12	2.28E-11	4.55E-11	1.14E-10
1131	1.41E-12	1.77E-12	2.05E-12	4.42E-12	1.93E-11	3.80E-11	1.01E-10
1249	6.85E-13	8.57E-13	1.04E-12	2.19E-12	1.01E-11	1.87E-11	5.41E-11
1379	1.00E-13	1.72E-13	2.04E-13	4.79E-13	2.15E-12	3.99E-12	1.11E-11
1523	0	2.18E-15	3.95E-15	1.56E-14	8.91E-14	1.79E-13	3.57E-13
1681	5.83E-16	4.34E-15	6.40E-15	2.11E-14	1.09E-13	2.26E-13	7.21E-13
1856	5.04E-15	1.04E-14	1.32E-14	3.57E-14	1.59E-13	3.75E-13	1.06E-12
2050	0	6.91E-15	1.06E-14	3.07E-14	1.43E-13	2.75E-13	8.49E-13
2263	0	0	2.68E-16	7.60E-15	4.14E-14	8.18E-14	2.32E-13
2499	0	0	0	0	4.66E-15	9.44E-15	4.87E-14
2759	0	0	0	4.12E-16	4.31E-15	9.43E-15	4.62E-14
3046	0	0	0	4.27E-16	3.43E-15	8.29E-15	2.85E-14
3363	2.30E-18	7.11E-16	1.14E-15	3.48E-15	1.86E-14	3.07E-14	9.55E-14
3714	2.62E-15	3.66E-15	4.45E-15	9.65E-15	4.57E-14	7.68E-14	2.40E-13
4100	4.63E-15	6.18E-15	7.40E-15	1.54E-14	7.38E-14	1.32E-13	3.48E-13
4527	4.02E-15	6.51E-15	8.00E-15	1.74E-14	7.70E-14	1.45E-13	3.99E-13
4999	0	0	0	0	1.26E-14	2.63E-14	8.55E-14
5519	0	0	0	0	8.95E-16	9.74E-15	6.77E-14
6094	0	0	0	2.75E-14	1.43E-13	2.53E-13	9.73E-13
6728	0	2.33E-14	3.14E-14	8.67E-14	3.85E-13	7.64E-13	2.17E-12
7428	0	0	2.36E-14	1.36E-13	6.84E-13	1.33E-12	3.62E-12
8202	0	0	7.82E-14	4.43E-13	1.96E-12	3.49E-12	1.02E-11
9056	0	0	0	5.67E-13	2.98E-12	5.42E-12	1.52E-11
9999	0	0	1.49E-13	2.71E-12	1.35E-11	2.42E-11	7.72E-11
11039	3.07E-12	4.06E-12	4.74E-12	9.76E-12	4.35E-11	7.92E-11	2.51E-10
12189	3.09E-12	4.04E-12	4.95E-12	1.04E-11	4.84E-11	8.54E-11	2.49E-10
13458	1.29E-12	1.98E-12	2.72E-12	6.55E-12	3.30E-11	5.05E-11	1.54E-10
14859	2.45E-13	6.08E-13	1.00E-12	2.74E-12	1.36E-11	2.18E-11	6.13E-11
16406	0	4.85E-14	1.29E-13	4.60E-13	2.33E-12	3.88E-12	9.60E-12
18114	0	0	0	0	2.24E-15	1.04E-14	6.40E-14
20000	0	0	0	1.76E-15	2.19E-14	3.72E-14	1.80E-13

s1HRA1 GW	Species	RWQS (mg/l)					
	Zn	5					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	3.06E-18
7	0	0	0	0	0	6.70E-21	2.23E-15
8	0	0	0	0	0	1.31E-19	8.66E-13
9	0	0	0	0	0	5.25E-18	4.40E-10
10	0	0	0	0	2.21E-20	2.34E-15	1.09E-08
11	0	0	0	0	4.69E-19	5.98E-14	5.69E-08
13	0	0	0	0	5.46E-16	6.83E-12	5.91E-07
14	0	0	0	0	6.33E-15	4.38E-11	1.38E-06
16	0	0	0	0	5.23E-13	8.23E-10	4.68E-06
17	0	0	0	0	2.13E-12	2.51E-09	7.52E-06
19	0	0	0	0	3.87E-11	1.61E-08	1.60E-05
21	0	0	0	6.85E-20	2.97E-10	5.99E-08	2.71E-05
23	0	0	0	6.81E-19	1.48E-09	1.85E-07	3.62E-05
26	0	0	0	2.32E-17	1.04E-08	7.03E-07	5.01E-05
28	0	0	0	3.29E-16	2.99E-08	1.31E-06	5.66E-05
30	0	0	0	3.09E-15	7.39E-08	2.47E-06	6.30E-05
32	0	0	0	2.16E-14	1.72E-07	3.92E-06	6.83E-05
35	0	0	0	2.52E-13	4.24E-07	6.86E-06	7.41E-05
39	0	0	0	3.65E-12	1.14E-06	1.15E-05	7.46E-05
43	0	0	6.39E-20	3.16E-11	2.32E-06	1.68E-05	8.29E-05
47	0	0	2.86E-19	1.88E-10	4.07E-06	2.29E-05	8.84E-05
52	0	0	5.76E-19	1.07E-09	7.31E-06	2.97E-05	8.98E-05
57	0	0	2.48E-18	4.39E-09	1.09E-05	3.41E-05	8.85E-05
64	0	2.57E-20	1.06E-16	2.10E-08	1.65E-05	3.77E-05	9.44E-05
70	0	8.01E-20	2.12E-15	6.12E-08	2.00E-05	4.05E-05	8.89E-05
78	0	1.03E-19	5.06E-14	1.94E-07	2.31E-05	4.04E-05	9.42E-05
86	0	3.61E-19	6.41E-13	4.61E-07	2.63E-05	3.90E-05	0.000106883
95	0	1.32E-17	6.53E-12	9.82E-07	2.84E-05	3.96E-05	9.63E-05
100	3.16E-18	2.63E-16	1.95E-11	1.41E-06	2.84E-05	4.06E-05	8.94E-05
105	3.49E-18	5.68E-16	5.17E-11	1.96E-06	2.97E-05	4.09E-05	8.38E-05
116	5.54E-18	9.59E-15	3.24E-10	3.30E-06	3.06E-05	4.10E-05	8.16E-05
128	7.98E-18	1.50E-13	1.60E-09	4.99E-06	3.08E-05	4.33E-05	9.28E-05
141	1.05E-17	1.72E-12	6.35E-09	6.69E-06	3.03E-05	4.01E-05	8.12E-05
156	1.40E-17	1.65E-11	2.12E-08	8.27E-06	2.87E-05	3.84E-05	8.82E-05
172	1.42E-17	1.16E-10	5.85E-08	9.42E-06	2.86E-05	3.65E-05	8.83E-05
190	1.45E-17	6.71E-10	1.16E-07	1.03E-05	2.69E-05	3.57E-05	8.86E-05
210	1.44E-17	2.71E-09	2.63E-07	1.04E-05	2.48E-05	3.50E-05	8.71E-05
232	1.48E-17	3.42E-09	4.84E-07	1.01E-05	2.36E-05	3.23E-05	8.49E-05
256	1.38E-17	1.05E-08	6.07E-07	1.00E-05	2.27E-05	3.17E-05	7.59E-05
282	1.59E-16	1.83E-08	5.76E-07	9.60E-06	2.19E-05	2.86E-05	6.48E-05
300	1.12E-15	2.69E-08	5.06E-07	9.14E-06	2.13E-05	2.87E-05	6.75E-05
312	3.82E-15	2.21E-08	4.79E-07	9.06E-06	2.09E-05	2.77E-05	6.06E-05
344	6.56E-14	2.95E-08	3.87E-07	8.25E-06	2.01E-05	2.64E-05	5.50E-05
380	3.04E-14	2.69E-08	2.97E-07	7.65E-06	1.94E-05	2.46E-05	4.80E-05
420	1.48E-13	1.91E-08	1.89E-07	6.67E-06	1.87E-05	2.39E-05	4.24E-05
464	3.02E-13	8.23E-09	1.23E-07	5.63E-06	1.72E-05	2.34E-05	3.84E-05
512	1.04E-13	3.35E-09	7.52E-08	4.60E-06	1.67E-05	2.26E-05	3.62E-05
565	1.28E-14	1.35E-09	3.73E-08	3.69E-06	1.58E-05	2.17E-05	3.66E-05
624	5.05E-14	7.41E-10	1.49E-08	2.89E-06	1.49E-05	2.02E-05	3.64E-05
689	8.91E-15	2.90E-10	7.22E-09	2.28E-06	1.42E-05	1.93E-05	3.79E-05
761	8.82E-16	7.24E-11	3.28E-09	1.75E-06	1.35E-05	1.84E-05	3.38E-05
840	0	2.06E-11	1.23E-09	1.28E-06	1.24E-05	1.72E-05	3.18E-05
928	6.45E-16	4.59E-12	4.01E-10	9.07E-07	1.14E-05	1.64E-05	3.14E-05
1000	0	2.29E-12	1.76E-10	7.11E-07	1.10E-05	1.63E-05	3.05E-05
1024	1.41E-16	1.67E-12	1.27E-10	6.50E-07	1.07E-05	1.57E-05	3.08E-05
1131	1.79E-16	3.92E-13	3.61E-11	4.56E-07	9.93E-06	1.50E-05	3.08E-05
1249	2.05E-16	1.78E-13	8.54E-12	3.08E-07	9.32E-06	1.48E-05	3.12E-05
1379	6.22E-16	2.40E-14	1.73E-12	2.03E-07	8.17E-06	1.37E-05	2.94E-05
1523	0	1.75E-15	3.96E-13	1.29E-07	6.93E-06	1.29E-05	2.69E-05
1681	0	5.95E-16	4.21E-14	8.17E-08	6.03E-06	1.23E-05	2.54E-05
1856	0	1.34E-16	1.08E-14	4.70E-08	5.16E-06	1.12E-05	2.33E-05
2050	0	1.75E-17	1.39E-15	2.71E-08	4.43E-06	9.64E-06	2.23E-05
2263	0	3.21E-18	1.33E-16	1.48E-08	3.99E-06	8.35E-06	2.22E-05
2499	0	4.37E-18	5.27E-17	7.11E-09	3.45E-06	8.04E-06	2.00E-05
2759	1.39E-19	2.17E-18	1.05E-17	3.43E-09	2.76E-06	7.13E-06	1.92E-05
3046	0	6.55E-19	2.50E-18	1.52E-09	2.17E-06	6.73E-06	1.80E-05
3363	0	4.46E-20	1.19E-18	6.28E-10	1.68E-06	5.71E-06	1.67E-05
3714	0	3.94E-19	1.76E-18	2.39E-10	1.28E-06	4.77E-06	1.52E-05
4100	0	7.55E-19	1.74E-18	8.89E-11	9.53E-07	3.94E-06	1.37E-05
4527	4.28E-20	9.08E-19	1.47E-18	3.06E-11	6.97E-07	3.16E-06	1.23E-05
4999	0	0	3.08E-19	8.61E-12	4.89E-07	2.55E-06	1.17E-05
5519	0	0	2.89E-19	2.31E-12	3.48E-07	2.02E-06	1.09E-05
6094	0	3.12E-19	1.30E-18	5.44E-13	2.37E-07	1.56E-06	1.03E-05
6728	0	0	0	1.15E-13	1.57E-07	1.19E-06	9.53E-06
7428	0	0	0	2.06E-14	1.01E-07	8.89E-07	8.65E-06
8202	0	0	4.67E-18	3.13E-15	6.24E-08	6.50E-07	7.93E-06
9056	0	0	5.14E-18	5.53E-16	3.73E-08	4.65E-07	7.33E-06
9999	0	0	0	6.63E-16	2.23E-08	3.06E-07	6.27E-06
11039	0	0	0	4.69E-16	1.20E-08	2.10E-07	5.00E-06
12189	0	0	0	3.64E-16	6.17E-09	1.39E-07	4.08E-06
13458	0	0	2.41E-20	5.35E-16	2.94E-09	8.91E-08	3.41E-06
14859	0	0	5.08E-20	5.86E-16	1.28E-09	5.43E-08	2.81E-06
16406	8.96E-20	2.28E-16	4.54E-16	1.99E-15	5.19E-10	3.31E-08	2.28E-06
18114	0	1.73E-20	9.27E-20	4.37E-18	1.98E-10	1.94E-08	1.82E-06
20000	0	0	0	4.77E-18	7.42E-11	1.08E-08	1.43E-06

s2HRA1 GW	Species	RWQS (mg/l)					
	NH3-	0.5					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	1.16E-19	2.41E-18	5.67E-17
3	0	0	0	0	5.44E-17	8.45E-16	1.85E-14
4	0	0	0	0	4.70E-16	2.67E-14	4.28E-12
5	0	0	0	0	3.42E-12	3.87E-11	8.06E-10
6	0	0	0	3.06E-13	6.98E-10	2.40E-08	3.71E-07
7	1.77E-17	2.68E-16	4.49E-12	4.12E-06	3.54E-05	5.42E-05	7.92E-05
8	2.15E-17	4.42E-11	4.30E-08	3.34E-05	0.00010685	0.000126228	0.000166131
9	4.11E-17	1.32E-08	1.57E-06	6.80E-05	0.000149239	0.000177129	0.000236775
10	1.19E-14	2.38E-07	9.49E-06	9.51E-05	0.000176649	0.00021176	0.000281172
11	2.25E-12	1.51E-06	2.50E-05	0.00011085	0.000199346	0.000237339	0.000316105
13	1.24E-09	1.27E-05	5.90E-05	0.000123877	0.000234186	0.000281515	0.00037299
14	9.16E-09	2.28E-05	5.97E-05	0.00012594	0.000243709	0.000298779	0.000395827
16	1.51E-07	4.32E-05	5.71E-05	0.000122531	0.000262683	0.000317699	0.000435455
17	4.19E-07	4.44E-05	5.52E-05	0.000120535	0.000269166	0.000334818	0.000469615
19	2.00E-06	4.08E-05	4.98E-05	0.000108364	0.00027812	0.000345298	0.00049641
21	6.01E-06	3.56E-05	4.33E-05	9.80E-05	0.000281423	0.000364137	0.000514667
23	1.25E-05	2.90E-05	3.55E-05	8.44E-05	0.000285272	0.000363532	0.00051889
26	1.49E-05	2.26E-05	2.77E-05	6.66E-05	0.000275497	0.000373885	0.000601926
28	1.38E-05	1.86E-05	2.29E-05	5.75E-05	0.000280692	0.000372722	0.000604981
30	1.10E-05	1.55E-05	1.89E-05	4.89E-05	0.000280762	0.000365341	0.000562333
32	8.57E-06	1.24E-05	1.49E-05	4.06E-05	0.000279005	0.000367422	0.000556498
35	6.39E-06	8.76E-06	1.05E-05	2.97E-05	0.00026192	0.000362352	0.000538869
39	4.56E-06	6.06E-06	7.21E-06	2.02E-05	0.000238244	0.000351015	0.000525784
43	2.99E-06	4.03E-06	4.75E-06	1.40E-05	0.000221746	0.000327376	0.00051514
47	2.13E-06	2.85E-06	3.41E-06	9.76E-06	0.000194699	0.000297931	0.000532085
52	1.50E-06	1.95E-06	2.43E-06	6.61E-06	0.000162419	0.000262013	0.000532288
57	1.08E-06	1.41E-06	1.74E-06	4.78E-06	0.000132182	0.000240222	0.000516506
64	6.69E-07	8.77E-07	1.08E-06	2.97E-06	0.000106071	0.000200666	0.000483551
70	3.81E-07	4.98E-07	6.22E-07	1.83E-06	8.61E-05	0.000178653	0.000441224
78	1.99E-07	2.63E-07	3.28E-07	9.65E-07	6.40E-05	0.000144326	0.000395424
86	1.07E-07	1.41E-07	1.76E-07	5.34E-07	4.62E-05	0.000116205	0.000369403
95	4.93E-08	6.56E-08	8.24E-08	2.63E-07	3.04E-05	9.11E-05	0.000336247
100	2.47E-08	3.37E-08	4.55E-08	1.60E-07	2.43E-05	7.90E-05	0.000316981
105	9.04E-09	1.39E-08	1.83E-08	8.07E-08	1.93E-05	6.98E-05	0.000295776
116	3.08E-09	4.19E-09	5.69E-09	2.47E-08	1.28E-05	5.24E-05	0.000259064
128	8.85E-10	1.20E-09	1.66E-09	7.53E-09	7.78E-06	3.87E-05	0.000221291
141	2.60E-10	3.70E-10	4.97E-10	2.30E-09	4.91E-06	2.81E-05	0.000186338
156	7.22E-11	1.03E-10	1.40E-10	6.46E-10	2.90E-06	1.97E-05	0.000160397
172	3.03E-11	4.38E-11	5.96E-11	2.70E-10	1.64E-06	1.37E-05	0.000139585
190	1.06E-11	1.66E-11	2.27E-11	1.10E-10	9.06E-07	9.08E-06	0.000122073
210	8.04E-13	1.83E-12	2.66E-12	2.16E-11	4.77E-07	5.65E-06	0.000100235
232	0	4.60E-14	1.00E-13	3.21E-12	2.40E-07	3.41E-06	8.30E-05
256	2.01E-14	4.15E-14	5.95E-14	4.07E-13	1.14E-07	2.00E-06	6.79E-05
282	2.37E-14	3.93E-14	5.02E-14	1.58E-13	4.84E-08	1.14E-06	5.50E-05
300	0	7.18E-15	1.01E-14	4.00E-14	2.71E-08	7.74E-07	4.76E-05
312	0	0	2.24E-16	3.86E-15	1.84E-08	6.01E-07	4.33E-05
344	0	0	0	9.43E-17	6.72E-09	3.19E-07	3.39E-05
380	0	0	0	0	2.34E-09	1.62E-07	2.60E-05
420	0	0	0	4.92E-17	7.37E-10	7.79E-08	1.95E-05
464	0	1.69E-18	2.97E-18	1.79E-17	2.10E-10	3.52E-08	1.43E-05
512	0	0	0	3.59E-18	5.43E-11	1.47E-08	1.04E-05
565	0	0	0	1.53E-18	1.19E-11	5.52E-09	7.34E-06
624	0	0	0	5.34E-18	2.43E-12	1.96E-09	4.79E-06
689	0	0	7.32E-19	2.96E-17	4.11E-13	6.31E-10	3.03E-06
761	0	4.99E-18	1.51E-17	6.83E-17	5.87E-14	1.70E-10	1.85E-06
840	0	0	0	2.37E-16	7.40E-15	4.32E-11	1.09E-06
928	7.09E-17	1.80E-16	2.21E-16	5.98E-16	8.58E-15	1.01E-11	6.10E-07
1000	7.46E-17	2.80E-16	3.63E-16	8.54E-16	6.77E-15	2.57E-12	3.84E-07
1024	0	0	3.36E-19	1.56E-16	3.64E-15	1.87E-12	3.30E-07
1131	0	0	0	6.18E-17	1.42E-15	3.59E-13	1.68E-07
1249	0	9.50E-18	1.14E-16	6.72E-16	4.79E-15	9.98E-14	8.13E-08
1379	2.10E-16	3.23E-16	4.07E-16	9.51E-16	5.72E-15	2.48E-14	3.71E-08
1523	0	0	7.79E-20	2.87E-18	2.89E-17	8.13E-16	1.57E-08
1681	0	0	7.04E-19	3.34E-18	3.32E-17	2.05E-16	6.21E-09
1856	0	5.45E-20	4.39E-19	2.60E-18	2.80E-17	9.02E-17	2.26E-09
2050	0	2.94E-19	1.27E-18	5.92E-18	3.68E-17	8.36E-17	7.92E-10
2263	0	0	2.14E-20	3.31E-18	2.14E-17	5.23E-17	2.61E-10
2499	0	0	3.02E-20	1.44E-18	1.02E-17	1.87E-17	7.63E-11
2759	0	0	0	3.85E-19	3.70E-18	7.68E-18	1.77E-11
3046	0	0	0	5.36E-20	1.01E-18	3.18E-18	3.58E-12
3363	0	0	0	0	1.25E-18	4.15E-18	6.18E-13
3714	0	0	0	3.75E-19	3.48E-18	7.62E-18	9.10E-14
4100	0	0	1.27E-19	1.69E-18	9.53E-18	1.77E-17	1.12E-14
4527	0	0	3.60E-19	2.72E-18	1.36E-17	2.45E-17	1.20E-15
4999	0	0	0	0	2.20E-18	4.24E-18	1.28E-16
5519	0	0	0	7.53E-19	9.25E-18	1.84E-17	8.21E-17
6094	0	0	0	1.75E-18	2.10E-17	4.38E-17	1.52E-16
6728	0	0	0	1.88E-17	1.14E-16	2.11E-16	6.77E-16
7428	0	0	0	0	1.25E-16	3.20E-16	1.03E-15
8202	0	0	1.10E-17	2.09E-16	1.15E-15	1.93E-15	6.41E-15
9056	0	0	0	5.67E-17	4.92E-16	1.04E-15	4.60E-15
9999	0	9.61E-17	3.04E-16	1.53E-15	7.60E-15	1.51E-14	3.83E-14
11039	0	0	2.63E-20	9.68E-16	7.15E-15	1.28E-14	3.70E-14
12189	0	0	0	6.46E-16	5.08E-15	1.03E-14	3.25E-14
13458	0	1.58E-20	7.39E-17	1.01E-15	5.66E-15	9.12E-15	2.56E-14
14859	4.81E-16	7.31E-16	9.16E-16	2.24E-15	1.10E-14	1.83E-14	4.63E-14
16406	0	1.39E-16	2.77E-16	9.64E-16	4.91E-15	7.83E-15	2.16E-14
18114	0	0	0	0	1.86E-18	5.71E-18	4.49E-17
20000	0	0	0	5.19E-20	9.08E-18	1.61E-17	8.39E-17

s2HRA1 GW	Species	RWQS (mg/l)					
	As	0.01					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	3.43E-20
13	0	0	0	0	0	4.52E-20	1.88E-17
14	0	0	0	0	4.03E-20	8.90E-19	2.44E-16
16	0	0	0	0	8.22E-18	1.21E-16	1.41E-14
17	0	0	0	0	6.60E-17	8.10E-16	6.54E-14
19	0	0	0	1.56E-20	2.36E-15	2.16E-14	1.04E-12
21	0	0	0	9.81E-19	3.92E-14	3.13E-13	8.89E-12
23	0	0	0	2.82E-17	4.21E-13	2.64E-12	5.26E-11
26	0	0	0	1.53E-15	6.65E-12	3.39E-11	4.21E-10
28	0	0	0	1.36E-14	2.89E-11	1.28E-10	1.28E-09
30	0	0	0	8.47E-14	1.01E-10	3.93E-10	3.27E-09
32	0	0	0	4.03E-13	2.94E-10	1.03E-09	7.24E-09
35	0	0	0	2.93E-12	1.17E-09	3.51E-09	1.98E-08
39	0	0	5.07E-20	2.54E-11	5.33E-09	1.37E-08	5.88E-08
43	0	0	3.84E-19	1.46E-10	1.78E-08	4.13E-08	1.40E-07
47	0	0	8.44E-18	6.08E-10	4.55E-08	9.73E-08	2.97E-07
52	0	4.62E-20	2.47E-16	2.48E-09	1.14E-07	2.22E-07	6.44E-07
57	0	1.20E-19	3.95E-15	7.72E-09	2.37E-07	4.23E-07	1.19E-06
64	0	7.97E-19	9.16E-14	2.83E-08	5.45E-07	8.57E-07	2.15E-06
70	0	1.94E-17	8.00E-13	6.95E-08	9.54E-07	1.37E-06	3.11E-06
78	0	6.64E-16	8.59E-12	1.76E-07	1.75E-06	2.37E-06	4.59E-06
86	0	1.14E-14	5.84E-11	3.80E-07	2.73E-06	3.62E-06	5.97E-06
95	0	1.53E-13	3.36E-10	7.30E-07	4.00E-06	5.05E-06	7.60E-06
100	7.62E-18	5.23E-13	7.68E-10	9.97E-07	4.78E-06	5.89E-06	8.59E-06
105	8.76E-18	1.59E-12	1.59E-09	1.33E-06	5.52E-06	6.78E-06	9.31E-06
116	8.89E-18	1.30E-11	5.99E-09	2.19E-06	7.22E-06	8.58E-06	1.12E-05
128	1.91E-17	9.08E-11	2.06E-08	3.29E-06	8.84E-06	1.04E-05	1.37E-05
141	2.17E-17	5.01E-10	6.15E-08	4.63E-06	1.05E-05	1.23E-05	1.57E-05
156	1.20E-16	2.39E-09	1.56E-07	6.23E-06	1.23E-05	1.39E-05	1.82E-05
172	1.69E-15	8.38E-09	3.68E-07	7.82E-06	1.36E-05	1.57E-05	1.96E-05
190	2.82E-14	2.61E-08	7.91E-07	9.15E-06	1.51E-05	1.71E-05	2.14E-05
210	3.66E-13	7.28E-08	1.56E-06	1.01E-05	1.61E-05	1.83E-05	2.35E-05
232	3.61E-12	1.95E-07	2.81E-06	1.09E-05	1.76E-05	1.99E-05	2.53E-05
256	2.75E-11	4.61E-07	4.62E-06	1.12E-05	1.83E-05	2.16E-05	2.66E-05
282	1.64E-10	9.44E-07	6.23E-06	1.14E-05	1.91E-05	2.22E-05	2.91E-05
300	4.66E-10	1.41E-06	6.19E-06	1.13E-05	1.96E-05	2.29E-05	3.02E-05
312	8.72E-10	1.84E-06	6.03E-06	1.11E-05	1.99E-05	2.31E-05	3.03E-05
344	3.67E-09	3.01E-06	5.23E-06	1.06E-05	2.03E-05	2.41E-05	3.17E-05
380	1.36E-08	3.46E-06	4.43E-06	9.67E-06	2.12E-05	2.48E-05	3.36E-05
420	4.38E-08	2.81E-06	3.67E-06	8.41E-06	2.13E-05	2.59E-05	3.53E-05
464	1.27E-07	2.23E-06	2.84E-06	7.20E-06	2.13E-05	2.64E-05	3.62E-05
512	3.22E-07	1.70E-06	2.11E-06	5.93E-06	2.10E-05	2.64E-05	3.57E-05
565	6.50E-07	1.25E-06	1.58E-06	4.79E-06	2.10E-05	2.64E-05	3.64E-05
624	4.99E-07	8.85E-07	1.15E-06	3.73E-06	2.00E-05	2.55E-05	3.70E-05
689	3.91E-07	5.90E-07	7.80E-07	2.79E-06	1.96E-05	2.56E-05	3.78E-05
761	2.37E-07	3.74E-07	5.01E-07	2.07E-06	1.84E-05	2.49E-05	3.76E-05
840	1.47E-07	2.20E-07	3.02E-07	1.46E-06	1.77E-05	2.42E-05	3.65E-05
928	7.51E-08	1.24E-07	1.75E-07	9.67E-07	1.69E-05	2.35E-05	3.31E-05
1000	4.22E-08	7.46E-08	1.08E-07	6.78E-07	1.62E-05	2.23E-05	3.17E-05
1024	3.45E-08	6.30E-08	9.22E-08	6.01E-07	1.58E-05	2.21E-05	3.11E-05
1131	1.15E-08	2.39E-08	3.67E-08	3.35E-07	1.36E-05	2.07E-05	3.02E-05
1249	4.11E-09	9.44E-09	1.54E-08	1.79E-07	1.13E-05	1.98E-05	3.08E-05
1379	1.51E-09	3.59E-09	6.19E-09	9.24E-08	9.82E-06	1.79E-05	2.92E-05
1523	4.72E-10	1.25E-09	2.31E-09	4.47E-08	8.06E-06	1.58E-05	2.93E-05
1681	1.47E-10	4.24E-10	8.14E-10	2.10E-08	6.40E-06	1.44E-05	2.92E-05
1856	6.27E-11	1.97E-10	3.61E-10	1.04E-08	4.81E-06	1.28E-05	2.83E-05
2050	1.60E-11	5.79E-11	1.13E-10	4.29E-09	3.65E-06	1.09E-05	2.81E-05
2263	2.96E-12	1.39E-11	3.04E-11	1.65E-09	2.71E-06	9.18E-06	2.53E-05
2499	5.76E-13	3.01E-12	6.84E-12	5.78E-10	1.99E-06	7.03E-06	2.36E-05
2759	1.10E-13	5.60E-13	1.36E-12	1.81E-10	1.43E-06	5.67E-06	2.22E-05
3046	1.34E-14	8.20E-14	2.28E-13	5.10E-11	9.95E-07	4.54E-06	2.30E-05
3363	1.40E-15	1.05E-14	3.08E-14	1.25E-11	6.63E-07	3.35E-06	2.08E-05
3714	8.85E-17	8.87E-16	3.29E-15	2.73E-12	4.36E-07	2.49E-06	1.83E-05
4100	0	5.52E-17	3.07E-16	5.15E-13	2.76E-07	1.82E-06	1.61E-05
4527	2.89E-19	1.12E-17	3.84E-17	8.28E-14	1.71E-07	1.27E-06	1.38E-05
4999	1.07E-18	2.66E-18	4.57E-18	1.13E-14	1.01E-07	8.86E-07	1.16E-05
5519	0	1.89E-19	9.69E-19	1.29E-15	5.68E-08	6.13E-07	9.62E-06
6094	0	4.55E-19	1.11E-18	1.21E-16	3.13E-08	4.13E-07	7.86E-06
6728	0	0	0	7.69E-18	1.70E-08	2.71E-07	6.33E-06
7428	0	0	9.90E-19	1.19E-17	8.75E-09	1.72E-07	5.02E-06
8202	0	0	0	2.07E-18	4.27E-09	1.06E-07	3.91E-06
9056	0	0	6.64E-18	3.80E-17	1.96E-09	6.25E-08	2.99E-06
9999	0	0	0	3.36E-17	8.17E-10	3.55E-08	2.25E-06
11039	0	0	0	1.95E-17	2.95E-10	1.97E-08	1.66E-06
12189	0	0	0	8.44E-18	9.77E-11	1.04E-08	1.20E-06
13458	0	0	0	1.07E-17	2.92E-11	5.24E-09	8.47E-07
14859	0	0	0	1.29E-17	8.11E-12	2.48E-09	5.83E-07
16406	0	2.69E-20	5.69E-18	1.56E-16	2.17E-12	1.06E-09	3.91E-07
18114	0	0	0	1.64E-19	4.62E-13	4.16E-10	2.54E-07
20000	0	0	0	4.20E-19	8.52E-14	1.51E-10	1.60E-07

s2HRA1 GW	Species	RWQS (mg/l)					
	Cl-	250					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	2.80E-10	9.86E-10	1.50E-07
2	9.32E-07	0.000149316	0.000220975	0.000405242	0.000730851	0.00088686	0.00116935
3	0.00011808	0.00466	0.00615271	0.0117325	0.0210793	0.0251901	0.0325497
4	0.00284607	0.018311	0.0222064	0.0392196	0.0736563	0.0873107	0.119443
5	0.0174523	0.0232734	0.0272637	0.050703	0.120277	0.147768	0.21035
6	0.0166889	0.0199307	0.0234602	0.0446191	0.149425	0.186939	0.285053
7	0.0146054	0.0175204	0.0203367	0.0388625	0.171436	0.221429	0.336661
8	0.0128892	0.0154181	0.0180152	0.0343702	0.166319	0.241689	0.347521
9	0.0114279	0.0136816	0.0161085	0.0306125	0.173448	0.249193	0.375837
10	0.0098351	0.0116874	0.0139587	0.0266081	0.160524	0.243554	0.412509
11	0.00801835	0.0097232	0.0114184	0.0218385	0.145243	0.240122	0.433893
13	0.00651432	0.00805901	0.00957982	0.0179835	0.117696	0.204543	0.45981
14	0.00597285	0.00735602	0.0085403	0.0162251	0.107437	0.192974	0.441375
16	0.00494533	0.00608608	0.00712696	0.0132101	0.0858742	0.160369	0.435473
17	0.00414848	0.00508814	0.0059184	0.0112124	0.077786	0.146778	0.416785
19	0.00321132	0.00393281	0.00456048	0.00858263	0.0590537	0.119099	0.388445
21	0.00261829	0.00319905	0.00369726	0.00693675	0.0458632	0.0961719	0.36511
23	0.00220589	0.00268546	0.00309753	0.00581661	0.0378142	0.0779939	0.323163
26	0.00169161	0.0020925	0.00238113	0.00451849	0.0284828	0.0568648	0.295123
28	0.00123569	0.00153094	0.00175495	0.00340758	0.02202	0.0473105	0.269638
30	0.000849268	0.00104824	0.00122663	0.00239826	0.016522	0.0380066	0.234232
32	0.000594337	0.000743197	0.000865779	0.00169908	0.0120061	0.0296098	0.201135
35	0.000422636	0.00052113	0.000610068	0.00119976	0.00792445	0.0198606	0.156908
39	0.000309444	0.000380182	0.000450038	0.000874547	0.0052193	0.0123077	0.11143
43	0.000230106	0.000280759	0.000331444	0.000652362	0.00379146	0.00832453	0.0801219
47	0.000159503	0.000194533	0.000230023	0.000458591	0.00260471	0.00575036	0.0583125
52	9.85E-05	0.000119282	0.000140347	0.00028947	0.00162264	0.00356905	0.0392182
57	5.53E-05	6.85E-05	8.00E-05	0.000167795	0.000967553	0.00218031	0.0263297
64	2.93E-05	3.68E-05	4.30E-05	9.51E-05	0.000530594	0.0113841	0.0149521
70	1.57E-05	1.96E-05	2.31E-05	5.26E-05	0.000293159	0.000645652	0.00931714
78	9.02E-06	1.15E-05	1.33E-05	3.11E-05	0.00016902	0.00033366	0.00500783
86	3.96E-06	5.17E-06	6.00E-06	1.46E-05	8.15E-05	0.000163248	0.00271866
95	1.92E-06	2.53E-06	2.90E-06	7.41E-06	3.95E-05	8.43E-05	0.00137365
100	8.04E-07	1.07E-06	1.25E-06	3.30E-06	2.08E-05	4.70E-05	0.000945633
105	2.28E-07	3.11E-07	3.66E-07	1.02E-06	7.84E-06	2.11E-05	0.000643073
116	6.30E-08	8.70E-08	1.03E-07	2.94E-07	1.73E-06	4.47E-06	0.00030704
128	2.30E-08	3.20E-08	3.79E-08	1.11E-07	6.04E-07	1.49E-06	0.000141103
141	8.37E-09	1.17E-08	1.38E-08	4.25E-08	2.29E-07	4.98E-07	6.24E-05
156	3.07E-09	4.60E-09	5.50E-09	1.87E-08	1.00E-07	2.08E-07	2.49E-05
172	9.16E-10	1.46E-09	1.81E-09	7.40E-09	4.18E-08	9.48E-08	9.55E-06
190	1.22E-10	2.08E-10	3.01E-10	1.82E-09	1.13E-08	2.62E-08	3.31E-06
210	5.66E-13	4.63E-12	6.53E-12	1.48E-10	1.73E-09	4.50E-09	1.03E-06
232	4.44E-12	5.93E-12	7.57E-12	2.64E-11	2.44E-10	7.01E-10	2.66E-07
256	3.70E-13	3.31E-12	4.77E-12	1.13E-11	6.22E-11	1.03E-10	6.24E-08
282	6.13E-14	1.03E-12	1.82E-12	4.74E-12	2.36E-11	4.42E-11	1.33E-08
300	0	7.03E-15	2.08E-13	6.73E-13	3.74E-12	7.56E-12	4.57E-09
312	0	0	0	0	2.11E-15	1.41E-13	2.24E-09
344	0	1.71E-17	5.08E-16	3.97E-15	2.40E-14	5.09E-14	3.38E-10
380	0	0	0	0	1.43E-14	3.62E-14	4.18E-11
420	0	0	0	0	4.37E-15	1.09E-14	4.31E-12
464	0	1.20E-16	3.71E-16	1.60E-15	1.04E-14	1.91E-14	3.78E-13
512	1.03E-16	6.18E-16	9.09E-16	2.53E-15	1.42E-14	2.16E-14	7.58E-14
565	0	0	0	1.16E-15	6.98E-15	1.12E-14	5.60E-14
624	0	0	1.08E-16	1.67E-15	8.89E-15	1.66E-14	4.83E-14
689	1.66E-15	3.36E-15	3.99E-15	9.56E-15	4.23E-14	7.54E-14	2.57E-13
761	0	0	0	3.99E-15	3.73E-14	8.65E-14	3.77E-13
840	0	0	0	6.44E-15	5.44E-14	1.01E-13	2.99E-13
928	0	0	0	1.84E-14	2.43E-13	5.11E-13	1.92E-12
1000	0	0	0	7.68E-14	4.55E-13	8.58E-13	2.89E-12
1024	4.38E-14	9.37E-14	1.21E-13	2.85E-13	1.49E-12	2.40E-12	5.72E-12
1131	7.58E-14	1.02E-13	1.20E-13	2.47E-13	1.23E-12	2.17E-12	4.49E-12
1249	3.79E-14	5.21E-14	6.08E-14	1.27E-13	6.45E-13	1.13E-12	2.62E-12
1379	5.27E-15	9.55E-15	1.19E-14	2.78E-14	1.39E-13	2.40E-13	6.08E-13
1523	0	9.80E-17	1.95E-16	8.78E-16	4.79E-15	7.63E-15	2.41E-14
1681	0	2.13E-16	3.49E-16	1.17E-15	6.43E-15	1.22E-14	3.31E-14
1856	6.57E-17	4.32E-16	6.59E-16	1.90E-15	1.06E-14	1.95E-14	4.81E-14
2050	0	2.95E-16	5.61E-16	1.65E-15	8.80E-15	1.58E-14	4.50E-14
2263	0	0	5.88E-18	4.83E-16	2.82E-15	4.94E-15	1.62E-14
2499	0	0	0	0	2.78E-16	6.03E-16	3.37E-15
2759	0	0	0	2.53E-17	2.54E-16	5.13E-16	2.39E-15
3046	0	0	0	2.49E-17	2.03E-16	3.92E-16	1.11E-15
3363	5.18E-18	4.87E-17	6.67E-17	2.01E-16	1.11E-15	1.89E-15	4.97E-15
3714	1.50E-16	2.19E-16	2.61E-16	5.49E-16	2.91E-15	4.82E-15	1.32E-14
4100	2.80E-16	3.79E-16	4.44E-16	8.75E-16	4.65E-15	7.72E-15	2.08E-14
4527	2.76E-16	3.85E-16	4.70E-16	9.88E-16	5.46E-15	8.73E-15	2.44E-14
4999	0	0	0	0	9.03E-16	1.78E-15	6.25E-15
5519	0	0	0	0	2.77E-16	1.53E-15	9.34E-15
6094	0	0	0	1.62E-15	8.52E-15	1.52E-14	5.43E-14
6728	1.74E-16	1.25E-15	1.79E-15	4.72E-15	2.40E-14	4.24E-14	1.17E-13
7428	0	0	1.17E-15	7.84E-15	3.75E-14	7.28E-14	1.94E-13
8202	0	0	6.04E-15	2.47E-14	1.23E-13	2.03E-13	6.44E-13
9056	0	0	0	3.07E-14	1.68E-13	3.04E-13	6.50E-13
9999	0	0	1.94E-14	1.60E-13	8.01E-13	1.45E-12	4.20E-12
11039	1.58E-13	2.20E-13	2.69E-13	5.67E-13	3.04E-12	4.77E-12	1.42E-11
12189	1.64E-13	2.28E-13	2.88E-13	5.90E-13	3.07E-12	5.22E-12	1.47E-11
13458	6.80E-14	1.09E-13	1.41E-13	3.67E-13	1.95E-12	3.27E-12	9.87E-12
14859	1.37E-14	3.44E-14	4.90E-14	1.56E-13	8.52E-13	1.44E-12	4.24E-12
16406	0	3.21E-15	7.60E-15	2.81E-14	1.42E-13	2.54E-13	8.88E-13
18114	0	0	0	0	9.43E-17	3.94E-16	2.75E-15
20000	0	0	0	8.10E-17	1.19E-15	2.05E-15	5.76E-15

s2HRA1 GW	Species	RWQS (mg/l)					
	Cu	2					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0
86	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0
116	0	0	0	0	0	0	4.06E-21
128	0	0	0	0	0	0	1.39E-20
141	0	0	0	0	0	0	1.47E-19
156	0	0	0	0	0	0	5.74E-18
172	0	0	0	0	0	0	1.29E-16
190	0	0	0	0	0	0	2.29E-15
210	0	0	0	0	0	0	3.11E-14
232	0	0	0	0	0	0	3.21E-13
256	0	0	0	0	0	0	2.57E-12
282	0	0	0	0	0	7.84E-21	1.61E-11
300	0	0	0	0	0	4.21E-20	4.73E-11
312	0	0	0	0	0	7.19E-20	9.00E-11
344	0	0	0	0	0	6.87E-19	3.96E-10
380	0	0	0	0	0	1.55E-17	1.53E-09
420	0	0	0	0	0	3.01E-16	4.84E-09
464	0	0	0	0	5.61E-21	4.25E-15	1.33E-08
512	0	0	0	0	8.79E-20	4.41E-14	3.33E-08
565	0	0	0	0	2.22E-18	3.83E-13	7.37E-08
624	0	0	0	0	5.28E-17	2.94E-12	1.46E-07
689	0	0	0	0	9.22E-16	1.80E-11	2.47E-07
761	0	0	0	0	1.21E-14	8.31E-11	4.07E-07
840	0	0	0	0	1.27E-13	2.89E-10	5.28E-07
928	0	0	0	0	1.06E-12	9.92E-10	6.33E-07
1000	0	0	0	0	4.37E-12	2.14E-09	8.65E-07
1024	0	0	0	0	6.66E-12	2.67E-09	9.21E-07
1131	0	0	0	0	3.28E-11	6.29E-09	1.28E-06
1249	0	0	0	1.45E-20	1.43E-10	1.31E-08	1.29E-06
1379	0	0	0	4.88E-19	4.58E-10	2.62E-08	1.13E-06
1523	0	0	0	8.31E-18	1.35E-09	5.31E-08	1.26E-06
1681	0	0	0	1.76E-16	3.32E-09	9.63E-08	1.13E-06
1856	0	0	0	2.33E-15	9.29E-09	1.59E-07	1.11E-06
2050	0	0	0	2.73E-14	1.90E-08	2.03E-07	9.14E-07
2263	0	0	0	2.36E-13	3.46E-08	2.63E-07	9.41E-07
2499	0	0	0	1.59E-12	6.15E-08	2.97E-07	1.00E-06
2759	0	0	0	8.28E-12	9.31E-08	3.19E-07	9.34E-07
3046	0	0	1.10E-19	3.60E-11	1.36E-07	3.40E-07	8.80E-07
3363	0	0	2.30E-18	1.39E-10	1.71E-07	3.45E-07	8.03E-07
3714	0	0	4.87E-17	4.31E-10	2.10E-07	3.82E-07	7.41E-07
4100	0	0	7.68E-16	1.23E-09	2.37E-07	4.10E-07	7.81E-07
4527	0	2.10E-19	9.53E-15	3.07E-09	2.60E-07	3.86E-07	8.18E-07
4999	0	5.48E-18	9.14E-14	6.96E-09	2.74E-07	3.94E-07	7.68E-07
5519	0	1.08E-16	6.72E-13	1.42E-08	2.86E-07	4.10E-07	8.46E-07
6094	0	1.58E-15	3.94E-12	2.54E-08	3.00E-07	4.09E-07	8.06E-07
6728	0	5.36E-15	1.62E-11	4.19E-08	2.94E-07	4.09E-07	1.06E-06
7428	0	5.53E-14	6.77E-11	5.95E-08	2.96E-07	4.16E-07	1.07E-06
8202	0	3.22E-13	2.26E-10	7.68E-08	2.83E-07	4.28E-07	1.25E-06
9056	0	2.04E-12	6.58E-10	9.54E-08	2.85E-07	4.24E-07	1.23E-06
9999	0	7.35E-12	1.75E-09	1.07E-07	2.81E-07	4.20E-07	1.27E-06
11039	9.57E-19	3.18E-11	3.11E-09	1.10E-07	2.94E-07	4.11E-07	1.03E-06
12189	1.02E-18	6.03E-11	4.39E-09	1.12E-07	2.91E-07	4.14E-07	1.01E-06
13458	4.77E-18	2.18E-10	5.51E-09	1.10E-07	2.80E-07	3.97E-07	1.13E-06
14859	6.81E-18	3.44E-10	6.40E-09	1.08E-07	2.67E-07	3.95E-07	9.48E-07
16406	3.82E-16	4.94E-10	7.08E-09	1.04E-07	2.54E-07	3.67E-07	9.58E-07
18114	3.73E-16	3.34E-10	5.73E-09	9.52E-08	2.51E-07	3.46E-07	8.13E-07
20000	9.11E-16	4.14E-10	4.95E-09	8.70E-08	2.35E-07	3.11E-07	7.57E-07

s2HRA1 GW	Species	RWQS (mg/l)					
	Hg	0.001					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0
86	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0
128	0	0	0	0	0	0	0
141	0	0	0	0	0	0	0
156	0	0	0	0	0	0	0
172	0	0	0	0	0	0	4.68E-21
190	0	0	0	0	0	0	1.37E-19
210	0	0	0	0	5.68E-21	4.45E-20	2.97E-18
232	0	0	0	0	1.60E-19	1.05E-18	4.71E-17
256	0	0	0	0	3.03E-18	1.71E-17	5.56E-16
282	0	0	0	0	4.36E-17	2.09E-16	5.00E-15
300	0	0	0	5.20E-21	2.11E-16	9.34E-16	1.82E-14
312	0	0	0	2.42E-20	5.41E-16	2.34E-15	3.96E-14
344	0	0	0	5.83E-19	4.90E-15	1.85E-14	2.39E-13
380	0	0	0	1.02E-17	3.70E-14	1.24E-13	1.23E-12
420	0	0	0	1.44E-16	2.30E-13	7.05E-13	5.42E-12
464	0	0	0	1.68E-15	1.19E-12	3.22E-12	1.99E-11
512	0	0	0	1.44E-14	5.05E-12	1.23E-11	6.12E-11
565	0	0	0	9.38E-14	1.83E-11	4.09E-11	1.64E-10
624	0	0	0	5.01E-13	5.76E-11	1.20E-10	3.88E-10
689	0	0	0	2.30E-12	1.55E-10	3.04E-10	8.43E-10
761	0	0	1.82E-19	9.02E-12	3.80E-10	6.74E-10	1.66E-09
840	0	0	4.00E-18	3.09E-11	8.16E-10	1.33E-09	2.92E-09
928	0	0	6.69E-17	9.22E-11	1.56E-09	2.38E-09	5.13E-09
1000	0	1.66E-19	4.62E-16	1.90E-10	2.41E-09	3.52E-09	6.78E-09
1024	0	3.42E-19	8.29E-16	2.34E-10	2.73E-09	3.99E-09	7.56E-09
1131	0	6.90E-18	8.25E-15	5.40E-10	4.28E-09	6.16E-09	1.04E-08
1249	0	1.10E-16	6.56E-14	1.11E-09	6.30E-09	8.69E-09	1.29E-08
1379	0	1.32E-15	4.05E-13	2.04E-09	8.75E-09	1.12E-08	1.56E-08
1523	0	1.25E-14	2.13E-12	3.38E-09	1.11E-08	1.35E-08	1.97E-08
1681	0	9.44E-14	8.83E-12	5.05E-09	1.32E-08	1.57E-08	2.23E-08
1856	0	5.85E-13	3.10E-11	7.05E-09	1.48E-08	1.78E-08	2.81E-08
2050	0	3.00E-12	9.26E-11	8.68E-09	1.62E-08	2.03E-08	3.68E-08
2263	6.45E-19	1.10E-11	2.49E-10	9.64E-09	1.76E-08	2.33E-08	4.64E-08
2499	1.22E-17	3.47E-11	5.71E-10	1.01E-08	1.87E-08	2.60E-08	5.29E-08
2759	1.86E-16	1.04E-10	1.14E-09	1.00E-08	1.94E-08	2.93E-08	6.43E-08
3046	2.15E-15	2.84E-10	2.05E-09	9.93E-09	2.05E-08	3.23E-08	7.82E-08
3363	1.94E-14	6.84E-10	3.08E-09	9.56E-09	2.09E-08	3.61E-08	1.01E-07
3714	1.40E-13	1.28E-09	2.83E-09	8.76E-09	2.05E-08	4.42E-08	1.19E-07
4100	7.73E-13	1.43E-09	2.46E-09	7.63E-09	2.01E-08	4.55E-08	1.27E-07
4527	3.29E-12	1.16E-09	1.86E-09	6.58E-09	1.97E-08	5.32E-08	1.42E-07
4999	1.18E-11	8.75E-10	1.33E-09	5.66E-09	2.00E-08	5.26E-08	1.56E-07
5519	3.61E-11	5.48E-10	9.12E-10	4.74E-09	1.94E-08	5.44E-08	1.65E-07
6094	9.57E-11	3.67E-10	5.91E-10	3.75E-09	1.83E-08	5.48E-08	1.71E-07
6728	8.31E-11	2.39E-10	3.85E-10	2.85E-09	1.77E-08	6.99E-08	1.82E-07
7428	6.57E-11	1.45E-10	2.42E-10	2.11E-09	1.71E-08	7.25E-08	2.13E-07
8202	3.72E-11	8.20E-11	1.43E-10	1.53E-09	1.63E-08	7.59E-08	2.31E-07
9056	2.08E-11	4.51E-11	8.26E-11	1.12E-09	1.57E-08	6.89E-08	2.40E-07
9999	9.90E-12	2.33E-11	4.59E-11	7.78E-10	1.51E-08	7.10E-08	2.47E-07
11039	4.38E-12	1.17E-11	2.51E-11	5.31E-10	1.42E-08	6.87E-08	2.52E-07
12189	1.76E-12	5.23E-12	1.24E-11	3.70E-10	1.41E-08	6.07E-08	2.85E-07
13458	6.90E-13	2.16E-12	6.02E-12	2.40E-10	1.33E-08	5.43E-08	3.08E-07
14859	2.33E-13	8.29E-13	2.66E-12	1.51E-10	1.26E-08	5.23E-08	3.12E-07
16406	6.95E-14	2.92E-13	1.09E-12	8.83E-11	1.17E-08	5.64E-08	3.14E-07
18114	1.96E-14	9.49E-14	4.09E-13	5.05E-11	1.04E-08	5.07E-08	3.27E-07
20000	4.70E-15	2.77E-14	1.49E-13	2.71E-11	9.81E-09	6.74E-08	3.53E-07

s2HRA1 GW	Species	RWQS (mg/l)					
	Ni	0.02					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
16	0	0	0	0	0	0	1.69E-19
17	0	0	0	0	0	0	1.93E-18
19	0	0	0	0	0	0	9.24E-17
21	0	0	0	0	0	1.96E-19	2.33E-15
23	0	0	0	0	0	6.15E-18	3.12E-14
26	0	0	0	0	5.61E-19	3.92E-16	6.30E-13
28	0	0	0	0	7.60E-18	3.34E-15	3.25E-12
30	0	0	0	0	7.36E-17	2.16E-14	1.25E-11
32	0	0	0	0	5.23E-16	1.05E-13	4.06E-11
35	0	0	0	0	6.49E-15	8.85E-13	1.98E-10
39	0	0	0	0	1.04E-13	8.52E-12	1.08E-09
43	0	0	0	0	1.00E-12	5.13E-11	4.25E-09
47	0	0	0	1.46E-19	6.48E-12	2.21E-10	1.29E-08
52	0	0	0	4.40E-18	3.98E-11	9.46E-10	3.81E-08
57	0	0	0	8.55E-17	1.77E-10	3.05E-09	8.92E-08
64	0	0	0	2.67E-15	9.53E-10	1.26E-08	2.28E-07
70	0	0	0	2.70E-14	2.98E-09	3.04E-08	4.27E-07
78	0	0	0	3.47E-13	9.72E-09	8.06E-08	8.22E-07
86	0	0	0	2.74E-12	2.53E-08	1.82E-07	1.36E-06
95	0	0	0	1.83E-11	6.14E-08	3.76E-07	2.01E-06
100	0	0	4.47E-19	4.41E-11	9.24E-08	5.26E-07	2.35E-06
105	0	0	1.40E-18	9.87E-11	1.31E-07	6.72E-07	2.68E-06
116	0	0	7.12E-18	4.28E-10	2.60E-07	1.05E-06	3.39E-06
128	0	0	1.23E-16	1.62E-09	4.48E-07	1.53E-06	4.36E-06
141	0	1.91E-19	2.04E-15	5.35E-09	7.24E-07	2.23E-06	5.00E-06
156	0	3.13E-18	2.88E-14	1.54E-08	1.09E-06	2.81E-06	6.12E-06
172	0	8.59E-18	2.91E-13	3.82E-08	1.65E-06	3.30E-06	6.05E-06
190	0	1.76E-16	2.45E-12	8.80E-08	2.17E-06	3.68E-06	6.88E-06
210	3.98E-19	3.57E-15	1.68E-11	1.77E-07	2.55E-06	4.08E-06	7.93E-06
232	5.84E-19	4.88E-14	9.24E-11	3.23E-07	2.89E-06	4.07E-06	8.20E-06
256	8.00E-19	5.00E-13	4.14E-10	5.29E-07	3.07E-06	4.18E-06	7.72E-06
282	8.63E-19	4.10E-12	1.53E-09	7.80E-07	3.20E-06	4.29E-06	7.11E-06
300	1.18E-18	1.35E-11	3.28E-09	9.54E-07	3.13E-06	4.27E-06	6.71E-06
312	3.02E-18	2.77E-11	5.32E-09	1.06E-06	3.23E-06	4.43E-06	7.01E-06
344	6.53E-17	1.45E-10	1.74E-08	1.28E-06	3.35E-06	4.23E-06	6.75E-06
380	1.21E-15	6.40E-10	4.90E-08	1.43E-06	3.31E-06	4.22E-06	6.69E-06
420	1.69E-14	2.43E-09	1.03E-07	1.49E-06	3.28E-06	4.38E-06	6.62E-06
464	1.77E-13	7.84E-09	1.58E-07	1.47E-06	3.13E-06	4.06E-06	6.58E-06
512	1.41E-12	2.10E-08	2.39E-07	1.41E-06	3.06E-06	3.80E-06	6.70E-06
565	8.94E-12	3.74E-08	2.26E-07	1.33E-06	2.81E-06	3.79E-06	7.31E-06
624	4.69E-11	4.42E-08	2.32E-07	1.21E-06	2.64E-06	3.59E-06	7.13E-06
689	2.37E-10	5.00E-08	1.97E-07	1.10E-06	2.53E-06	3.50E-06	6.72E-06
761	5.56E-10	4.40E-08	1.34E-07	9.21E-07	2.47E-06	3.55E-06	6.47E-06
840	4.47E-10	3.42E-08	9.57E-08	7.56E-07	2.40E-06	3.39E-06	6.10E-06
928	2.07E-10	1.71E-08	6.32E-08	5.91E-07	2.28E-06	3.27E-06	6.13E-06
1000	3.42E-10	1.20E-08	4.16E-08	4.81E-07	2.19E-06	3.22E-06	5.80E-06
1024	2.62E-10	9.54E-09	3.57E-08	4.59E-07	2.22E-06	3.14E-06	5.83E-06
1131	1.77E-10	4.28E-09	1.96E-08	3.47E-07	2.05E-06	2.93E-06	6.09E-06
1249	8.12E-11	1.77E-09	8.64E-09	2.58E-07	2.03E-06	2.82E-06	5.90E-06
1379	2.04E-11	6.34E-10	4.52E-09	1.81E-07	1.95E-06	2.66E-06	5.59E-06
1523	5.87E-12	2.40E-10	1.85E-09	1.21E-07	1.86E-06	2.59E-06	5.09E-06
1681	1.15E-12	8.77E-11	7.05E-10	8.32E-08	1.72E-06	2.46E-06	4.56E-06
1856	1.89E-13	2.93E-11	2.49E-10	5.47E-08	1.64E-06	2.32E-06	4.75E-06
2050	3.37E-14	8.36E-12	8.58E-11	3.55E-08	1.47E-06	2.15E-06	4.96E-06
2263	6.03E-15	2.30E-12	2.28E-11	2.18E-08	1.31E-06	2.07E-06	4.37E-06
2499	5.77E-16	4.64E-13	6.20E-12	1.31E-08	1.14E-06	1.87E-06	4.03E-06
2759	5.62E-17	7.73E-14	1.42E-12	7.68E-09	9.86E-07	1.82E-06	4.10E-06
3046	1.56E-18	9.57E-15	3.10E-13	4.27E-09	8.58E-07	1.67E-06	4.01E-06
3363	1.12E-18	1.03E-15	5.60E-14	2.20E-09	6.96E-07	1.50E-06	3.59E-06
3714	3.86E-19	1.34E-16	6.63E-15	1.07E-09	5.55E-07	1.39E-06	3.23E-06
4100	3.73E-20	7.83E-18	7.79E-16	5.06E-10	4.41E-07	1.28E-06	3.03E-06
4527	4.67E-20	5.63E-19	7.21E-17	2.21E-10	3.44E-07	1.09E-06	2.89E-06
4999	3.10E-20	2.65E-19	8.73E-18	9.39E-11	2.61E-07	9.41E-07	2.71E-06
5519	0	9.75E-20	9.87E-19	3.63E-11	1.86E-07	8.04E-07	2.43E-06
6094	0	1.40E-19	3.58E-19	1.27E-11	1.29E-07	6.71E-07	2.10E-06
6728	0	7.91E-20	2.97E-19	4.15E-12	9.18E-08	5.54E-07	1.91E-06
7428	0	0	4.18E-19	1.16E-12	6.34E-08	4.51E-07	1.74E-06
8202	0	0	0	3.07E-13	4.49E-08	3.62E-07	1.55E-06
9056	0	1.25E-18	3.00E-18	7.24E-14	3.03E-08	2.77E-07	1.31E-06
9999	0	0	6.62E-19	1.44E-14	1.96E-08	2.15E-07	1.09E-06
11039	0	0	5.82E-20	2.12E-15	1.08E-08	1.64E-07	9.52E-07
12189	0	0	0	3.97E-16	6.36E-09	1.23E-07	7.97E-07
13458	0	0	0	9.46E-17	3.55E-09	8.99E-08	6.40E-07
14859	0	0	0	6.83E-17	2.02E-09	6.33E-08	5.36E-07
16406	0	8.27E-18	3.23E-17	1.68E-16	1.10E-09	4.34E-08	4.29E-07
18114	0	0	1.44E-20	1.59E-18	5.30E-10	2.89E-08	3.39E-07
20000	0	0	0	5.74E-19	2.34E-10	1.87E-08	2.56E-07

s2HRA1 GW	Species	RWQS (mg/l)					
	SO4	250					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	2.51E-09	8.50E-09	1.27E-06
2	6.51E-06	0.00143422	0.00205644	0.00384363	0.00694223	0.00799342	0.011191
3	0.00113167	0.0442201	0.0603283	0.110142	0.197051	0.232185	0.305242
4	0.0311942	0.18393	0.215542	0.375135	0.689784	0.808352	1.11712
5	0.174373	0.235199	0.268697	0.50515	1.16324	1.39493	1.87593
6	0.16644	0.217698	0.246981	0.478159	1.48792	1.89273	2.5904
7	0.166931	0.205295	0.228835	0.441697	1.68435	2.17468	3.13341
8	0.156862	0.191855	0.213991	0.411152	1.83963	2.45332	3.66126
9	0.145913	0.178707	0.201219	0.388086	1.87752	2.6463	4.04694
10	0.13383	0.163891	0.185922	0.355089	1.84576	2.82201	4.14569
11	0.12031	0.147071	0.166241	0.321574	1.78087	2.77882	4.68299
13	0.107848	0.130344	0.149034	0.287114	1.5754	2.62417	5.29164
14	0.102784	0.125389	0.142136	0.2737	1.49353	2.62056	5.26146
16	0.0917589	0.111549	0.127691	0.243979	1.34721	2.38067	5.07945
17	0.0831295	0.101056	0.115261	0.223186	1.28207	2.27054	4.98028
19	0.0716589	0.0865947	0.0992891	0.191845	1.11306	1.99826	4.86843
21	0.0638606	0.0774424	0.0894548	0.171206	0.976454	1.76407	5.01678
23	0.0579911	0.0714871	0.0819758	0.156101	0.883498	1.58687	4.65848
26	0.0504628	0.0620774	0.0711964	0.134521	0.745662	1.33632	4.55733
28	0.0423599	0.0518383	0.0604746	0.114269	0.657826	1.19802	4.18315
30	0.0345161	0.0423151	0.049127	0.0933185	0.55389	1.03752	3.92804
32	0.0287814	0.0350218	0.0405908	0.0776694	0.46871	0.880711	3.57997
35	0.0238859	0.0288907	0.0334979	0.0635108	0.365521	0.703712	2.99786
39	0.0202643	0.0243653	0.0282403	0.054234	0.295186	0.548434	2.36142
43	0.0170965	0.0207078	0.0238631	0.0456998	0.248749	0.452553	1.90459
47	0.0138987	0.0167466	0.0193002	0.0371947	0.203379	0.378293	1.55727
52	0.0104504	0.0126443	0.0144978	0.0280385	0.153183	0.293921	1.20125
57	0.00746937	0.00918303	0.0105979	0.0207767	0.113002	0.224746	0.919433
64	0.00532173	0.00646484	0.00749879	0.0148739	0.0783488	0.151865	0.624223
70	0.00375141	0.00457223	0.00534283	0.0106819	0.0569046	0.1088	0.457182
78	0.00278991	0.00342213	0.00396084	0.00806426	0.0423392	0.0768148	0.310307
86	0.00173413	0.0021491	0.0024684	0.00512428	0.0265411	0.0497933	0.21448
95	0.00114475	0.00143049	0.00165259	0.00349251	0.0178565	0.0322893	0.141457
100	0.000702232	0.000889463	0.00104166	0.00222126	0.0121839	0.0237296	0.111029
105	0.000323052	0.00041692	0.000495292	0.00109003	0.00650131	0.013689	0.0784356
116	0.000143407	0.000186636	0.000223935	0.000510401	0.00270773	0.0051432	0.0344912
128	8.02E-05	0.00010706	0.000127149	0.000300597	0.00154607	0.00285332	0.0160674
141	4.75E-05	6.43E-05	7.60E-05	0.000186988	0.000958047	0.0016906	0.00825229
156	3.12E-05	4.20E-05	4.96E-05	0.000126744	0.000646128	0.00110534	0.00501761
172	1.83E-05	2.44E-05	2.92E-05	7.60E-05	0.000389485	0.000647542	0.00301046
190	8.23E-06	1.09E-05	1.33E-05	3.53E-05	0.000183309	0.000302276	0.00137375
210	2.85E-06	3.89E-06	4.80E-06	1.33E-05	7.13E-05	0.000119253	0.000548534
232	8.90E-07	1.26E-06	1.56E-06	4.64E-06	2.49E-05	4.27E-05	0.000210219
256	2.42E-07	3.60E-07	4.43E-07	1.44E-06	7.66E-06	1.37E-05	7.20E-05
282	6.28E-08	9.31E-08	1.15E-07	4.07E-07	2.16E-06	3.97E-06	2.15E-05
300	1.27E-08	2.02E-08	2.49E-08	9.58E-08	5.32E-07	1.09E-06	6.93E-06
312	2.50E-09	4.16E-09	5.05E-09	2.00E-08	1.25E-07	2.76E-07	2.32E-06
344	4.52E-10	7.40E-10	9.34E-10	3.95E-09	2.30E-08	4.82E-08	3.12E-07
380	4.38E-11	7.38E-11	1.04E-10	5.81E-10	3.81E-09	8.03E-09	4.83E-08
420	0	1.23E-11	2.07E-11	9.92E-11	7.00E-10	1.43E-09	6.95E-09
464	1.24E-12	3.29E-12	4.48E-12	2.44E-11	1.67E-10	3.29E-10	1.92E-09
512	2.00E-13	5.72E-13	8.59E-13	5.47E-12	3.78E-11	8.44E-11	4.43E-10
565	0	3.58E-14	9.91E-14	8.55E-13	6.47E-12	1.46E-11	6.97E-11
624	0	0	0	1.50E-14	5.42E-13	1.11E-12	6.59E-12
689	0	2.06E-14	3.31E-14	1.02E-13	5.14E-13	9.10E-13	2.67E-12
761	0	0	0	3.45E-14	3.49E-13	7.49E-13	3.28E-12
840	0	0	0	0	6.07E-14	1.84E-13	1.24E-12
928	0	0	0	0	2.11E-12	5.10E-12	2.83E-11
1000	0	0	0	9.23E-14	3.00E-12	6.75E-12	2.50E-11
1024	0	2.50E-13	5.45E-13	2.24E-12	1.15E-11	2.23E-11	6.32E-11
1131	2.57E-13	8.45E-13	9.90E-13	2.32E-12	1.15E-11	2.20E-11	5.11E-11
1249	2.44E-13	3.79E-13	5.05E-13	1.12E-12	5.91E-12	1.01E-11	2.54E-11
1379	0	3.03E-14	6.81E-14	2.19E-13	1.17E-12	2.02E-12	5.00E-12
1523	0	0	0	5.22E-15	3.90E-14	8.73E-14	2.68E-13
1681	0	0	1.63E-15	1.32E-14	8.16E-14	1.30E-13	3.54E-13
1856	3.29E-16	4.52E-15	7.67E-15	2.49E-14	1.19E-13	2.44E-13	5.57E-13
2050	0	4.17E-15	7.82E-15	2.37E-14	1.20E-13	2.16E-13	5.23E-13
2263	0	0	1.00E-15	7.64E-15	4.31E-14	7.37E-14	2.40E-13
2499	0	0	0	0	3.96E-15	8.79E-15	3.36E-14
2759	0	0	0	6.86E-16	4.46E-15	8.00E-15	2.16E-14
3046	0	0	0	1.04E-16	1.93E-15	3.87E-15	1.63E-14
3363	0	2.00E-17	2.46E-16	1.42E-15	8.31E-15	1.44E-14	5.67E-14
3714	5.96E-16	1.34E-15	1.77E-15	4.15E-15	2.04E-14	3.73E-14	1.15E-13
4100	1.34E-15	2.57E-15	3.11E-15	6.81E-15	3.53E-14	6.30E-14	1.82E-13
4527	5.72E-16	2.34E-15	3.47E-15	8.38E-15	4.28E-14	7.43E-14	2.09E-13
4999	0	0	0	1.66E-15	1.48E-14	2.83E-14	1.04E-13
5519	0	0	0	0	0	1.40E-16	1.77E-14
6094	0	0	0	1.11E-14	7.02E-14	1.24E-13	3.93E-13
6728	0	1.11E-15	6.94E-15	3.72E-14	2.14E-13	3.45E-13	9.99E-13
7428	0	0	0	6.59E-14	3.18E-13	6.22E-13	1.52E-12
8202	0	0	0	2.05E-13	1.12E-12	2.11E-12	5.97E-12
9056	0	0	0	3.10E-13	1.96E-12	3.54E-12	1.34E-11
9999	0	0	1.63E-13	1.63E-12	8.62E-12	1.50E-11	4.72E-11
11039	1.42E-12	1.99E-12	2.35E-12	5.24E-12	2.53E-11	4.32E-11	1.21E-10
12189	1.37E-12	2.14E-12	2.52E-12	5.24E-12	2.52E-11	4.57E-11	1.28E-10
13458	5.65E-13	1.03E-12	1.33E-12	3.19E-12	1.59E-11	2.94E-11	8.17E-11
14859	1.17E-13	2.99E-13	4.64E-13	1.35E-12	7.05E-12	1.30E-11	3.84E-11
16406	4.08E-15	2.87E-14	7.08E-14	2.73E-13	1.51E-12	2.75E-12	6.12E-12
18114	0	0	1.45E-15	1.02E-14	5.62E-14	1.02E-13	3.42E-13
20000	0	0	0	2.18E-15	1.95E-14	4.27E-14	1.60E-13

s2HRA1 GW	Species	RWQS (mg/l)					
	Zn	5					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	1.31E-19
7	0	0	0	0	0	0	5.55E-19
8	0	0	0	0	0	0	1.19E-14
9	0	0	0	0	0	8.59E-21	4.05E-13
10	0	0	0	0	0	1.62E-20	8.18E-12
11	0	0	0	0	0	2.90E-19	7.44E-11
13	0	0	0	0	0	2.05E-16	2.75E-09
14	0	0	0	0	4.27E-20	2.92E-15	1.02E-08
16	0	0	0	0	2.09E-17	3.09E-13	7.58E-08
17	0	0	0	0	1.30E-16	1.52E-12	1.64E-07
19	0	0	0	0	6.21E-15	1.89E-11	5.58E-07
21	0	0	0	0	1.06E-13	1.36E-10	1.41E-06
23	0	0	0	0	1.11E-12	6.81E-10	2.90E-06
26	0	0	0	0	1.85E-11	4.63E-09	7.24E-06
28	0	0	0	7.47E-21	8.45E-11	1.29E-08	1.00E-05
30	0	0	0	1.37E-19	3.09E-10	3.40E-08	1.42E-05
32	0	0	0	9.21E-19	9.56E-10	7.83E-08	1.89E-05
35	0	0	0	1.57E-17	4.01E-09	1.97E-07	2.65E-05
39	0	0	0	6.45E-16	1.76E-08	5.03E-07	3.69E-05
43	0	0	0	1.25E-14	5.53E-08	1.07E-06	4.45E-05
47	0	0	0	1.38E-13	1.45E-07	1.94E-06	5.34E-05
52	0	0	0	1.60E-12	3.77E-07	3.73E-06	5.68E-05
57	0	0	0	1.17E-11	7.49E-07	6.08E-06	5.95E-05
64	0	0	2.17E-20	1.07E-10	1.67E-06	9.09E-06	5.47E-05
70	0	0	4.26E-19	4.95E-10	2.94E-06	1.26E-05	5.74E-05
78	0	0	2.05E-17	2.64E-09	5.10E-06	1.73E-05	5.90E-05
86	0	0	5.60E-16	1.02E-08	7.72E-06	2.06E-05	6.04E-05
95	0	0	1.11E-14	3.30E-08	1.13E-05	2.48E-05	5.68E-05
100	0	3.81E-18	4.57E-14	5.83E-08	1.29E-05	2.61E-05	5.75E-05
105	0	1.70E-17	1.64E-13	9.78E-08	1.47E-05	2.53E-05	5.63E-05
116	0	3.90E-17	1.82E-12	2.52E-07	1.78E-05	2.78E-05	6.11E-05
128	0	5.12E-16	1.56E-11	5.85E-07	2.07E-05	2.87E-05	6.20E-05
141	1.22E-19	9.44E-15	1.09E-10	1.17E-06	2.18E-05	3.05E-05	6.31E-05
156	4.44E-18	1.46E-13	6.27E-10	2.08E-06	2.27E-05	3.32E-05	5.93E-05
172	6.68E-18	1.56E-12	2.98E-09	3.36E-06	2.40E-05	3.37E-05	5.62E-05
190	7.97E-18	1.56E-11	1.17E-08	4.87E-06	2.37E-05	3.54E-05	5.47E-05
210	2.01E-17	1.22E-10	3.94E-08	6.34E-06	2.39E-05	3.51E-05	5.65E-05
232	2.54E-17	6.56E-10	1.04E-07	7.63E-06	2.34E-05	3.43E-05	6.21E-05
256	1.72E-16	2.88E-09	2.14E-07	8.31E-06	2.37E-05	3.19E-05	5.58E-05
282	3.37E-15	1.04E-08	3.21E-07	8.46E-06	2.32E-05	3.11E-05	5.99E-05
300	2.01E-14	2.15E-08	4.28E-07	8.48E-06	2.17E-05	3.02E-05	6.13E-05
312	5.88E-14	2.31E-08	5.21E-07	8.53E-06	2.08E-05	2.86E-05	6.14E-05
344	7.00E-13	4.08E-08	6.90E-07	8.29E-06	1.90E-05	2.74E-05	5.73E-05
380	6.69E-12	5.68E-08	7.67E-07	7.88E-06	1.80E-05	2.62E-05	5.83E-05
420	2.17E-11	8.62E-08	7.97E-07	7.34E-06	1.74E-05	2.53E-05	4.93E-05
464	4.53E-11	9.98E-08	6.28E-07	6.46E-06	1.64E-05	2.38E-05	4.81E-05
512	1.72E-11	9.11E-08	4.94E-07	5.67E-06	1.53E-05	2.38E-05	4.35E-05
565	1.35E-11	4.93E-08	3.15E-07	4.75E-06	1.48E-05	2.15E-05	4.71E-05
624	6.18E-12	2.53E-08	2.23E-07	3.70E-06	1.41E-05	2.04E-05	4.67E-05
689	2.24E-12	1.40E-08	1.21E-07	2.92E-06	1.35E-05	2.01E-05	4.65E-05
761	5.49E-13	5.45E-09	5.91E-08	2.15E-06	1.27E-05	1.92E-05	4.71E-05
840	4.29E-13	1.88E-09	2.96E-08	1.56E-06	1.22E-05	1.75E-05	3.55E-05
928	6.96E-14	6.36E-10	1.27E-08	1.09E-06	1.13E-05	1.63E-05	3.40E-05
1000	6.51E-14	3.37E-10	6.11E-09	7.96E-07	1.07E-05	1.61E-05	3.55E-05
1024	4.59E-14	1.79E-10	4.50E-09	7.09E-07	1.05E-05	1.58E-05	3.40E-05
1131	2.00E-14	7.09E-11	1.63E-09	4.60E-07	1.01E-05	1.52E-05	3.03E-05
1249	2.16E-15	1.91E-11	5.80E-10	3.07E-07	9.30E-06	1.38E-05	2.98E-05
1379	9.41E-16	4.46E-12	1.84E-10	2.00E-07	8.56E-06	1.36E-05	2.99E-05
1523	1.59E-18	7.45E-13	5.38E-11	1.17E-07	7.60E-06	1.30E-05	2.92E-05
1681	1.37E-16	1.08E-13	1.20E-11	7.18E-08	6.89E-06	1.14E-05	2.55E-05
1856	3.17E-17	1.65E-14	2.59E-12	4.11E-08	5.93E-06	1.04E-05	2.38E-05
2050	9.33E-18	2.35E-15	4.44E-13	2.23E-08	4.98E-06	9.66E-06	2.29E-05
2263	0	1.93E-16	7.56E-14	1.14E-08	4.30E-06	8.62E-06	2.08E-05
2499	1.05E-18	5.78E-17	9.88E-15	5.51E-09	3.44E-06	8.03E-06	1.84E-05
2759	3.03E-19	1.04E-17	1.62E-15	2.51E-09	2.79E-06	7.49E-06	1.59E-05
3046	0	2.17E-18	1.43E-16	1.13E-09	2.17E-06	6.40E-06	1.43E-05
3363	0	8.41E-19	1.38E-17	4.74E-10	1.66E-06	5.28E-06	1.41E-05
3714	0	8.02E-19	4.50E-18	1.85E-10	1.31E-06	4.55E-06	1.42E-05
4100	0	7.96E-19	1.97E-18	6.20E-11	9.58E-07	3.67E-06	1.29E-05
4527	0	5.57E-19	1.28E-18	1.94E-11	6.92E-07	3.16E-06	1.23E-05
4999	0	1.66E-19	5.63E-19	5.32E-12	4.89E-07	2.45E-06	1.07E-05
5519	0	0	2.16E-19	1.31E-12	3.26E-07	1.87E-06	9.44E-06
6094	0	2.85E-19	8.15E-19	2.96E-13	2.20E-07	1.45E-06	7.98E-06
6728	0	0	4.59E-19	5.69E-14	1.47E-07	1.11E-06	6.69E-06
7428	0	0	0	9.54E-15	9.40E-08	8.61E-07	5.72E-06
8202	0	0	0	1.27E-15	5.60E-08	6.12E-07	4.91E-06
9056	0	0	7.75E-18	2.46E-16	3.21E-08	4.32E-07	4.25E-06
9999	0	0	0	2.02E-16	1.75E-08	3.02E-07	3.63E-06
11039	0	0	0	1.51E-16	9.19E-09	2.03E-07	3.06E-06
12189	0	0	0	1.16E-16	4.57E-09	1.34E-07	2.54E-06
13458	0	0	0	1.51E-16	2.23E-09	8.61E-08	1.97E-06
14859	0	0	1.21E-20	3.18E-16	1.02E-09	5.26E-08	1.48E-06
16406	0	9.64E-17	2.43E-16	1.07E-15	4.39E-10	2.90E-08	1.09E-06
18114	0	0	5.14E-20	1.74E-18	1.75E-10	1.57E-08	7.88E-07
20000	0	0	0	2.48E-18	6.44E-11	8.28E-09	5.63E-07

s3HRA1 GW	Species	RWQS (mg/l)					
	NH3-	0.5					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	4.05E-17	4.80E-16	3.55E-15
3	0	0	0	0	1.31E-14	3.31E-13	3.25E-12
4	0	0	0	2.52E-19	3.18E-12	7.22E-11	5.57E-10
5	0	0	0	1.20E-15	7.39E-10	9.14E-09	6.41E-08
6	0	0	0	8.71E-12	2.15E-07	9.19E-07	2.97E-06
7	3.52E-17	6.32E-15	5.20E-11	7.29E-06	6.27E-05	8.45E-05	0.000142068
8	4.24E-17	5.35E-10	9.75E-08	6.10E-05	0.000172672	0.00021038	0.00027466
9	2.29E-15	9.78E-08	2.41E-06	0.000113389	0.000239859	0.000286993	0.000368839
10	1.68E-12	1.35E-06	1.18E-05	0.000144874	0.000275091	0.000326028	0.000451986
11	1.24E-10	6.69E-06	3.35E-05	0.000161629	0.000299689	0.00036722	0.000512601
13	1.72E-08	3.83E-05	7.38E-05	0.000160181	0.000326355	0.000434757	0.000603117
14	7.99E-08	5.44E-05	7.58E-05	0.000158929	0.000333299	0.000455032	0.000623364
16	6.72E-07	4.84E-05	6.42E-05	0.000146976	0.000340326	0.0004567	0.000673532
17	1.45E-06	4.63E-05	5.84E-05	0.000139696	0.000343388	0.000445801	0.000712781
19	4.73E-06	3.69E-05	4.68E-05	0.000118353	0.000337183	0.00045783	0.000690598
21	1.10E-05	2.98E-05	3.82E-05	9.99E-05	0.000338277	0.00044502	0.000706419
23	1.63E-05	2.23E-05	2.90E-05	8.13E-05	0.000347318	0.000464707	0.000715275
26	1.19E-05	1.62E-05	2.06E-05	5.78E-05	0.000334207	0.000445708	0.000672478
28	8.98E-06	1.23E-05	1.59E-05	4.71E-05	0.000317264	0.000444236	0.000677789
30	6.81E-06	9.42E-06	1.21E-05	3.70E-05	0.000307347	0.000437129	0.000659948
32	4.92E-06	6.54E-06	8.86E-06	2.96E-05	0.000290927	0.00043697	0.000670969
35	2.99E-06	4.10E-06	5.44E-06	1.96E-05	0.0002671	0.000416731	0.000687876
39	1.76E-06	2.55E-06	3.24E-06	1.17E-05	0.000234912	0.000363673	0.00068122
43	9.41E-07	1.40E-06	1.80E-06	6.97E-06	0.000209455	0.000346042	0.00065219
47	5.75E-07	8.31E-07	1.10E-06	4.26E-06	0.000177157	0.000320563	0.000617381
52	3.47E-07	5.08E-07	6.73E-07	2.43E-06	0.000136869	0.000278832	0.000621157
57	2.25E-07	3.19E-07	4.30E-07	1.46E-06	0.000103705	0.000238124	0.000549674
64	1.11E-07	1.59E-07	2.13E-07	7.11E-07	7.14E-05	0.000205095	0.000500587
70	4.88E-08	7.58E-08	9.76E-08	3.61E-07	5.45E-05	0.000168528	0.00048812
78	1.93E-08	2.99E-08	3.97E-08	1.47E-07	3.71E-05	0.00012949	0.000479371
86	7.83E-09	1.24E-08	1.66E-08	6.51E-08	2.51E-05	0.000103141	0.000480098
95	2.52E-09	4.15E-09	5.71E-09	2.48E-08	1.68E-05	8.23E-05	0.000438075
100	9.55E-10	1.74E-09	2.48E-09	1.28E-08	1.39E-05	7.28E-05	0.00041453
105	2.52E-10	4.82E-10	7.92E-10	5.58E-09	1.15E-05	6.45E-05	0.000391445
116	6.21E-11	1.08E-10	1.62E-10	1.15E-09	7.55E-06	4.87E-05	0.0003435
128	1.73E-11	2.81E-11	3.94E-11	2.53E-10	4.69E-06	3.40E-05	0.000294949
141	5.86E-12	9.38E-12	1.31E-11	6.41E-11	2.94E-06	2.39E-05	0.000246676
156	1.64E-12	3.26E-12	5.02E-12	2.08E-11	1.74E-06	1.71E-05	0.000197445
172	0	8.68E-15	4.58E-13	5.04E-12	1.01E-06	1.15E-05	0.000156769
190	0	7.87E-15	1.77E-14	2.45E-13	5.60E-07	7.92E-06	0.000121905
210	0	0	0	3.62E-14	2.98E-07	5.28E-06	9.30E-05
232	0	1.39E-15	3.75E-15	3.67E-14	1.51E-07	3.34E-06	7.39E-05
256	1.40E-15	2.11E-15	2.78E-15	8.71E-15	7.30E-08	1.98E-06	5.82E-05
282	1.13E-16	2.67E-16	4.19E-16	2.49E-15	3.39E-08	1.14E-06	4.37E-05
300	2.03E-16	2.86E-16	3.63E-16	1.03E-15	2.04E-08	7.79E-07	3.74E-05
312	0	1.52E-17	2.79E-17	1.58E-16	1.46E-08	6.08E-07	3.31E-05
344	0	0	0	8.76E-19	6.05E-09	3.17E-07	2.54E-05
380	0	0	0	2.27E-17	2.19E-09	1.55E-07	1.88E-05
420	0	1.38E-18	2.53E-18	2.11E-17	7.09E-10	7.06E-08	1.35E-05
464	1.58E-18	2.65E-18	3.61E-18	1.35E-17	2.08E-10	3.03E-08	9.40E-06
512	0	0	0	7.50E-19	5.54E-11	1.22E-08	6.41E-06
565	0	0	0	0	1.30E-11	4.55E-09	4.13E-06
624	0	0	0	9.71E-18	2.65E-12	1.54E-09	2.57E-06
689	0	0	6.59E-18	3.62E-17	4.66E-13	4.87E-10	1.54E-06
761	0	0	1.78E-17	1.20E-16	6.94E-14	1.40E-10	8.85E-07
840	0	0	9.12E-17	4.80E-16	8.99E-15	3.63E-11	4.89E-07
928	0	2.18E-16	3.13E-16	7.98E-16	7.47E-15	7.51E-12	2.56E-07
1000	5.63E-17	2.57E-16	3.84E-16	9.83E-16	7.52E-15	1.01E-12	1.51E-07
1024	0	0	2.63E-19	2.71E-17	3.67E-15	6.79E-13	1.27E-07
1131	0	0	0	7.25E-18	1.60E-15	1.77E-13	5.72E-08
1249	7.42E-20	7.65E-17	2.23E-16	9.34E-16	6.21E-15	5.83E-14	2.43E-08
1379	1.19E-16	4.59E-16	6.31E-16	1.55E-15	7.95E-15	2.61E-14	1.04E-08
1523	0	0	0	2.25E-18	1.13E-17	3.99E-17	4.13E-09
1681	0	0	2.03E-19	2.68E-18	1.25E-17	4.16E-17	1.45E-09
1856	0	0	4.15E-19	1.78E-18	1.29E-17	3.00E-17	4.59E-10
2050	0	0	6.24E-19	4.30E-18	2.60E-17	5.64E-17	1.31E-10
2263	0	2.47E-19	8.78E-19	3.64E-18	1.99E-17	3.92E-17	3.32E-11
2499	0	0	0	6.89E-19	6.08E-18	1.36E-17	7.40E-12
2759	0	0	0	0	1.07E-18	3.75E-18	1.45E-12
3046	0	0	0	0	5.72E-19	1.92E-18	2.40E-13
3363	0	0	0	6.75E-20	1.33E-18	3.21E-18	3.30E-14
3714	0	0	0	8.46E-19	5.50E-18	1.16E-17	4.21E-15
4100	0	6.43E-19	9.09E-19	2.76E-18	1.50E-17	2.78E-17	4.40E-16
4527	0	3.10E-19	8.87E-19	3.53E-18	1.91E-17	3.44E-17	1.23E-16
4999	0	0	0	0	1.20E-18	3.23E-18	1.41E-17
5519	0	0	0	0	4.20E-18	9.04E-18	8.39E-17
6094	0	0	0	1.49E-18	2.68E-17	4.81E-17	2.36E-16
6728	0	0	0	2.66E-17	1.52E-16	2.75E-16	7.16E-16
7428	0	0	0	2.50E-17	2.78E-16	5.18E-16	1.98E-15
8202	0	5.10E-17	1.19E-16	3.62E-16	1.87E-15	3.16E-15	1.21E-14
9056	0	0	0	1.82E-16	1.06E-15	1.88E-15	6.74E-15
9999	4.57E-16	8.09E-16	1.12E-15	3.08E-15	1.40E-14	2.40E-14	6.42E-14
11039	0	0	4.75E-20	1.99E-15	1.28E-14	2.43E-14	6.52E-14
12189	0	1.36E-20	1.93E-18	1.78E-15	1.01E-14	1.71E-14	5.53E-14
13458	0	3.68E-20	2.16E-17	1.37E-15	7.75E-15	1.52E-14	4.11E-14
14859	5.44E-16	1.11E-15	1.40E-15	3.35E-15	1.67E-14	2.69E-14	6.85E-14
16406	0	2.85E-16	4.81E-16	1.56E-15	7.88E-15	1.44E-14	3.34E-14
18114	0	0	0	0	2.61E-18	6.71E-18	4.17E-17
20000	0	0	0	5.61E-19	1.82E-17	3.17E-17	1.20E-16

s3HRA1 GW	Species	RWQS (mg/l)					
	As	0.01					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	5.16E-21
10	0	0	0	0	0	0	5.91E-19
11	0	0	0	0	4.16E-21	1.50E-19	1.91E-17
13	0	0	0	0	4.49E-18	7.36E-17	4.30E-15
14	0	0	0	0	6.58E-17	9.09E-16	3.71E-14
16	0	0	0	2.11E-20	4.64E-15	4.51E-14	1.12E-12
17	0	0	0	2.71E-19	2.69E-14	2.10E-13	4.38E-12
19	0	0	0	1.90E-17	4.83E-13	2.96E-12	4.19E-11
21	0	0	0	5.66E-16	4.72E-12	2.48E-11	2.65E-10
23	0	0	0	8.85E-15	3.05E-11	1.32E-10	1.17E-09
26	0	0	0	2.60E-13	2.68E-10	9.80E-10	6.90E-09
28	0	0	0	1.50E-12	8.88E-10	2.88E-09	1.77E-08
30	0	0	1.25E-19	6.86E-12	2.44E-09	7.25E-09	3.76E-08
32	0	0	1.69E-19	2.52E-11	5.76E-09	1.60E-08	7.06E-08
35	0	4.63E-20	6.72E-19	1.32E-10	1.76E-08	4.24E-08	1.62E-07
39	0	5.40E-20	3.09E-18	7.42E-10	5.42E-08	1.22E-07	3.88E-07
43	0	1.78E-19	6.70E-17	3.13E-09	1.39E-07	2.80E-07	7.69E-07
47	0	4.13E-19	1.24E-15	1.00E-08	2.99E-07	5.36E-07	1.31E-06
52	0	7.53E-19	2.42E-14	3.15E-08	6.29E-07	1.05E-06	2.21E-06
57	0	5.27E-18	2.72E-13	7.97E-08	1.12E-06	1.78E-06	3.30E-06
64	0	2.42E-16	4.15E-12	2.28E-07	2.08E-06	3.11E-06	5.12E-06
70	0	3.73E-15	2.71E-11	4.53E-07	3.19E-06	4.46E-06	6.72E-06
78	0	7.20E-14	2.06E-10	9.26E-07	4.92E-06	6.52E-06	9.29E-06
86	0	8.23E-13	1.04E-09	1.61E-06	6.87E-06	8.50E-06	1.21E-05
95	0	7.86E-12	4.55E-09	2.66E-06	8.94E-06	1.08E-05	1.49E-05
100	2.82E-17	2.27E-11	9.22E-09	3.33E-06	9.96E-06	1.19E-05	1.63E-05
105	2.85E-17	5.73E-11	1.74E-08	4.09E-06	1.09E-05	1.31E-05	1.76E-05
116	4.35E-17	3.24E-10	5.66E-08	5.84E-06	1.30E-05	1.52E-05	1.99E-05
128	1.00E-16	1.49E-09	1.46E-07	7.69E-06	1.50E-05	1.74E-05	2.13E-05
141	2.31E-16	5.69E-09	3.52E-07	9.41E-06	1.70E-05	1.90E-05	2.39E-05
156	4.82E-15	1.97E-08	7.39E-07	1.10E-05	1.81E-05	2.07E-05	2.58E-05
172	7.22E-14	5.70E-08	1.39E-06	1.21E-05	1.93E-05	2.19E-05	2.78E-05
190	8.70E-13	1.53E-07	2.63E-06	1.30E-05	2.04E-05	2.31E-05	3.04E-05
210	8.20E-12	3.71E-07	4.31E-06	1.35E-05	2.14E-05	2.48E-05	3.17E-05
232	6.04E-11	8.01E-07	6.25E-06	1.36E-05	2.21E-05	2.63E-05	3.34E-05
256	3.53E-10	1.56E-06	6.75E-06	1.35E-05	2.30E-05	2.70E-05	3.55E-05
282	1.67E-09	2.74E-06	6.25E-06	1.32E-05	2.33E-05	2.78E-05	3.75E-05
300	4.11E-09	3.71E-06	5.74E-06	1.26E-05	2.36E-05	2.85E-05	3.86E-05
312	7.06E-09	3.60E-06	5.46E-06	1.23E-05	2.39E-05	2.91E-05	3.95E-05
344	2.43E-08	3.28E-06	4.40E-06	1.08E-05	2.41E-05	2.92E-05	4.39E-05
380	7.44E-08	2.42E-06	3.44E-06	9.48E-06	2.41E-05	2.99E-05	4.31E-05
420	2.00E-07	1.76E-06	2.59E-06	7.93E-06	2.44E-05	2.94E-05	4.54E-05
464	4.76E-07	1.20E-06	1.84E-06	6.28E-06	2.42E-05	2.97E-05	4.45E-05
512	3.68E-07	8.24E-07	1.29E-06	4.82E-06	2.37E-05	2.90E-05	4.39E-05
565	2.61E-07	5.60E-07	8.63E-07	3.64E-06	2.30E-05	2.87E-05	4.27E-05
624	1.48E-07	3.60E-07	5.58E-07	2.68E-06	2.18E-05	2.84E-05	4.09E-05
689	8.80E-08	2.13E-07	3.46E-07	1.90E-06	2.05E-05	2.80E-05	3.84E-05
761	4.57E-08	1.22E-07	2.02E-07	1.29E-06	1.91E-05	2.72E-05	3.83E-05
840	2.05E-08	6.26E-08	1.08E-07	8.62E-07	1.69E-05	2.63E-05	3.77E-05
928	9.01E-09	2.85E-08	5.34E-08	5.31E-07	1.54E-05	2.45E-05	3.66E-05
1000	4.05E-09	1.47E-08	2.96E-08	3.62E-07	1.37E-05	2.31E-05	3.59E-05
1024	3.12E-09	1.19E-08	2.43E-08	3.20E-07	1.31E-05	2.30E-05	3.55E-05
1131	7.97E-10	3.87E-09	8.97E-09	1.69E-07	1.13E-05	2.11E-05	3.25E-05
1249	2.10E-10	1.25E-09	3.06E-09	8.90E-08	9.44E-06	1.95E-05	3.07E-05
1379	5.49E-11	3.91E-10	9.67E-10	4.43E-08	7.65E-06	1.78E-05	2.89E-05
1523	1.43E-11	1.08E-10	3.01E-10	2.12E-08	6.17E-06	1.55E-05	2.87E-05
1681	3.22E-12	3.05E-11	8.91E-11	9.66E-09	4.89E-06	1.33E-05	2.72E-05
1856	4.94E-12	3.60E-11	9.56E-11	7.09E-09	3.79E-06	1.14E-05	2.70E-05
2050	8.57E-13	8.91E-12	2.51E-11	3.17E-09	2.91E-06	9.73E-06	2.51E-05
2263	7.62E-14	1.46E-12	5.32E-12	1.20E-09	2.17E-06	7.95E-06	2.52E-05
2499	1.20E-14	2.10E-13	9.69E-13	4.03E-10	1.48E-06	6.32E-06	2.31E-05
2759	1.43E-15	2.24E-14	1.24E-13	1.22E-10	1.04E-06	4.93E-06	2.16E-05
3046	6.36E-17	1.90E-15	1.52E-14	3.50E-11	7.24E-07	3.78E-06	2.29E-05
3363	0	1.71E-16	1.17E-15	8.31E-12	4.88E-07	2.84E-06	2.12E-05
3714	0	2.09E-17	1.10E-16	1.83E-12	3.20E-07	2.10E-06	1.97E-05
4100	0	0	5.84E-18	3.37E-13	2.04E-07	1.53E-06	1.72E-05
4527	0	1.07E-18	2.22E-18	5.82E-14	1.26E-07	1.11E-06	1.49E-05
4999	0	5.44E-19	1.67E-18	7.92E-15	7.15E-08	7.76E-07	1.28E-05
5519	0	5.04E-20	5.24E-19	9.03E-16	4.03E-08	5.41E-07	1.05E-05
6094	0	0	5.45E-19	8.62E-17	2.19E-08	3.61E-07	8.53E-06
6728	0	0	0	8.20E-18	1.13E-08	2.34E-07	6.91E-06
7428	0	0	1.20E-19	1.33E-17	5.31E-09	1.47E-07	5.68E-06
8202	0	0	0	8.82E-18	2.39E-09	8.73E-08	4.61E-06
9056	0	0	1.73E-18	4.31E-17	1.03E-09	5.00E-08	3.39E-06
9999	0	0	0	2.84E-17	4.11E-10	2.74E-08	2.52E-06
11039	0	0	0	2.78E-17	1.53E-10	1.43E-08	1.87E-06
12189	0	0	0	1.60E-17	5.08E-11	7.08E-09	1.36E-06
13458	0	0	0	3.17E-17	1.51E-11	3.30E-09	9.69E-07
14859	0	0	0	2.51E-17	4.16E-12	1.44E-09	6.73E-07
16406	0	4.37E-20	9.27E-18	2.30E-16	1.02E-12	5.88E-10	4.55E-07
18114	0	0	0	2.26E-19	2.21E-13	2.21E-10	2.99E-07
20000	0	0	0	4.15E-19	3.94E-14	7.72E-11	1.91E-07

s3HRA1 GW	Species	RWQS (mg/l)					
	Cl-	250					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	7.49E-10	1.80E-09	2.82E-07
2	1.52E-06	0.000231749	0.000344668	0.000650286	0.00109888	0.00130901	0.00163607
3	0.000143804	0.00562308	0.00870815	0.0163349	0.0287097	0.0327113	0.0412025
4	0.0025839	0.0269111	0.0310539	0.0562835	0.104049	0.12022	0.151969
5	0.0197779	0.0320913	0.0366132	0.0722581	0.171377	0.204173	0.280835
6	0.0201337	0.0261484	0.0293314	0.0609216	0.208024	0.265739	0.383659
7	0.0171023	0.0211354	0.0235824	0.0502958	0.213167	0.299559	0.471726
8	0.0149192	0.0177912	0.0199248	0.0422256	0.207449	0.3143	0.515496
9	0.0123611	0.0149588	0.0168073	0.0357689	0.194018	0.32	0.508088
10	0.0103237	0.0126112	0.0140554	0.029526	0.178376	0.30582	0.480184
11	0.00778207	0.00937084	0.0104965	0.0225948	0.161932	0.283635	0.473754
13	0.00606069	0.00727431	0.00803889	0.0170553	0.117272	0.234719	0.492016
14	0.00507628	0.00615373	0.00687426	0.0147114	0.10109	0.215776	0.489362
16	0.00386082	0.0046976	0.00527937	0.0111131	0.0752158	0.163459	0.502184
17	0.00299307	0.00361216	0.00407766	0.00886798	0.0647018	0.14461	0.491892
19	0.00203946	0.00245526	0.00279658	0.0060426	0.0431628	0.108044	0.429011
21	0.00151076	0.00181151	0.0020789	0.00447937	0.0309612	0.0809906	0.394713
23	0.00114956	0.00138878	0.00158852	0.00342625	0.0233753	0.0603175	0.374277
26	0.000806829	0.000969604	0.00111654	0.00240704	0.0153812	0.0388037	0.309812
28	0.00052116	0.000636455	0.00074096	0.00161109	0.0113509	0.0290734	0.286415
30	0.000309567	0.000383989	0.00044889	0.000979681	0.00788805	0.0212397	0.253421
32	0.000184485	0.00023015	0.000275015	0.000604918	0.00526535	0.0149311	0.210697
35	0.000108748	0.000136893	0.000166866	0.000370056	0.00283267	0.00859087	0.163073
39	6.90E-05	8.53E-05	0.000104372	0.000235764	0.00149094	0.00437825	0.119423
43	4.41E-05	5.56E-05	6.90E-05	0.000156657	0.000961784	0.00243997	0.087757
47	2.61E-05	3.40E-05	4.16E-05	9.61E-05	0.000585859	0.00140919	0.0649768
52	1.31E-05	1.75E-05	2.17E-05	5.17E-05	0.000306763	0.000704451	0.0444317
57	5.84E-06	7.99E-06	1.01E-05	2.45E-05	0.00015052	0.000351647	0.0296025
64	2.42E-06	3.34E-06	4.28E-06	1.07E-05	6.35E-05	0.000135141	0.0169642
70	1.03E-06	1.38E-06	1.79E-06	4.76E-06	2.91E-05	6.45E-05	0.010677
78	4.63E-07	6.37E-07	8.28E-07	2.30E-06	1.25E-05	2.72E-05	0.00585704
86	1.51E-07	2.12E-07	2.79E-07	8.31E-07	4.76E-06	1.03E-05	0.00327144
95	5.50E-08	7.79E-08	1.06E-07	3.22E-07	1.78E-06	3.88E-06	0.0017278
100	1.73E-08	2.45E-08	3.35E-08	1.09E-07	7.56E-07	1.77E-06	0.00122042
105	4.97E-09	7.02E-09	9.44E-09	2.90E-08	2.13E-07	6.61E-07	0.000865053
116	2.15E-09	3.09E-09	3.94E-09	1.10E-08	6.17E-08	1.43E-07	0.000411275
128	8.58E-10	1.31E-09	1.80E-09	5.05E-09	2.64E-08	5.45E-08	0.000186489
141	1.06E-10	2.48E-10	4.22E-10	1.63E-09	8.50E-09	1.86E-08	8.06E-05
156	0	4.78E-13	2.85E-12	2.81E-10	1.72E-09	3.98E-09	3.12E-05
172	2.63E-12	4.31E-12	5.78E-12	1.89E-11	1.58E-10	3.88E-10	1.15E-05
190	1.16E-12	2.47E-12	3.24E-12	9.06E-12	5.45E-11	1.08E-10	3.83E-06
210	0	7.90E-13	1.14E-12	4.45E-12	2.09E-11	4.53E-11	1.15E-06
232	3.43E-13	5.88E-13	7.54E-13	2.38E-12	1.11E-11	2.06E-11	3.09E-07
256	5.94E-14	1.00E-13	1.29E-13	4.80E-13	2.57E-12	5.35E-12	7.52E-08
282	1.94E-14	3.89E-14	5.07E-14	1.43E-13	7.52E-13	1.32E-12	1.65E-08
300	0	5.29E-15	8.65E-15	2.47E-14	1.38E-13	2.59E-13	5.82E-09
312	0	0	0	0	3.16E-15	1.50E-14	2.92E-09
344	0	0	0	5.01E-18	2.55E-15	8.60E-15	4.68E-10
380	0	0	1.27E-17	6.68E-16	4.79E-15	1.20E-14	6.08E-11
420	0	0	0	1.15E-16	2.40E-15	5.49E-15	6.30E-12
464	0	0	0	0	1.03E-15	2.35E-15	5.52E-13
512	0	0	1.39E-16	9.87E-16	5.58E-15	1.07E-14	7.43E-14
565	0	4.94E-16	8.11E-16	2.61E-15	1.35E-14	2.31E-14	1.18E-13
624	0	6.42E-16	1.16E-15	3.88E-15	1.80E-14	3.35E-14	9.20E-14
689	3.11E-15	5.46E-15	7.03E-15	1.73E-14	8.22E-14	1.41E-13	4.98E-13
761	0	0	0	9.35E-16	4.06E-14	8.78E-14	3.50E-13
840	0	0	0	1.09E-14	7.14E-14	1.29E-13	3.84E-13
928	0	0	0	0	3.59E-13	7.56E-13	2.93E-12
1000	0	0	0	1.22E-13	6.66E-13	1.29E-12	4.16E-12
1024	1.14E-13	1.62E-13	1.92E-13	4.23E-13	1.98E-12	3.16E-12	1.07E-11
1131	9.66E-14	1.32E-13	1.56E-13	3.32E-13	1.52E-12	2.60E-12	8.52E-12
1249	4.36E-14	6.91E-14	8.45E-14	1.82E-13	8.21E-13	1.51E-12	4.70E-12
1379	6.01E-15	1.46E-14	1.89E-14	4.55E-14	2.16E-13	3.99E-13	1.11E-12
1523	0	1.64E-16	2.21E-16	6.74E-16	3.21E-15	6.06E-15	1.87E-14
1681	2.98E-17	2.57E-16	3.80E-16	1.14E-15	6.17E-15	1.04E-14	3.59E-14
1856	3.67E-16	6.53E-16	8.61E-16	2.32E-15	1.08E-14	1.86E-14	5.82E-14
2050	2.24E-16	6.13E-16	7.94E-16	2.01E-15	9.80E-15	1.67E-14	4.94E-14
2263	3.42E-17	2.32E-16	3.21E-16	8.68E-16	4.40E-15	7.31E-15	2.14E-14
2499	0	3.43E-17	8.56E-17	3.00E-16	1.52E-15	2.76E-15	7.98E-15
2759	0	0	0	1.09E-16	7.34E-16	1.37E-15	4.27E-15
3046	0	0	0	4.22E-17	2.74E-16	4.93E-16	2.16E-15
3363	1.01E-17	3.93E-17	5.79E-17	2.33E-16	1.39E-15	2.36E-15	5.41E-15
3714	9.69E-17	1.44E-16	1.80E-16	4.54E-16	2.26E-15	3.96E-15	1.05E-14
4100	1.15E-16	2.05E-16	2.68E-16	6.59E-16	3.33E-15	6.57E-15	1.56E-14
4527	5.58E-17	1.84E-16	2.66E-16	7.75E-16	3.94E-15	7.85E-15	2.25E-14
4999	0	0	0	0	1.15E-15	1.96E-15	8.07E-15
5519	0	0	0	0	0	0	3.18E-15
6094	0	1.07E-16	7.87E-16	3.05E-15	1.63E-14	2.65E-14	9.62E-14
6728	1.27E-15	2.45E-15	3.35E-15	8.05E-15	3.72E-14	6.15E-14	2.23E-13
7428	0	2.46E-15	4.56E-15	1.41E-14	6.48E-14	1.15E-13	3.63E-13
8202	0	0	9.10E-15	3.26E-14	1.53E-13	2.64E-13	8.85E-13
9056	0	0	6.82E-15	4.63E-14	2.36E-13	4.22E-13	1.04E-12
9999	0	0	0	1.92E-13	1.08E-12	1.84E-12	5.33E-12
11039	2.07E-13	2.78E-13	3.29E-13	7.67E-13	3.71E-12	6.71E-12	1.62E-11
12189	2.39E-13	3.27E-13	3.81E-13	8.48E-13	4.13E-12	7.25E-12	1.91E-11
13458	1.34E-13	1.94E-13	2.31E-13	5.44E-13	2.57E-12	4.68E-12	1.11E-11
14859	3.82E-14	7.61E-14	9.24E-14	2.28E-13	1.06E-12	1.98E-12	5.28E-12
16406	0	7.88E-15	1.39E-14	4.38E-14	1.98E-13	3.81E-13	9.11E-13
18114	0	0	0	0	3.02E-16	9.71E-16	4.63E-15
20000	0	0	0	0	1.99E-15	4.35E-15	1.27E-14

s3HRA1 GW	Species	RWQS (mg/l)					
	Cu	2					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0
86	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0
100	0	0	0	0	0	0	2.70E-20
105	0	0	0	0	0	0	2.71E-20
116	0	0	0	0	0	0	3.43E-20
128	0	0	0	0	0	0	3.48E-20
141	0	0	0	0	0	0	3.52E-20
156	0	0	0	0	0	0	2.22E-19
172	0	0	0	0	0	0	3.71E-19
190	0	0	0	0	0	0	8.52E-19
210	0	0	0	0	0	0	2.64E-17
232	0	0	0	0	0	0	5.75E-16
256	0	0	0	0	0	1.32E-20	8.90E-15
282	0	0	0	0	0	2.84E-20	1.01E-13
300	0	0	0	0	0	3.86E-20	4.20E-13
312	0	0	0	0	0	4.71E-20	9.89E-13
344	0	0	0	0	0	7.03E-20	7.14E-12
380	0	0	0	0	0	1.35E-18	4.19E-11
420	0	0	0	0	1.00E-20	3.59E-17	1.91E-10
464	0	0	0	0	5.75E-20	6.88E-16	7.22E-10
512	0	0	0	0	1.07E-18	9.43E-15	2.28E-09
565	0	0	0	0	3.01E-17	9.84E-14	6.23E-09
624	0	0	0	0	6.25E-16	8.13E-13	1.50E-08
689	0	0	0	0	9.20E-15	5.31E-12	3.19E-08
761	0	0	0	0	1.01E-13	2.78E-11	5.93E-08
840	0	0	0	0	8.03E-13	1.22E-10	1.05E-07
928	0	0	0	0	5.67E-12	4.51E-10	1.67E-07
1000	0	0	0	0	1.99E-11	1.08E-09	2.25E-07
1024	0	0	0	1.01E-20	2.90E-11	1.40E-09	2.48E-07
1131	0	0	0	3.31E-19	1.31E-10	3.70E-09	3.63E-07
1249	0	0	0	5.99E-18	4.92E-10	8.93E-09	4.39E-07
1379	0	0	0	1.34E-16	1.50E-09	1.74E-08	5.93E-07
1523	0	0	0	2.15E-15	3.75E-09	3.23E-08	7.12E-07
1681	0	0	0	2.38E-14	8.70E-09	6.00E-08	8.38E-07
1856	0	0	0	2.16E-13	1.88E-08	9.39E-08	9.05E-07
2050	0	0	0	1.58E-12	3.72E-08	1.37E-07	8.78E-07
2263	0	0	0	8.64E-12	6.58E-08	2.03E-07	8.71E-07
2499	0	0	7.90E-20	3.92E-11	9.98E-08	3.10E-07	8.24E-07
2759	0	0	4.89E-19	1.50E-10	1.51E-07	3.81E-07	8.88E-07
3046	0	0	1.26E-17	5.08E-10	2.00E-07	4.52E-07	8.82E-07
3363	0	5.20E-20	2.37E-16	1.43E-09	2.62E-07	5.03E-07	1.06E-06
3714	0	3.52E-19	3.16E-15	3.63E-09	3.00E-07	5.07E-07	1.21E-06
4100	0	1.03E-17	3.66E-14	8.12E-09	3.56E-07	5.15E-07	1.36E-06
4527	0	2.15E-16	2.96E-13	1.62E-08	3.88E-07	5.34E-07	1.23E-06
4999	0	2.99E-15	1.63E-12	2.82E-08	3.81E-07	5.30E-07	1.21E-06
5519	0	2.15E-14	9.33E-12	4.70E-08	3.80E-07	5.38E-07	1.29E-06
6094	0	1.77E-13	3.78E-11	6.96E-08	3.59E-07	5.53E-07	1.30E-06
6728	0	1.04E-12	1.19E-10	9.37E-08	3.67E-07	5.24E-07	1.21E-06
7428	0	3.15E-12	3.86E-10	1.11E-07	3.64E-07	4.88E-07	1.14E-06
8202	0	1.48E-11	1.16E-09	1.24E-07	3.49E-07	4.83E-07	1.20E-06
9056	0	2.05E-11	2.16E-09	1.33E-07	3.41E-07	4.81E-07	1.09E-06
9999	0	5.93E-11	4.68E-09	1.37E-07	3.32E-07	4.71E-07	9.54E-07
11039	0	1.85E-10	7.10E-09	1.35E-07	3.24E-07	4.46E-07	9.86E-07
12189	0	2.07E-10	8.93E-09	1.29E-07	3.00E-07	4.24E-07	9.14E-07
13458	0	2.83E-10	8.81E-09	1.19E-07	2.83E-07	4.05E-07	9.96E-07
14859	0	2.46E-10	8.83E-09	1.14E-07	2.67E-07	3.64E-07	9.02E-07
16406	0	2.00E-10	6.35E-09	1.03E-07	2.53E-07	3.40E-07	9.33E-07
18114	0	6.62E-11	5.02E-09	9.52E-08	2.42E-07	3.25E-07	8.26E-07
20000	0	3.23E-11	3.86E-09	8.14E-08	2.21E-07	3.04E-07	7.21E-07

s3HRA1 GW	Species	RWQS (mg/l)					
	Hg	0.001					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0
86	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0
128	0	0	0	0	0	0	0
141	0	0	0	0	0	0	6.66E-21
156	0	0	0	0	0	0	2.23E-19
172	0	0	0	0	7.69E-21	8.23E-20	4.71E-18
190	0	0	0	0	2.22E-19	1.96E-18	6.89E-17
210	0	0	0	0	4.54E-18	3.32E-17	7.75E-16
232	0	0	0	0	6.71E-17	4.21E-16	6.79E-15
256	0	0	0	1.69E-20	7.53E-16	3.95E-15	4.69E-14
282	0	0	0	3.91E-19	6.70E-15	3.03E-14	2.60E-13
300	0	0	0	2.51E-18	2.42E-14	1.00E-13	7.27E-13
312	0	0	0	8.03E-18	5.22E-14	2.04E-13	1.37E-12
344	0	0	0	1.10E-16	3.08E-13	1.01E-12	5.86E-12
380	0	0	0	1.27E-15	1.56E-12	4.49E-12	2.20E-11
420	0	0	0	1.11E-14	6.79E-12	1.69E-11	7.23E-11
464	0	0	0	8.29E-14	2.43E-11	5.50E-11	2.05E-10
512	0	0	0	4.82E-13	7.51E-11	1.53E-10	5.00E-10
565	0	0	0	2.33E-12	2.02E-10	3.68E-10	1.08E-09
624	0	0	5.59E-20	9.56E-12	4.87E-10	8.12E-10	2.04E-09
689	0	0	1.45E-18	3.31E-11	1.02E-09	1.61E-09	3.75E-09
761	0	0	2.77E-17	9.93E-11	1.92E-09	2.90E-09	5.99E-09
840	0	0	3.87E-16	2.55E-10	3.26E-09	4.73E-09	8.73E-09
928	0	3.53E-19	4.24E-15	5.80E-10	5.27E-09	7.36E-09	1.20E-08
1000	0	3.97E-18	2.18E-14	1.02E-09	6.96E-09	9.50E-09	1.43E-08
1024	0	8.08E-18	3.57E-14	1.21E-09	7.70E-09	1.01E-08	1.53E-08
1131	0	1.35E-16	2.49E-13	2.20E-09	1.08E-08	1.33E-08	1.91E-08
1249	0	1.69E-15	1.42E-12	3.67E-09	1.32E-08	1.65E-08	2.49E-08
1379	0	1.60E-14	6.83E-12	5.52E-09	1.55E-08	1.86E-08	3.15E-08
1523	0	1.20E-13	2.80E-11	7.58E-09	1.71E-08	2.14E-08	4.22E-08
1681	0	7.13E-13	9.87E-11	9.50E-09	1.90E-08	2.41E-08	5.54E-08
1856	0	3.48E-12	2.31E-10	1.07E-08	2.06E-08	2.75E-08	6.97E-08
2050	0	1.26E-11	5.50E-10	1.12E-08	2.18E-08	3.46E-08	9.03E-08
2263	0	3.68E-11	1.12E-09	1.13E-08	2.31E-08	4.27E-08	1.39E-07
2499	0	9.83E-11	2.16E-09	1.12E-08	2.39E-08	5.18E-08	2.44E-07
2759	0	2.73E-10	3.36E-09	1.08E-08	2.51E-08	6.26E-08	3.39E-07
3046	0	5.58E-10	3.11E-09	1.01E-08	2.56E-08	9.12E-08	5.18E-07
3363	0	9.87E-10	2.65E-09	9.29E-09	2.65E-08	1.59E-07	7.98E-07
3714	0	1.16E-09	2.18E-09	8.32E-09	2.40E-08	2.42E-07	1.07E-06
4100	0	8.53E-10	1.62E-09	7.14E-09	2.32E-08	3.68E-07	1.32E-06
4527	0	6.44E-10	1.16E-09	5.83E-09	2.25E-08	5.04E-07	1.63E-06
4999	0	4.29E-10	7.94E-10	4.71E-09	2.10E-08	7.11E-07	1.97E-06
5519	0	2.00E-10	5.03E-10	3.71E-09	1.93E-08	9.60E-07	2.17E-06
6094	0	8.97E-11	2.87E-10	2.80E-09	1.73E-08	1.17E-06	2.43E-06
6728	0	0	1.66E-10	2.08E-09	1.55E-08	1.21E-06	2.62E-06
7428	0	0	8.09E-11	1.50E-09	1.36E-08	1.24E-06	3.13E-06
8202	0	0	3.74E-11	1.05E-09	1.13E-08	1.43E-06	3.55E-06
9056	0	0	1.48E-11	6.84E-10	9.76E-09	1.49E-06	4.06E-06
9999	0	0	3.54E-12	4.31E-10	8.27E-09	1.51E-06	4.37E-06
11039	0	0	0	2.57E-10	6.79E-09	1.53E-06	4.65E-06
12189	0	0	0	1.37E-10	5.51E-09	1.53E-06	4.88E-06
13458	0	0	0	7.40E-11	4.40E-09	1.53E-06	5.17E-06
14859	0	0	0	4.08E-11	3.42E-09	1.53E-06	6.03E-06
16406	0	0	0	2.18E-11	2.43E-09	1.53E-06	6.49E-06
18114	0	0	0	1.06E-11	1.84E-09	1.44E-06	6.58E-06
20000	0	0	0	5.21E-12	1.32E-09	1.44E-06	6.64E-06

s3HRA1 GW	Species	RWQS (mg/l)					
	Ni	0.02					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	3.74E-18
14	0	0	0	0	0	0	5.44E-17
16	0	0	0	0	0	0	4.04E-15
17	0	0	0	0	0	6.28E-20	2.34E-14
19	0	0	0	0	0	4.40E-18	4.20E-13
21	0	0	0	0	1.23E-19	1.28E-16	3.92E-12
23	0	0	0	0	2.95E-18	2.24E-15	2.41E-11
26	0	0	0	0	1.92E-16	6.80E-14	2.09E-10
28	0	0	0	0	2.08E-15	4.04E-13	6.71E-10
30	0	0	0	0	1.40E-14	1.86E-12	1.81E-09
32	0	0	0	0	7.27E-14	6.94E-12	4.49E-09
35	0	0	0	0	6.08E-13	3.67E-11	1.34E-08
39	0	0	0	5.29E-20	5.41E-12	2.16E-10	4.02E-08
43	0	0	0	1.64E-18	3.47E-11	9.14E-10	9.51E-08
47	0	0	0	3.38E-17	1.61E-10	3.35E-09	1.90E-07
52	0	0	0	7.91E-16	7.57E-10	1.22E-08	3.83E-07
57	0	0	0	1.03E-14	2.60E-09	3.34E-08	6.61E-07
64	0	0	0	1.80E-13	1.05E-08	1.05E-07	1.18E-06
70	0	0	0	1.28E-12	2.57E-08	2.02E-07	1.70E-06
78	0	0	0	1.15E-11	6.61E-08	4.42E-07	2.44E-06
86	0	0	1.28E-19	6.35E-11	1.46E-07	8.03E-07	3.19E-06
95	0	0	4.58E-18	3.11E-10	2.92E-07	1.35E-06	4.10E-06
100	0	2.35E-19	4.01E-17	6.48E-10	4.06E-07	1.60E-06	4.47E-06
105	0	3.55E-19	1.36E-16	1.24E-09	5.41E-07	1.87E-06	4.63E-06
116	0	1.40E-18	2.60E-15	4.33E-09	9.01E-07	2.68E-06	5.52E-06
128	0	3.64E-18	3.66E-14	1.29E-08	1.35E-06	3.34E-06	6.42E-06
141	0	7.66E-18	3.77E-13	3.33E-08	1.86E-06	3.89E-06	6.74E-06
156	5.52E-19	3.84E-17	3.34E-12	7.93E-08	2.36E-06	4.09E-06	7.41E-06
172	6.70E-19	6.97E-16	2.19E-11	1.60E-07	2.86E-06	4.23E-06	7.81E-06
190	7.76E-19	1.12E-14	1.21E-10	3.01E-07	3.21E-06	4.40E-06	7.92E-06
210	1.46E-18	1.37E-13	5.56E-10	5.15E-07	3.47E-06	4.74E-06	7.53E-06
232	1.60E-18	1.27E-12	2.23E-09	8.10E-07	3.59E-06	4.76E-06	7.63E-06
256	3.49E-18	9.05E-12	7.16E-09	1.10E-06	3.76E-06	4.66E-06	7.41E-06
282	3.74E-17	5.05E-11	2.10E-08	1.39E-06	3.70E-06	4.80E-06	7.19E-06
300	2.53E-16	1.37E-10	3.96E-08	1.50E-06	3.79E-06	4.75E-06	7.12E-06
312	8.19E-16	2.57E-10	5.66E-08	1.57E-06	3.73E-06	4.83E-06	7.22E-06
344	1.26E-14	1.11E-09	1.18E-07	1.65E-06	3.57E-06	4.83E-06	7.26E-06
380	1.53E-13	3.60E-09	1.99E-07	1.64E-06	3.46E-06	4.65E-06	7.64E-06
420	1.45E-12	1.16E-08	2.83E-07	1.62E-06	3.35E-06	4.40E-06	7.68E-06
464	1.06E-11	2.54E-08	2.59E-07	1.60E-06	3.21E-06	4.21E-06	7.08E-06
512	6.07E-11	3.49E-08	2.66E-07	1.50E-06	3.04E-06	4.09E-06	7.00E-06
565	2.86E-10	4.43E-08	2.12E-07	1.37E-06	2.88E-06	4.09E-06	6.87E-06
624	1.01E-09	5.54E-08	1.56E-07	1.21E-06	2.76E-06	3.81E-06	6.64E-06
689	5.74E-10	4.55E-08	1.21E-07	9.90E-07	2.77E-06	3.66E-06	6.57E-06
761	4.13E-10	2.73E-08	8.28E-08	8.23E-07	2.65E-06	3.61E-06	6.40E-06
840	4.98E-10	1.37E-08	5.07E-08	6.73E-07	2.52E-06	3.43E-06	5.96E-06
928	2.71E-10	6.73E-09	2.83E-08	5.24E-07	2.37E-06	3.26E-06	5.65E-06
1000	1.41E-10	3.86E-09	1.70E-08	4.21E-07	2.29E-06	3.08E-06	5.41E-06
1024	1.06E-10	3.15E-09	1.46E-08	3.93E-07	2.29E-06	2.98E-06	5.38E-06
1131	3.99E-11	1.37E-09	7.58E-09	3.01E-07	2.22E-06	2.86E-06	5.15E-06
1249	1.07E-11	6.22E-10	3.77E-09	2.20E-07	2.08E-06	2.75E-06	4.63E-06
1379	2.84E-12	2.25E-10	1.64E-09	1.54E-07	1.97E-06	2.75E-06	4.53E-06
1523	6.78E-13	8.86E-11	7.32E-10	1.07E-07	1.85E-06	2.62E-06	4.44E-06
1681	1.44E-13	2.61E-11	2.94E-10	7.38E-08	1.67E-06	2.48E-06	4.46E-06
1856	2.49E-14	7.03E-12	1.05E-10	4.91E-08	1.51E-06	2.41E-06	4.43E-06
2050	3.21E-15	1.80E-12	3.01E-11	3.33E-08	1.35E-06	2.24E-06	4.29E-06
2263	4.98E-16	4.10E-13	9.25E-12	2.12E-08	1.17E-06	2.23E-06	4.06E-06
2499	5.20E-17	8.03E-14	2.57E-12	1.21E-08	1.02E-06	2.06E-06	3.77E-06
2759	4.22E-18	1.30E-14	5.67E-13	7.12E-09	8.69E-07	1.81E-06	3.43E-06
3046	1.63E-19	1.58E-15	1.11E-13	3.91E-09	7.44E-07	1.76E-06	3.07E-06
3363	1.76E-19	1.83E-16	2.00E-14	2.11E-09	6.16E-07	1.64E-06	2.84E-06
3714	2.12E-19	1.73E-17	3.10E-15	1.08E-09	5.02E-07	1.55E-06	2.73E-06
4100	6.62E-20	1.53E-18	4.10E-16	5.08E-10	3.98E-07	1.37E-06	2.57E-06
4527	5.09E-20	4.89E-19	4.45E-17	2.27E-10	3.08E-07	1.19E-06	2.41E-06
4999	0	1.31E-19	4.12E-18	9.65E-11	2.30E-07	1.06E-06	2.49E-06
5519	0	4.69E-20	5.22E-19	3.78E-11	1.68E-07	8.67E-07	2.42E-06
6094	1.47E-20	2.03E-19	4.71E-19	1.40E-11	1.20E-07	7.12E-07	2.16E-06
6728	0	9.22E-20	3.73E-19	4.56E-12	8.68E-08	5.65E-07	1.98E-06
7428	0	1.05E-19	9.14E-19	1.31E-12	5.78E-08	4.40E-07	1.65E-06
8202	0	0	0	3.38E-13	3.75E-08	3.37E-07	1.34E-06
9056	0	2.07E-18	4.63E-18	8.00E-14	2.40E-08	2.54E-07	1.12E-06
9999	0	0	0	1.61E-14	1.52E-08	1.87E-07	9.14E-07
11039	0	0	9.37E-20	2.37E-15	9.40E-09	1.35E-07	7.39E-07
12189	0	0	0	3.94E-16	5.52E-09	9.55E-08	5.98E-07
13458	0	0	0	1.25E-16	3.09E-09	6.58E-08	5.00E-07
14859	0	0	0	9.41E-17	1.56E-09	4.41E-08	4.12E-07
16406	0	8.61E-18	4.21E-17	2.38E-16	8.02E-10	2.98E-08	3.35E-07
18114	0	0	1.60E-20	2.49E-18	3.92E-10	1.97E-08	2.68E-07
20000	0	0	0	9.33E-19	1.81E-10	1.20E-08	2.11E-07

s3HRA1 GW	Species	RWQS (mg/l)					
	SO4	250					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	8.05E-09	1.95E-08	2.83E-06
2	1.03E-05	0.00240934	0.00329741	0.00603988	0.0102508	0.0120959	0.0149589
3	0.00119806	0.0656435	0.0861165	0.156115	0.260745	0.309052	0.396392
4	0.0207095	0.268566	0.303193	0.53696	0.937967	1.1148	1.43578
5	0.138045	0.334526	0.367667	0.698729	1.63241	1.93482	2.60242
6	0.234998	0.29614	0.330515	0.643428	2.10863	2.64673	3.68761
7	0.218916	0.263193	0.292405	0.583647	2.26148	3.01277	4.56528
8	0.205418	0.240933	0.266796	0.531092	2.33182	3.29998	4.95971
9	0.187062	0.219423	0.243821	0.485831	2.38121	3.38826	5.38174
10	0.168037	0.193693	0.218239	0.433852	2.23246	3.37353	5.58072
11	0.142694	0.16613	0.186433	0.372687	2.07964	3.44275	5.64845
13	0.12213	0.144406	0.161778	0.316525	1.76771	3.15977	5.60334
14	0.113029	0.133866	0.150604	0.292905	1.63564	3.02717	5.63291
16	0.0973081	0.114863	0.129301	0.249956	1.39806	2.70352	5.38333
17	0.0842176	0.100246	0.111607	0.219835	1.30093	2.5387	5.58103
19	0.0674534	0.0817871	0.0908148	0.177375	1.05258	2.12521	5.50187
21	0.0570565	0.0693527	0.0775781	0.151296	0.875635	1.75905	5.7029
23	0.050457	0.0606908	0.0672982	0.132506	0.738578	1.48475	5.57655
26	0.04104	0.0493122	0.0553348	0.108751	0.594904	1.18599	4.66595
28	0.0320609	0.0385988	0.0432946	0.0859476	0.497195	1.02789	4.25777
30	0.0241885	0.0290959	0.0328566	0.0651796	0.396964	0.866905	3.86058
32	0.0182656	0.0219367	0.0251363	0.0500439	0.312879	0.719543	3.46111
35	0.013732	0.0165979	0.0191792	0.0380234	0.225216	0.5215	2.93202
39	0.0106487	0.0129673	0.0149865	0.0299451	0.163539	0.35268	2.31898
43	0.00836392	0.0101786	0.0118487	0.023785	0.127077	0.255865	1.83058
47	0.00621754	0.00759208	0.00888817	0.017941	0.0956454	0.189308	1.45215
52	0.0041	0.0051579	0.00603669	0.0122967	0.0642849	0.126094	1.08714
57	0.00259377	0.0032781	0.00389067	0.00798085	0.0422544	0.083155	0.811034
64	0.00156786	0.00199296	0.00237463	0.0049791	0.0262618	0.0466221	0.532942
70	0.000944084	0.00123322	0.00146992	0.00311943	0.016972	0.0299833	0.373477
78	0.000605981	0.000809725	0.000958235	0.00207033	0.0105139	0.0186397	0.233493
86	0.000311275	0.000428516	0.000499617	0.00111596	0.00587447	0.010007	0.147462
95	0.000172625	0.000241564	0.000284654	0.000650068	0.00337464	0.0057014	0.0845679
100	8.59E-05	0.000122942	0.000145908	0.000347266	0.00196824	0.00342098	0.0614744
105	3.06E-05	4.44E-05	5.33E-05	0.000132889	0.000840918	0.00169519	0.0423153
116	1.01E-05	1.45E-05	1.79E-05	4.73E-05	0.000247404	0.000462229	0.0168935
128	4.23E-06	6.24E-06	7.78E-06	2.16E-05	0.000107841	0.000187445	0.00669305
141	1.90E-06	2.84E-06	3.64E-06	1.03E-05	5.21E-05	9.16E-05	0.00279788
156	9.93E-07	1.49E-06	1.94E-06	5.73E-06	2.90E-05	5.19E-05	0.0011163
172	4.74E-07	7.15E-07	9.82E-07	2.91E-06	1.50E-05	2.60E-05	0.000447366
190	1.62E-07	2.44E-07	3.39E-07	1.06E-06	5.52E-06	1.00E-05	0.00015991
210	3.72E-08	5.71E-08	8.10E-08	2.80E-07	1.47E-06	2.73E-06	4.89E-05
232	7.51E-09	1.19E-08	1.73E-08	6.54E-08	3.54E-07	6.64E-07	1.32E-05
256	9.46E-10	1.81E-09	2.67E-09	1.23E-08	6.88E-08	1.31E-07	3.12E-06
282	4.80E-11	1.64E-10	2.67E-10	1.80E-09	1.19E-08	2.36E-08	6.51E-07
300	0	0	1.61E-11	2.03E-10	1.50E-09	3.32E-09	2.16E-07
312	0	0	0	2.23E-11	1.92E-10	4.18E-10	1.03E-07
344	0	0	0	3.61E-12	4.57E-11	1.04E-10	1.51E-08
380	0	0	2.38E-13	1.15E-12	9.08E-12	1.85E-11	1.75E-09
420	0	8.35E-15	3.38E-14	3.80E-13	2.81E-12	5.52E-12	1.84E-10
464	1.16E-15	1.87E-14	3.62E-14	1.55E-13	8.70E-13	1.70E-12	1.83E-11
512	0	9.48E-16	1.04E-14	6.09E-14	2.99E-13	5.16E-13	4.84E-12
565	0	0	0	3.10E-14	1.95E-13	3.50E-13	1.96E-12
624	0	0	3.46E-15	3.49E-14	1.50E-13	2.77E-13	1.04E-12
689	0	2.22E-14	3.90E-14	1.09E-13	5.48E-13	9.91E-13	2.56E-12
761	0	0	0	8.69E-14	6.60E-13	1.31E-12	4.57E-12
840	0	0	0	0	5.11E-13	8.91E-13	3.95E-12
928	0	0	0	1.04E-13	3.48E-12	7.31E-12	2.68E-11
1000	0	0	0	6.65E-13	4.74E-12	9.36E-12	2.48E-11
1024	4.62E-13	1.06E-12	1.33E-12	3.18E-12	1.43E-11	3.06E-11	8.18E-11
1131	8.28E-13	1.09E-12	1.27E-12	2.79E-12	1.46E-11	2.61E-11	8.23E-11
1249	4.64E-13	6.11E-13	7.46E-13	1.62E-12	8.44E-12	1.52E-11	3.71E-11
1379	3.47E-14	1.15E-13	1.52E-13	3.72E-13	1.75E-12	3.05E-12	7.21E-12
1523	0	4.07E-16	1.33E-15	1.14E-14	7.50E-14	1.28E-13	3.72E-13
1681	0	1.90E-16	2.76E-15	1.47E-14	9.59E-14	1.82E-13	5.18E-13
1856	1.28E-15	5.77E-15	8.56E-15	2.53E-14	1.44E-13	2.65E-13	7.35E-13
2050	0	4.75E-15	8.39E-15	2.49E-14	1.29E-13	2.42E-13	7.64E-13
2263	0	0	0	6.50E-15	3.64E-14	7.38E-14	2.43E-13
2499	0	0	0	0	1.43E-15	4.47E-15	1.70E-14
2759	0	0	0	4.16E-16	3.55E-15	7.33E-15	2.07E-14
3046	0	0	0	3.00E-16	3.25E-15	6.12E-15	2.51E-14
3363	2.19E-16	7.17E-16	9.98E-16	2.89E-15	1.56E-14	2.58E-14	6.30E-14
3714	1.68E-15	2.67E-15	3.20E-15	7.12E-15	3.65E-14	6.46E-14	1.33E-13
4100	3.15E-15	4.20E-15	5.09E-15	1.09E-14	5.21E-14	9.93E-14	2.07E-13
4527	2.80E-15	4.60E-15	5.68E-15	1.27E-14	6.14E-14	1.12E-13	2.56E-13
4999	0	0	0	1.80E-15	1.77E-14	3.20E-14	1.32E-13
5519	0	0	0	0	0	0	6.74E-14
6094	0	0	0	1.40E-14	9.24E-14	1.72E-13	5.50E-13
6728	0	1.18E-14	1.87E-14	6.05E-14	2.99E-13	5.41E-13	1.46E-12
7428	0	0	2.21E-14	1.13E-13	5.61E-13	9.97E-13	2.46E-12
8202	0	1.14E-14	9.63E-14	3.44E-13	1.86E-12	3.29E-12	8.00E-12
9056	0	0	0	4.91E-13	2.81E-12	5.61E-12	1.24E-11
9999	0	0	2.49E-13	2.27E-12	1.12E-11	2.13E-11	5.96E-11
11039	2.14E-12	2.95E-12	3.46E-12	7.23E-12	3.58E-11	6.10E-11	1.69E-10
12189	2.18E-12	2.95E-12	3.59E-12	7.62E-12	3.74E-11	6.39E-11	1.68E-10
13458	8.11E-13	1.37E-12	1.78E-12	4.57E-12	2.26E-11	3.84E-11	1.22E-10
14859	1.32E-13	4.03E-13	6.02E-13	1.96E-12	9.57E-12	1.62E-11	5.20E-11
16406	0	3.59E-14	8.96E-14	3.62E-13	1.86E-12	3.17E-12	9.85E-12
18114	0	0	0	0	0	2.85E-15	3.54E-14
20000	0	0	0	0	8.52E-15	1.66E-14	6.84E-14

s3HRA1 GW	Species	RWQS (mg/l)					
	Zn	5					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	1.43E-19
7	0	0	0	0	0	0	1.67E-17
8	0	0	0	0	0	6.52E-21	3.10E-13
9	0	0	0	0	0	2.35E-20	3.33E-11
10	0	0	0	0	0	5.25E-19	5.21E-10
11	0	0	0	0	6.57E-21	5.93E-17	4.27E-09
13	0	0	0	0	3.93E-18	2.85E-14	8.94E-08
14	0	0	0	0	9.92E-17	2.61E-13	2.50E-07
16	0	0	0	0	9.75E-15	9.24E-12	1.17E-06
17	0	0	0	0	7.88E-14	3.83E-11	2.09E-06
19	0	0	0	0	1.55E-12	3.89E-10	5.10E-06
21	0	0	0	0	1.97E-11	2.31E-09	9.84E-06
23	0	0	0	2.61E-20	1.31E-10	1.01E-08	1.65E-05
26	0	0	0	1.64E-18	1.21E-09	5.50E-08	3.36E-05
28	0	0	0	1.79E-17	3.93E-09	1.35E-07	4.11E-05
30	0	0	0	1.74E-16	1.01E-08	2.74E-07	4.61E-05
32	0	0	0	1.48E-15	2.25E-08	5.01E-07	4.94E-05
35	0	0	0	2.00E-14	6.55E-08	1.09E-06	5.21E-05
39	0	0	0	3.80E-13	2.17E-07	2.36E-06	7.47E-05
43	0	0	0	4.07E-12	5.09E-07	4.98E-06	6.76E-05
47	0	0	5.40E-20	2.83E-11	1.10E-06	8.49E-06	6.82E-05
52	0	0	1.90E-19	2.09E-10	2.16E-06	1.23E-05	6.91E-05
57	0	0	5.55E-19	1.05E-09	3.86E-06	1.63E-05	7.16E-05
64	0	0	3.93E-17	5.96E-09	7.24E-06	2.48E-05	7.17E-05
70	0	5.20E-20	8.53E-16	1.91E-08	1.07E-05	2.73E-05	7.31E-05
78	0	1.02E-19	2.09E-14	6.65E-08	1.65E-05	3.31E-05	8.41E-05
86	0	1.01E-18	2.88E-13	1.83E-07	2.04E-05	3.69E-05	0.000103322
95	0	3.75E-17	2.89E-12	4.63E-07	2.46E-05	4.12E-05	0.000112354
100	7.96E-19	2.49E-16	9.69E-12	6.84E-07	2.63E-05	4.27E-05	0.000108332
105	8.64E-19	1.11E-15	2.74E-11	9.85E-07	2.80E-05	4.34E-05	0.000103635
116	8.84E-19	2.16E-14	1.64E-10	1.88E-06	2.92E-05	4.46E-05	9.81E-05
128	9.68E-19	2.64E-13	7.58E-10	3.14E-06	3.14E-05	4.53E-05	0.000101792
141	4.30E-18	2.79E-12	3.51E-09	4.83E-06	3.25E-05	4.62E-05	0.000100863
156	2.01E-17	2.54E-11	1.46E-08	6.84E-06	3.30E-05	4.71E-05	8.74E-05
172	2.04E-17	1.71E-10	3.52E-08	8.43E-06	3.32E-05	4.61E-05	9.20E-05
190	2.15E-17	9.80E-10	1.04E-07	9.88E-06	3.18E-05	4.54E-05	9.05E-05
210	2.37E-17	4.35E-09	2.29E-07	1.03E-05	2.94E-05	4.55E-05	0.000101069
232	9.64E-17	1.13E-08	3.19E-07	1.06E-05	2.84E-05	4.29E-05	0.000108308
256	1.78E-15	3.51E-08	5.83E-07	1.01E-05	2.73E-05	3.98E-05	0.00010838
282	3.01E-14	4.10E-08	8.22E-07	9.84E-06	2.68E-05	3.69E-05	0.000101867
300	1.56E-13	4.88E-08	9.15E-07	9.49E-06	2.64E-05	3.49E-05	9.49E-05
312	4.19E-13	7.20E-08	8.75E-07	9.39E-06	2.56E-05	3.46E-05	8.96E-05
344	1.99E-12	1.14E-07	8.79E-07	8.69E-06	2.32E-05	3.34E-05	8.39E-05
380	9.43E-13	7.35E-08	6.93E-07	7.78E-06	2.18E-05	3.15E-05	8.53E-05
420	1.03E-12	6.44E-08	4.80E-07	6.65E-06	2.02E-05	3.00E-05	8.29E-05
464	4.31E-12	6.05E-08	2.73E-07	5.52E-06	1.88E-05	2.91E-05	8.16E-05
512	1.46E-12	2.76E-08	1.82E-07	4.75E-06	1.71E-05	2.68E-05	6.46E-05
565	5.66E-13	1.24E-08	8.85E-08	3.78E-06	1.62E-05	2.42E-05	6.03E-05
624	2.03E-13	4.31E-09	4.37E-08	2.90E-06	1.52E-05	2.22E-05	5.35E-05
689	4.68E-14	2.02E-09	2.00E-08	2.24E-06	1.43E-05	2.03E-05	4.92E-05
761	4.58E-15	6.32E-10	8.93E-09	1.70E-06	1.37E-05	1.89E-05	4.24E-05
840	2.91E-16	1.96E-10	3.45E-09	1.24E-06	1.29E-05	1.72E-05	3.56E-05
928	6.37E-16	6.00E-11	1.37E-09	8.88E-07	1.17E-05	1.69E-05	3.26E-05
1000	4.13E-16	1.91E-11	5.15E-10	6.83E-07	1.05E-05	1.65E-05	3.06E-05
1024	3.09E-16	1.18E-11	3.53E-10	6.17E-07	1.03E-05	1.64E-05	3.05E-05
1131	3.60E-16	3.74E-12	9.70E-11	4.08E-07	9.49E-06	1.53E-05	2.98E-05
1249	2.05E-16	9.69E-13	2.65E-11	2.69E-07	8.74E-06	1.40E-05	2.84E-05
1379	4.10E-16	2.11E-13	6.23E-12	1.72E-07	7.85E-06	1.26E-05	2.49E-05
1523	0	1.28E-14	1.09E-12	1.07E-07	6.79E-06	1.13E-05	2.30E-05
1681	0	2.42E-15	1.98E-13	6.53E-08	5.79E-06	1.10E-05	2.16E-05
1856	2.87E-18	1.02E-15	3.26E-14	3.86E-08	4.54E-06	1.06E-05	1.98E-05
2050	8.49E-20	1.67E-16	5.02E-15	2.14E-08	3.94E-06	9.40E-06	1.78E-05
2263	0	1.27E-17	7.23E-16	1.09E-08	3.27E-06	8.34E-06	1.77E-05
2499	0	7.12E-18	1.62E-16	5.38E-09	2.60E-06	7.32E-06	1.48E-05
2759	0	1.32E-18	1.61E-17	2.54E-09	2.07E-06	6.24E-06	1.41E-05
3046	0	5.65E-19	1.88E-18	1.07E-09	1.60E-06	5.49E-06	1.33E-05
3363	0	3.70E-19	1.69E-18	4.20E-10	1.19E-06	4.61E-06	1.20E-05
3714	0	4.72E-19	1.82E-18	1.55E-10	8.60E-07	3.72E-06	1.11E-05
4100	0	9.71E-19	1.87E-18	5.12E-11	6.41E-07	2.94E-06	1.05E-05
4527	0	9.14E-19	1.43E-18	1.56E-11	4.68E-07	2.28E-06	9.83E-06
4999	0	0	3.01E-19	4.23E-12	2.97E-07	1.75E-06	9.65E-06
5519	0	0	1.04E-19	1.03E-12	1.81E-07	1.32E-06	8.72E-06
6094	0	5.32E-19	1.29E-18	2.27E-13	1.12E-07	9.71E-07	7.91E-06
6728	0	0	0	4.15E-14	6.82E-08	7.01E-07	6.90E-06
7428	0	0	3.54E-19	6.95E-15	3.99E-08	5.01E-07	5.93E-06
8202	0	0	0	1.07E-15	2.29E-08	3.52E-07	5.02E-06
9056	0	0	7.69E-18	2.83E-16	1.20E-08	2.40E-07	4.19E-06
9999	0	0	0	3.32E-16	6.08E-09	1.60E-07	3.45E-06
11039	0	0	0	2.91E-16	2.98E-09	1.03E-07	2.80E-06
12189	0	0	0	2.40E-16	1.36E-09	6.02E-08	2.25E-06
13458	0	0	0	3.16E-16	5.75E-10	3.55E-08	1.78E-06
14859	0	0	1.33E-20	5.11E-16	2.25E-10	1.93E-08	1.39E-06
16406	0	1.11E-16	3.29E-16	1.44E-15	8.11E-11	1.10E-08	1.07E-06
18114	0	0	5.22E-20	2.87E-18	2.91E-11	5.82E-09	8.05E-07
20000	0	0	0	3.49E-18	9.64E-12	2.88E-09	5.96E-07

s4HRA1 GW	Species	RWQS (mg/l)					
	NH3-	0.5					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	1.57834E-18
4	0	0	0	0	1.18175E-19	2.10873E-18	7.6197E-16
5	0	0	0	0	1.60169E-17	3.74104E-16	1.94408E-13
6	5.75133E-19	3.46842E-18	1.14796E-17	1.47815E-16	3.43334E-15	1.00355E-13	3.4053E-11
7	7.81808E-19	3.89972E-18	1.22751E-17	1.66973E-16	1.75401E-12	3.93818E-11	2.76536E-09
8	9.81856E-19	4.47196E-18	1.32737E-17	1.4483E-14	7.35561E-09	3.98325E-08	3.49018E-07
9	1.17917E-18	5.18191E-18	1.47229E-17	3.63367E-11	3.91424E-07	1.6331E-06	8.14413E-06
10	1.55416E-18	6.77899E-18	9.75531E-17	3.31532E-09	3.99862E-06	0.000012238	3.93175E-05
11	1.90995E-18	5.78975E-17	3.46678E-14	5.37786E-08	1.72677E-05	3.97744E-05	0.000104133
13	1.033E-15	5.27123E-13	4.55164E-11	1.42777E-06	8.25002E-05	0.000164181	0.00029994
14	4.25212E-14	9.87046E-12	5.08731E-10	3.80865E-06	0.000137188	0.000245429	0.000398189
16	7.07353E-12	5.99662E-10	1.49498E-08	1.61637E-05	0.000266653	0.000402008	0.000608109
17	4.62355E-11	2.79876E-09	5.08966E-08	2.69561E-05	0.000331774	0.000475579	0.000698417
19	8.38431E-10	3.00604E-08	3.31993E-07	5.83981E-05	0.0004563	0.000608948	0.000877106
21	7.81882E-09	1.71164E-07	1.29279E-06	0.000100446	0.000567996	0.00070269	0.00101093
23	4.30117E-08	6.06703E-07	3.48582E-06	0.000148528	0.000643447	0.000803322	0.00109101
26	2.90149E-07	2.43056E-06	1.05098E-05	0.000229698	0.000721294	0.000892713	0.00114213
28	7.70088E-07	4.84681E-06	1.86993E-05	0.000274905	0.000756862	0.000911297	0.0011588
30	1.71667E-06	9.04509E-06	3.04811E-05	0.00032001	0.000786175	0.000940411	0.00116646
32	3.22082E-06	1.50509E-05	0.000044599	0.000358608	0.000792744	0.000958813	0.001142
35	6.95588E-06	2.69873E-05	7.10741E-05	0.000398113	0.000803762	0.000954412	0.00116657
39	1.55174E-05	5.27097E-05	0.000109883	0.000425094	0.000812735	0.000963403	0.00118833
43	2.96592E-05	8.39995E-05	0.000149577	0.000432951	0.000803082	0.000943671	0.0012389
47	4.80254E-05	0.000116073	0.000189035	0.000419101	0.000787128	0.000931034	0.00120797
52	7.52601E-05	0.000152043	0.000205486	0.000405249	0.000766906	0.00091015	0.00129178
57	9.94695E-05	0.000164631	0.000208188	0.000386568	0.00073665	0.000875462	0.00131494
64	9.64666E-05	0.000159899	0.000186804	0.000354247	0.000694226	0.000857748	0.00122347
70	8.51538E-05	0.000134321	0.000163226	0.000336451	0.00067283	0.000828219	0.00119563
78	6.52543E-05	0.000102758	0.000128093	0.000304099	0.000642369	0.000786782	0.00114048
86	4.56914E-05	8.15302E-05	0.00010217	0.000278561	0.000594879	0.000737614	0.00105999
95	3.10047E-05	0.000057311	7.62064E-05	0.000236777	0.000560455	0.00068073	0.00100241
100	2.54496E-05	4.81234E-05	6.58967E-05	0.000218516	0.000540772	0.000638476	0.000959198
105	2.11792E-05	4.14244E-05	5.68305E-05	0.000198737	0.000521572	0.000610885	0.000902129
116	1.39836E-05	2.79225E-05	4.21436E-05	0.00016331	0.000477488	0.000586062	0.000830277
128	8.90303E-06	1.84295E-05	2.99562E-05	0.000134517	0.000439193	0.000543334	0.000765592
141	5.44391E-06	1.20913E-05	2.13847E-05	0.000107351	0.000398621	0.00050181	0.000698164
156	3.10592E-06	7.76999E-06	1.43404E-05	8.32901E-05	0.000349136	0.000443985	0.000620941
172	1.73484E-06	4.8204E-06	9.42679E-06	6.42401E-05	0.000308176	0.000389197	0.00054906
190	9.31751E-07	2.82545E-06	5.98255E-06	4.87842E-05	0.000267735	0.000341344	0.000491524
210	5.02486E-07	1.60419E-06	3.63164E-06	3.54674E-05	0.000226318	0.000296528	0.000416592
232	2.46233E-07	8.52954E-07	2.11401E-06	2.53738E-05	0.000187225	0.000254697	0.000370942
256	1.17775E-07	4.39683E-07	1.2051E-06	1.82677E-05	0.00015252	0.000216206	0.000327788
282	5.00629E-08	2.2629E-07	6.57532E-07	1.25817E-05	0.000125065	0.000179034	0.000278943
300	2.79E-08	1.4477E-07	4.38994E-07	9.92197E-06	0.000109537	0.000159473	0.000252985
312	1.90E-08	1.06E-07	3.29764E-07	8.45258E-06	0.000100921	0.000147245	0.000234219
344	6.84E-09	4.79E-08	1.62E-07	5.65083E-06	7.98521E-05	0.000123145	0.000198318
380	2.21E-09	2.02E-08	7.07E-08	3.46E-06	6.31776E-05	9.91789E-05	0.00016713
420	6.38E-10	7.40E-09	3.03E-08	2.13E-06	4.88905E-05	7.95418E-05	0.000136324
464	1.72E-10	2.42E-09	1.21E-08	1.28E-06	3.67E-05	0.000062211	0.00011058
512	4.20E-11	7.28E-10	4.52E-09	7.47E-07	2.72E-05	4.75E-05	8.61694E-05
565	8.99E-12	1.96E-10	1.54E-09	4.12E-07	1.93E-05	3.51E-05	6.60E-05
624	1.64E-12	4.62E-11	4.60E-10	2.15E-07	1.36E-05	2.53E-05	4.95E-05
689	2.57E-13	1.03E-11	1.23E-10	1.04E-07	9.42E-06	1.84E-05	3.71E-05
761	3.42E-14	2.00E-12	2.88E-11	4.61E-08	6.29E-06	1.32E-05	2.84E-05
840	3.33E-15	3.12E-13	5.78E-12	1.95E-08	4.12E-06	9.42E-06	2.14E-05
928	8.86E-15	4.96E-14	9.96E-13	7.85E-09	2.57E-06	6.45E-06	1.57E-05
1000	7.25E-15	3.11E-14	2.60E-13	3.74E-09	1.77E-06	4.75E-06	1.23E-05
1024	2.81E-15	2.25E-14	1.92E-13	2.89E-09	1.56E-06	4.28E-06	1.12E-05
1131	1.64E-17	6.17E-15	4.63E-14	9.69E-10	8.93E-07	2.72E-06	7.60E-06
1249	3.51E-15	1.06E-14	2.32E-14	3.07E-10	4.87E-07	1.68E-06	5.00E-06
1379	7.47E-15	1.32E-14	1.98E-14	8.37E-11	2.61E-07	1.00E-06	3.19E-06
1523	0.00E+00	0.00E+00	0.00E+00	1.99E-11	1.36E-07	5.78E-07	1.96E-06
1681	0.00E+00	0.00E+00	0.00E+00	4.21E-12	6.62E-08	3.09E-07	1.17E-06
1856	0.00E+00	0.00E+00	0.00E+00	7.93E-13	3.16E-08	1.60E-07	6.67E-07
2050	0.00E+00	0.00E+00	1.72E-17	1.29E-13	1.25E-08	7.93E-08	3.63E-07
2263	0.00E+00	0.00E+00	0.00E+00	1.77E-14	4.66E-09	3.61E-08	1.88E-07
2499	0.00E+00	0.00E+00	0.00E+00	1.73E-15	1.75E-09	1.56E-08	9.23E-08
2759	0.00E+00	0.00E+00	0.00E+00	8.59E-17	6.00E-10	6.26E-09	4.34E-08
3046	0.00E+00	0.00E+00	0.00E+00	2.18E-17	1.85E-10	2.31E-09	1.89E-08
3363	0	0.00E+00	0.00E+00	3.12E-17	4.76E-11	7.79E-10	7.54E-09
3714	0	0	1.41264E-18	3.31E-17	1.10E-11	2.37E-10	2.98E-09
4100	0	4.69758E-18	1.11795E-17	4.63E-17	2.33E-12	6.50E-11	1.09E-09
4527	0	3.23129E-18	1.27135E-17	5.19217E-17	4.23E-13	1.58E-11	3.62E-10
4999	0	0	0	0	6.21E-14	3.34E-12	1.06E-10
5519	0	0	0	0	7.78E-15	6.15E-13	2.77E-11
6094	0	0	0	5.11677E-17	1.04988E-15	9.66E-14	6.26E-12
6728	0	0	0	3.63904E-16	1.62993E-15	1.4166E-14	1.19E-12
7428	0	0	0	5.35029E-16	3.64691E-15	6.55727E-15	1.99269E-13
8202	0	1.07414E-15	1.79595E-15	5.3808E-15	1.48893E-14	2.12421E-14	4.82564E-14
9056	0	0	0	1.86659E-15	8.3217E-15	1.12571E-14	2.04495E-14
9999	5.14885E-15	1.24879E-14	1.7059E-14	4.16694E-14	1.03735E-13	1.29986E-13	2.09622E-13
11039	0	0	0	2.48525E-14	1.14288E-13	1.72741E-13	4.69635E-13
12189	0	0	6.44465E-17	2.40826E-14	8.14173E-14	1.177E-13	1.92403E-13
13458	0	7.0972E-19	1.16599E-16	1.79528E-14	6.18486E-14	8.7887E-14	1.35071E-13
14859	5.57532E-15	1.81792E-14	2.20947E-14	4.71744E-14	1.23796E-13	1.55679E-13	2.41873E-13
16406	3.39776E-17	4.79925E-15	8.07305E-15	2.21411E-14	5.94032E-14	7.76402E-14	1.21814E-13
18114	0	0	0	5.31958E-18	1.01487E-16	1.74667E-16	4.21995E-16
20000	0	0	0	0	1.84177E-16	3.57471E-16	1.08833E-15

s4HRA1 GW	Species	RWQS (mg/l)					
	As	0.01					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
26	0	0	0	0	0	6.7388E-20	2.71828E-19
28	0	0	0	0	0	8.13935E-20	2.79302E-19
30	0	0	0	0	9.14787E-20	2.22877E-19	6.90271E-19
32	0	0	0	0	9.50875E-20	2.34302E-19	7.09078E-19
35	0	0	0	0	2.35929E-19	4.83267E-19	1.45176E-18
39	0	0	0	0	2.51459E-19	5.39307E-19	2.44876E-18
43	0	0	0	0	4.56972E-19	1.26028E-18	2.09225E-17
47	0	0	0	0	9.51704E-19	4.02373E-18	4.26384E-16
52	0	0	0	0	2.9934E-18	9.63308E-17	9.7813E-15
57	0	0	0	0	5.63863E-17	1.92395E-15	1.25461E-13
64	0	0	0	0	2.32193E-15	5.74071E-14	2.19665E-12
70	0	0	0	1.02859E-19	3.13523E-14	5.96343E-13	1.58093E-11
78	0	0	0	4.84795E-19	5.34872E-13	7.48784E-12	1.33223E-10
86	0	0	0	1.39171E-17	5.26518E-12	5.69457E-11	7.34286E-10
95	0	0	0	3.7029E-16	4.23691E-11	3.48022E-10	3.45665E-09
100	8.84642E-18	1.49497E-17	2.16917E-17	1.95491E-15	1.13517E-10	8.22898E-10	7.16937E-09
105	8.87475E-18	1.55207E-17	2.23337E-17	7.87258E-15	2.74954E-10	1.79259E-09	1.37821E-08
116	8.93735E-18	1.70167E-17	2.54965E-17	1.11148E-13	1.44434E-09	7.56642E-09	4.42343E-08
128	9.0055E-18	1.94238E-17	2.99442E-17	1.17967E-12	6.12416E-09	2.74405E-08	1.21496E-07
141	9.12882E-18	2.20171E-17	3.48485E-17	1.01365E-11	2.20479E-08	8.12196E-08	3.24094E-07
156	2.69635E-17	4.25289E-17	7.40931E-17	7.16052E-11	7.2472E-08	2.26426E-07	7.84599E-07
172	2.73913E-17	4.77488E-17	2.66049E-16	3.97065E-10	1.95055E-07	5.4142E-07	1.59144E-06
190	2.84452E-17	7.83965E-17	4.39607E-15	1.8949E-09	4.57519E-07	1.14131E-06	2.98626E-06
210	2.73832E-17	7.46919E-16	7.0479E-14	7.62784E-09	9.99799E-07	0.000002266	5.1673E-06
232	3.76012E-17	1.34253E-14	8.19726E-13	2.64563E-08	1.95251E-06	4.12431E-06	8.26421E-06
256	3.7071E-16	1.80674E-13	6.99906E-12	7.66838E-08	3.55755E-06	6.7908E-06	1.30739E-05
282	6.55269E-15	1.79537E-12	4.71279E-11	1.93745E-07	5.87548E-06	1.03185E-05	1.90337E-05
300	3.6172E-14	6.88989E-12	1.46512E-10	3.27974E-07	7.79349E-06	1.31949E-05	2.28722E-05
312	1.0089E-13	1.54194E-11	2.92899E-10	4.49339E-07	9.25321E-06	1.50555E-05	2.52491E-05
344	1.07914E-12	9.88103E-11	1.43073E-09	9.13046E-07	1.34971E-05	2.01692E-05	3.36329E-05
380	9.41207E-12	5.37E-10	6.08255E-09	1.73933E-06	0.000018512	2.56827E-05	4.19609E-05
420	6.59593E-11	2.44821E-09	2.22768E-08	3.09338E-06	0.000023775	3.16072E-05	4.72395E-05
464	3.71996E-10	9.38177E-09	6.61443E-08	5.02793E-06	2.87547E-05	3.74819E-05	5.30212E-05
512	1.70781E-09	3.0515E-08	1.73204E-07	7.56839E-06	3.41438E-05	4.22982E-05	5.82162E-05
565	6.64106E-09	8.69385E-08	3.95495E-07	1.06799E-05	3.84507E-05	4.67456E-05	6.13217E-05
624	2.24075E-08	2.20895E-07	8.50488E-07	1.42067E-05	4.19162E-05	5.00682E-05	6.24678E-05
689	6.56074E-08	4.95037E-07	1.65415E-06	1.80935E-05	4.45988E-05	0.000051238	6.21845E-05
761	1.69848E-07	1.00977E-06	2.83132E-06	2.14635E-05	4.59898E-05	5.14243E-05	6.27777E-05
840	3.90138E-07	1.86783E-06	4.49334E-06	0.00002444	4.53117E-05	5.22136E-05	6.56331E-05
928	8.13447E-07	3.0887E-06	6.84063E-06	2.64613E-05	4.49558E-05	5.08663E-05	6.32012E-05
1000	1.32299E-06	4.36503E-06	8.94733E-06	2.70474E-05	4.47554E-05	5.01256E-05	6.50302E-05
1024	1.51082E-06	4.85593E-06	9.67232E-06	2.69656E-05	4.43624E-05	4.98045E-05	6.53659E-05
1131	2.58074E-06	7.02139E-06	1.23268E-05	2.69179E-05	4.27005E-05	4.95635E-05	6.68812E-05
1249	4.28558E-06	1.00127E-05	1.55491E-05	2.69878E-05	4.19782E-05	4.82722E-05	6.67797E-05
1379	6.2447E-06	0.000012434	1.64519E-05	2.63106E-05	4.05638E-05	4.73311E-05	6.65563E-05
1523	8.21987E-06	1.33922E-05	0.000015798	2.51841E-05	0.000039717	4.67141E-05	6.48352E-05
1681	9.77561E-06	1.25142E-05	1.44308E-05	2.38349E-05	3.86453E-05	4.57983E-05	0.000063081
1856	8.51826E-06	0.000010942	1.29065E-05	2.26033E-05	3.85445E-05	4.48759E-05	5.88757E-05
2050	6.69939E-06	8.84138E-06	1.10579E-05	2.08011E-05	3.75311E-05	4.40524E-05	5.48131E-05
2263	5.04493E-06	6.96368E-06	9.14829E-06	1.91578E-05	3.64799E-05	4.26422E-05	5.30158E-05
2499	3.71992E-06	5.35557E-06	7.21409E-06	1.71442E-05	3.46838E-05	4.09306E-05	4.93185E-05
2759	2.68957E-06	4.02063E-06	5.76325E-06	1.49315E-05	3.30969E-05	3.87999E-05	4.70267E-05
3046	1.98869E-06	3.04423E-06	4.49754E-06	1.26875E-05	0.000031164	3.67341E-05	4.50981E-05
3363	1.39748E-06	2.24244E-06	3.48697E-06	1.06208E-05	2.90496E-05	3.45967E-05	4.13478E-05
3714	9.42994E-07	1.6097E-06	2.59879E-06	8.67631E-06	2.69229E-05	3.21735E-05	3.96916E-05
4100	6.19646E-07	1.10049E-06	1.87648E-06	6.93314E-06	2.45847E-05	0.000029264	3.63867E-05
4527	3.94503E-07	7.61514E-07	1.34611E-06	5.51417E-06	2.18714E-05	2.68814E-05	3.42804E-05
4999	2.47983E-07	4.88757E-07	9.3499E-07	4.3224E-06	1.93255E-05	2.39699E-05	3.08636E-05
5519	1.50917E-07	3.19733E-07	6.37727E-07	3.36294E-06	1.69273E-05	2.11292E-05	2.86045E-05
6094	8.83432E-08	2.04042E-07	4.2028E-07	2.54601E-06	1.43988E-05	1.85681E-05	2.50499E-05
6728	4.83783E-08	1.23849E-07	2.69426E-07	1.89189E-06	0.000012069	0.000016174	2.21431E-05
7428	2.49513E-08	7.03306E-08	1.64319E-07	1.40219E-06	1.00759E-05	1.38303E-05	1.92977E-05
8202	1.2203E-08	3.81626E-08	9.7683E-08	1.00099E-06	8.21766E-06	1.16216E-05	1.68943E-05
9056	5.82815E-09	1.97614E-08	5.53836E-08	6.84335E-07	0.000006574	9.61209E-06	1.46541E-05
9999	2.54947E-09	9.89362E-09	2.9446E-08	4.70735E-07	5.39876E-06	7.91853E-06	1.22651E-05
11039	1.03259E-09	4.64845E-09	1.48959E-08	3.13702E-07	4.27957E-06	6.39989E-06	1.01121E-05
12189	3.87818E-10	2.0312E-09	7.27885E-09	1.98643E-07	3.31261E-06	5.08809E-06	8.37244E-06
13458	1.31639E-10	8.20859E-10	3.23288E-09	1.21571E-07	2.45251E-06	3.98076E-06	0.000006753
14859	4.05693E-11	3.06988E-10	1.38357E-09	7.19883E-08	1.7997E-06	3.06128E-06	5.43124E-06
16406	1.14153E-11	1.05612E-10	5.40166E-10	4.20328E-08	1.30118E-06	2.31148E-06	4.25234E-06
18114	2.90178E-12	3.29697E-11	1.97798E-10	2.32503E-08	9.27878E-07	1.71153E-06	3.27274E-06
20000	6.4308E-13	9.2174E-12	6.65204E-11	1.19761E-08	6.44794E-07	1.26086E-06	2.51093E-06

s4HRA1 GW	Species	RWQS (mg/l)					
	Cl-	250					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	3.02502E-11	1.40829E-10	5.45369E-10
2	1.9407E-10	6.67464E-09	1.05011E-07	3.39593E-05	0.000300051	0.000464636	0.000806173
3	2.27529E-06	1.58339E-05	5.59086E-05	0.00148626	0.00843734	0.0130917	0.0232704
4	8.76996E-05	0.000455043	0.00133691	0.019326	0.0667785	0.0862311	0.131487
5	0.00112125	0.00479903	0.011538	0.0839925	0.203875	0.24623	0.329036
6	0.00749271	0.0227389	0.0470594	0.189605	0.358355	0.40751	0.521479
7	0.0272774	0.0628316	0.11053	0.285162	0.46814	0.520702	0.644106
8	0.0616751	0.129774	0.184483	0.348004	0.549242	0.62017	0.761413
9	0.108036	0.196526	0.232327	0.388942	0.610836	0.695466	0.849109
10	0.160644	0.227541	0.262713	0.407931	0.646723	0.73836	0.933722
11	0.186288	0.236072	0.268336	0.41406	0.675277	0.760878	0.994378
13	0.165277	0.206397	0.238005	0.396304	0.702087	0.816583	1.06738
14	0.146094	0.184364	0.213307	0.380392	0.708461	0.817099	1.04988
16	0.112339	0.146786	0.167945	0.328634	0.692993	0.817293	1.03416
17	0.09889	0.130037	0.149018	0.303064	0.675874	0.788379	1.00825
19	0.0727246	0.0981116	0.112067	0.254214	0.634509	0.746428	0.949529
21	0.053831	0.073737	0.0841543	0.206744	0.569427	0.700163	0.93861
23	0.039895	0.0548922	0.0631837	0.167563	0.516166	0.636294	0.832901
26	0.0256121	0.0358907	0.0423695	0.119365	0.434385	0.554933	0.729441
28	0.019319	0.0270361	0.0324122	0.0960666	0.384178	0.503782	0.652959
30	0.0140993	0.0198977	0.0242547	0.076238	0.337049	0.449245	0.601699
32	0.00995461	0.0140852	0.0173087	0.0602629	0.291984	0.401124	0.550352
35	0.00564014	0.00820944	0.0103265	0.0420867	0.245968	0.335601	0.459739
39	0.00290236	0.00417364	0.00552103	0.0261747	0.184507	0.262382	0.362701
43	0.00168446	0.0023483	0.00313935	0.0161905	0.140806	0.201377	0.287584
47	0.000974868	0.00136261	0.00185829	0.0102722	0.107324	0.156465	0.233534
52	0.000491673	0.000678609	0.000937365	0.00585773	0.0757872	0.114898	0.180852
57	0.000239809	0.000332504	0.000463057	0.00334125	0.0545503	0.0887497	0.1409
64	0.000088916	0.000128034	0.000175359	0.00155211	0.035046	0.0618154	0.101886
70	3.90673E-05	0.000057826	7.79355E-05	0.000809138	0.023899	0.0441698	0.0788182
78	1.44535E-05	2.10655E-05	2.98682E-05	0.000346013	0.0146998	0.0285545	0.0557439
86	4.8422E-06	7.52243E-06	1.06678E-05	0.000149573	0.00915135	0.0189014	0.0389775
95	1.66468E-06	2.52379E-06	3.75101E-06	5.95871E-05	0.00557735	0.0121387	0.0264192
100	7.67903E-07	1.22064E-06	1.78628E-06	3.52143E-05	0.0041909	0.00955201	0.0214018
105	3.03487E-07	5.00691E-07	7.42774E-07	2.09742E-05	0.00311896	0.00764587	0.0173979
116	7.00853E-08	1.11879E-07	1.66361E-07	6.79818E-06	0.00172999	0.00465696	0.0111507
128	2.40287E-08	3.71449E-08	5.36997E-08	2.08963E-06	0.000940898	0.00268341	0.00696652
141	5.07263E-09	9.5617E-09	1.52869E-08	5.99527E-07	0.00049564	0.00156202	0.00429953
156	7.81858E-11	8.24031E-10	2.00778E-09	1.48204E-07	0.000239275	0.000850077	0.00250056
172	8.56512E-11	1.27898E-10	2.20008E-10	3.18597E-08	0.000112438	0.000450691	0.00142473
190	4.18631E-11	7.26389E-11	9.41473E-11	5.57877E-09	4.79693E-05	0.000223335	0.00076611
210	4.63236E-12	1.42434E-11	2.4285E-11	9.97332E-10	0.000019497	9.81287E-05	0.000390827
232	5.69253E-12	8.49763E-12	1.22403E-11	1.5861E-10	7.27323E-06	4.06292E-05	0.000189233
256	1.39707E-12	1.91242E-12	2.43962E-12	2.86573E-11	2.48117E-06	1.59969E-05	0.000089885
282	4.30796E-13	6.64971E-13	9.07157E-13	5.80597E-12	8.00647E-07	5.78444E-06	4.16821E-05
300	3.0552E-14	1.2917E-13	1.75564E-13	1.08877E-12	3.69775E-07	2.88218E-06	2.46648E-05
312	0	0	0	1.73786E-13	2.20621E-07	1.81697E-06	1.74352E-05
344	0	0	0	2.35027E-14	5.62349E-08	5.37741E-07	6.98289E-06
380	0	0	9.9734E-16	2.89976E-14	1.2334E-08	1.46261E-07	2.53178E-06
420	0	0	0	9.3879E-15	2.32512E-09	3.72938E-08	8.32597E-07
464	0	0	0	3.51155E-15	3.69136E-10	8.42319E-09	2.48427E-07
512	0	0	2.76439E-15	1.61779E-14	5.11282E-11	1.68697E-09	6.58291E-08
565	0	5.21065E-15	1.06509E-14	3.52558E-14	5.92086E-12	2.90126E-10	1.54192E-08
624	0	5.79058E-15	1.40322E-14	4.76287E-14	6.74727E-13	4.14772E-11	3.11127E-09
689	5.22361E-14	8.50059E-14	1.07339E-13	2.3223E-13	7.48953E-13	5.13441E-12	5.42114E-10
761	0	0	0	1.41653E-13	6.61444E-13	1.48915E-12	8.0263E-11
840	0	0	0	3.70637E-14	5.04203E-13	7.94511E-13	8.82708E-12
928	0	0	0	4.10693E-13	3.32015E-12	4.82911E-12	7.77325E-12
1000	0	0	3.63434E-14	1.7922E-12	5.8488E-12	7.83454E-12	1.59596E-11
1024	1.49694E-12	2.36886E-12	2.95324E-12	5.64219E-12	1.28007E-11	1.66082E-11	2.28288E-11
1131	1.56713E-12	2.14762E-12	2.4521E-12	4.67082E-12	1.1511E-11	1.38968E-11	1.97368E-11
1249	8.35752E-13	1.09719E-12	1.31612E-12	2.6226E-12	6.31833E-12	7.82182E-12	1.13692E-11
1379	7.91377E-14	2.36668E-13	2.99265E-13	6.5967E-13	1.5997E-12	1.9872E-12	3.03427E-12
1523	0	0	2.33016E-15	1.18769E-14	3.78457E-14	5.26701E-14	1.42547E-13
1681	0	4.02295E-15	6.54938E-15	1.95608E-14	6.43709E-14	9.06365E-14	1.50487E-13
1856	5.37331E-15	1.02814E-14	1.36745E-14	3.34127E-14	9.31274E-14	1.2106E-13	2.09318E-13
2050	0	9.00078E-15	1.1536E-14	2.83474E-14	7.81903E-14	1.04647E-13	1.51896E-13
2263	0	2.50683E-15	4.23767E-15	1.27138E-14	3.31559E-14	4.82678E-14	6.78883E-14
2499	0	0	8.54426E-16	3.96802E-15	1.16353E-14	1.67922E-14	2.81913E-14
2759	0	0	0	1.77486E-15	6.79199E-15	8.95552E-15	1.66249E-14
3046	0	0	0	6.30454E-16	2.49624E-15	3.9865E-15	8.79283E-15
3363	0	4.12994E-16	8.00548E-16	3.04921E-15	1.17434E-14	1.58605E-14	2.99649E-14
3714	1.05701E-15	2.06796E-15	2.68929E-15	6.47632E-15	1.65592E-14	2.31715E-14	3.25842E-14
4100	1.95727E-15	3.33694E-15	4.08934E-15	9.54338E-15	2.42982E-14	3.2174E-14	5.25224E-14
4527	1.079055E-15	2.92105E-15	4.05147E-15	1.06084E-14	3.20101E-14	4.53157E-14	8.04175E-14
4999	0	0	0	0	1.18454E-14	1.91335E-14	4.17613E-14
5519	0	0	0	0	0	0	3.31068E-14
6094	0	0	8.52543E-15	4.24792E-14	1.1855E-13	1.6115E-13	2.69186E-13
6728	1.86871E-14	3.60818E-14	4.87159E-14	1.12135E-13	2.71066E-13	3.66718E-13	5.25942E-13
7428	0	2.6338E-14	5.90692E-14	1.93388E-13	5.03875E-13	6.56358E-13	1.00233E-12
8202	0	0	1.17571E-13	4.64787E-13	1.23517E-12	1.70527E-12	2.40735E-12
9056	0	0	5.87055E-14	6.27824E-13	1.90393E-12	2.55383E-12	4.86789E-12
9999	0	0	0	2.80422E-12	8.80661E-12	1.16768E-11	1.79842E-11
11039	2.97497E-12	4.4729E-12	5.44451E-12	1.09212E-11	2.56917E-11	3.48278E-11	4.99699E-11
12189	3.65967E-12	5.3658E-12	6.22188E-12	1.20422E-11	2.78883E-11	3.70857E-11	4.96652E-11
13458	2.1053E-12	2.9925E-12	3.67235E-12	7.63604E-12	1.84267E-11	2.30129E-11	3.57635E-11
14859	4.49976E-13	1.083E-12	1.38756E-12	3.27305E-12	7.99214E-12	1.00856E-11	1.61598E-11
16406	1.53866E-15	1.18427E-13	2.07972E-13	6.10111E-13	1.57441E-12	1.99227E-12	3.17302E-12
18114	0	0	0	0	3.39454E-15	9.55467E-15	4.17739E-14
20000	0	0	0	3.7614E-16	1.46206E-14	2.46886E-14	6.32186E-14

s4HRA1 GW	Species	RWQS (mg/l)					
	Cu	2					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0
86	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0
128	0	0	0	0	0	0	0
141	0	0	0	0	0	0	0
156	0	0	0	0	0	0	0
172	0	0	0	0	0	0	0
190	0	0	0	0	0	0	0
210	0	0	0	0	0	0	0
232	0	0	0	0	0	0	0
256	0	0	0	0	0	0	0
282	0	0	0	0	0	0	0
300	0	0	0	0	0	0	0
312	0	0	0	0	0	0	0
344	0	0	0	0	0	0	0
380	0	0	0	0	0	0	0
420	0	0	0	0	0	0	0
464	0	0	0	0	0	0	0
512	0	0	0	0	0	0	0
565	0	0	0	0	0	0	0
624	0	0	0	0	0	0	1.32E-18
689	0	0	0	0	0	0	4.45E-17
761	0	0	0	0	0	0	1.07E-15
840	0	0	0	0	0	0	1.78E-14
928	0	0	0	0	0	0	2.27E-13
1000	0	0	0	0	0	5.11E-19	1.28E-12
1024	0	0	0	0	0	5.73E-19	2.15E-12
1131	0	0	0	0	0	9.61E-19	1.64E-11
1249	0	0	0	0	0	1.59E-18	9.31E-11
1379	0	0	0	0	1.15E-19	1.04E-17	3.56E-10
1523	0	0	0	0	3.79E-19	2.55E-16	1.17E-09
1681	0	0	0	0	5.68E-19	4.45E-15	4.47E-09
1856	0	0	0	0	1.03E-18	5.62E-14	1.46E-08
2050	0	0	0	0	9.75E-18	4.10E-13	4.11E-08
2263	0	0	0	0	2.18E-16	3.21E-12	1.01E-07
2499	0	0	0	0	3.73E-15	2.09E-11	2.21E-07
2759	0	0	0	0	4.73E-14	1.09E-10	4.31E-07
3046	0	0	0	0	4.58E-13	4.75E-10	7.58E-07
3363	0	0	0	0	3.47E-12	1.73E-09	1.04E-06
3714	0	0	0	0	2.11E-11	5.42E-09	1.51E-06
4100	0	0	0	0	1.04E-10	1.51E-08	1.87E-06
4527	0	0	0	0	4.32E-10	3.54E-08	2.44E-06
4999	0	0	0	0	1.51E-09	8.63E-08	3.37E-06
5519	0	0	0	0	4.98E-09	1.49E-07	4.00E-06
6094	0	0	0	9.91E-20	1.32E-08	2.65E-07	4.19E-06
6728	0	0	0	2.80E-18	3.03E-08	4.00E-07	4.31E-06
7428	0	0	0	6.24E-17	6.74E-08	5.83E-07	4.18E-06
8202	0	0	0	9.86E-16	1.22E-07	8.60E-07	4.27E-06
9056	0	0	0	1.19E-14	2.18E-07	1.04E-06	4.27E-06
9999	0	0	0	1.10E-13	3.14E-07	1.26E-06	4.19E-06
11039	0	3.21E-19	6.51E-19	8.06E-13	4.27E-07	1.36E-06	4.08E-06
12189	0	4.18E-19	7.92E-19	4.67E-12	5.67E-07	1.61E-06	4.00E-06
13458	0	5.45E-19	1.40E-18	2.19E-11	7.19E-07	1.62E-06	3.56E-06
14859	0	6.23E-19	1.57E-17	8.75E-11	8.62E-07	1.61E-06	3.30E-06
16406	0	2.73E-19	2.62E-16	2.99E-10	9.19E-07	1.50E-06	3.04E-06
18114	0	4.29E-18	3.29E-15	8.19E-10	8.94E-07	1.46E-06	2.89E-06
20000	0	7.87E-17	3.26E-14	2.16E-09	8.58E-07	1.41E-06	2.82E-06

s4HRA1 GW	Species	RWQS (mg/l)					
	Hg	0.001					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0
86	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0
128	0	0	0	0	0	0	0
141	0	0	0	0	0	0	0
156	0	0	0	0	0	0	0
172	0	0	0	0	0	0	0
190	0	0	0	0	0	0	0
210	0	0	0	0	0	0	0
232	0	0	0	0	0	0	0
256	0	0	0	0	0	0	0
282	0	0	0	0	0	0	0
300	0	0	0	0	0	0	0
312	0	0	0	0	0	0	0
344	0	0	0	0	0	0	0
380	0	0	0	0	0	0	0
420	0	0	0	0	0	0	0
464	0	0	0	0	0	0	0
512	0	0	0	0	0	0	0
565	0	0	0	0	0	0	0
624	0	0	0	0	0	0	0
689	0	0	0	0	0	0	7.03E-20
761	0	0	0	0	0	0	1.82E-18
840	0	0	0	0	0	5.49E-19	3.40E-17
928	0	0	0	0	7.01E-19	1.26E-17	4.82E-16
1000	0	0	0	0	7.20E-18	1.07E-16	2.92E-15
1024	0	0	0	0	1.44E-17	2.03E-16	5.02E-15
1131	0	0	0	0	2.16E-16	2.50E-15	4.15E-14
1249	0	0	0	0	2.47E-15	2.29E-14	2.70E-13
1379	0	0	0	2.26E-19	2.21E-14	1.64E-13	1.42E-12
1523	0	0	0	4.16E-18	1.55E-13	9.28E-13	7.02E-12
1681	0	0	0	6.56E-17	8.80E-13	4.18E-12	2.96E-11
1856	0	0	0	8.52E-16	4.14E-12	1.61E-11	9.54E-11
2050	0	0	0	8.26E-15	1.61E-11	5.76E-11	2.59E-10
2263	0	0	0	6.13E-14	5.32E-11	1.65E-10	6.77E-10
2499	0	0	0	3.71E-13	1.51E-10	4.34E-10	1.64E-09
2759	0	0	1.40E-18	1.76E-12	3.79E-10	9.38E-10	3.52E-09
3046	0	0	2.56E-17	7.32E-12	8.74E-10	1.88E-09	6.55E-09
3363	0	3.60E-18	3.37E-16	2.48E-11	1.69E-09	3.40E-09	1.11E-08
3714	0	5.61E-17	3.20E-15	7.27E-11	2.99E-09	5.56E-09	1.70E-08
4100	8.36E-19	6.62E-16	2.84E-14	1.93E-10	4.74E-09	8.53E-09	2.44E-08
4527	1.56E-17	6.99E-15	1.79E-13	4.23E-10	7.06E-09	1.22E-08	3.21E-08
4999	2.17E-16	4.86E-14	9.19E-13	8.58E-10	9.59E-09	1.63E-08	4.50E-08
5519	2.15E-15	2.82E-13	3.83E-12	1.56E-09	1.34E-08	2.02E-08	6.41E-08
6094	1.63E-14	1.47E-12	1.43E-11	2.66E-09	1.65E-08	2.48E-08	9.86E-08
6728	9.88E-14	5.71E-12	4.23E-11	4.01E-09	1.92E-08	2.78E-08	1.46E-07
7428	4.88E-13	1.93E-11	1.13E-10	5.60E-09	2.19E-08	3.34E-08	2.13E-07
8202	2.01E-12	5.86E-11	2.64E-10	7.40E-09	2.42E-08	4.52E-08	2.91E-07
9056	7.02E-12	1.47E-10	5.36E-10	9.35E-09	2.60E-08	5.16E-08	3.86E-07
9999	2.12E-11	3.36E-10	9.77E-10	1.14E-08	2.79E-08	6.71E-08	4.92E-07
11039	5.82E-11	6.14E-10	1.72E-09	1.28E-08	3.01E-08	7.99E-08	6.10E-07
12189	1.42E-10	1.11E-09	2.70E-09	1.41E-08	3.23E-08	9.31E-08	7.39E-07
13458	3.08E-10	1.86E-09	3.91E-09	1.48E-08	3.36E-08	1.13E-07	8.33E-07
14859	6.06E-10	2.74E-09	5.37E-09	1.52E-08	3.29E-08	1.55E-07	9.80E-07
16406	1.08E-09	3.95E-09	6.97E-09	1.55E-08	3.38E-08	2.22E-07	1.14E-06
18114	1.73E-09	5.55E-09	8.37E-09	1.52E-08	3.49E-08	2.77E-07	1.30E-06
20000	2.62E-09	6.92E-09	9.01E-09	1.47E-08	3.45E-08	3.18E-07	1.48E-06

s4HRA1 GW	Species	RWQS (mg/l)					
	Ni	0.02					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0
35	0	0	0	0	0	0	1.75E-19
39	0	0	0	0	0	0	1.90E-19
43	0	0	0	0	0	0	4.36E-19
47	0	0	0	0	0	0	1.73E-18
52	0	0	0	0	0	0	4.09E-17
57	0	0	0	0	0	0	8.42E-16
64	0	0	0	0	0	0	2.57E-14
70	0	0	0	0	0	2.30E-19	2.74E-13
78	0	0	0	0	0	9.01E-18	3.54E-12
86	0	0	0	0	0	2.35E-16	2.76E-11
95	0	0	0	0	2.47E-18	4.69E-15	1.77E-10
100	0	0	0	1.71E-19	4.23E-17	1.94E-14	4.27E-10
105	0	0	0	1.80E-19	1.08E-16	6.98E-14	9.38E-10
116	0	0	0	2.37E-19	1.99E-15	7.83E-13	4.08E-09
128	0	0	0	3.49E-19	3.44E-14	6.73E-12	1.48E-08
141	0	0	0	5.33E-19	3.73E-13	4.53E-11	4.53E-08
156	0	0	0	3.05E-18	4.02E-12	2.74E-10	1.27E-07
172	0	0	1.02E-19	3.46E-18	2.92E-11	1.31E-09	2.94E-07
190	0	0	1.19E-19	4.60E-18	1.77E-10	5.45E-09	6.13E-07
210	0	0	3.55E-19	9.79E-18	9.05E-10	1.93E-08	1.15E-06
232	0	0	3.67E-19	1.46E-16	3.80E-09	5.89E-08	1.95E-06
256	0	0	3.34E-19	2.81E-15	1.32E-08	1.57E-07	3.16E-06
282	0	0	3.70E-19	3.56E-14	3.76E-08	3.57E-07	4.72E-06
300	0	0	3.10E-19	1.74E-13	6.97E-08	5.78E-07	5.86E-06
312	0	0	3.20E-19	4.62E-13	1.00E-07	7.38E-07	6.61E-06
344	0	0	3.82E-19	3.78E-12	2.27E-07	1.32E-06	8.47E-06
380	0	0	4.03E-19	2.48E-11	4.56E-07	2.33E-06	9.67E-06
420	0	0	6.58E-19	1.31E-10	8.76E-07	3.37E-06	1.12E-05
464	0	0	1.40E-17	5.81E-10	1.41E-06	4.98E-06	1.23E-05
512	0	2.64E-19	3.22E-16	2.10E-09	2.17E-06	6.35E-06	1.33E-05
565	0	5.72E-18	5.46E-15	6.55E-09	3.05E-06	7.57E-06	1.38E-05
624	0	1.55E-16	7.02E-14	1.77E-08	4.09E-06	8.80E-06	1.38E-05
689	2.45E-18	2.78E-15	6.83E-13	4.23E-08	5.10E-06	9.72E-06	1.36E-05
761	6.57E-17	4.10E-14	5.21E-12	9.40E-08	6.20E-06	9.83E-06	1.42E-05
840	1.24E-15	4.47E-13	3.13E-11	1.74E-07	7.01E-06	1.00E-05	1.39E-05
928	1.75E-14	3.26E-12	1.55E-10	3.02E-07	6.95E-06	9.76E-06	1.40E-05
1000	1.06E-13	1.39E-11	4.45E-10	4.36E-07	7.12E-06	9.71E-06	1.38E-05
1024	1.81E-13	2.14E-11	6.03E-10	4.83E-07	7.09E-06	9.81E-06	1.41E-05
1131	1.48E-12	1.06E-10	2.15E-09	6.99E-07	7.00E-06	9.15E-06	1.36E-05
1249	1.00E-11	4.18E-10	6.38E-09	9.90E-07	6.73E-06	8.76E-06	1.39E-05
1379	5.46E-11	1.41E-09	1.64E-08	1.27E-06	6.47E-06	8.58E-06	1.47E-05
1523	2.23E-10	4.21E-09	3.81E-08	1.58E-06	6.34E-06	8.22E-06	1.43E-05
1681	7.67E-10	1.11E-08	8.01E-08	1.91E-06	6.13E-06	7.73E-06	1.43E-05
1856	2.37E-09	2.74E-08	1.46E-07	2.14E-06	5.93E-06	7.54E-06	1.36E-05
2050	6.41E-09	5.72E-08	2.47E-07	2.29E-06	5.53E-06	7.25E-06	1.23E-05
2263	1.53E-08	1.06E-07	3.86E-07	2.41E-06	5.28E-06	6.78E-06	1.21E-05
2499	3.27E-08	1.79E-07	5.45E-07	2.44E-06	4.89E-06	6.37E-06	1.08E-05
2759	6.34E-08	2.91E-07	6.82E-07	2.38E-06	4.68E-06	6.04E-06	9.87E-06
3046	1.13E-07	3.94E-07	7.17E-07	2.28E-06	4.42E-06	5.57E-06	9.35E-06
3363	1.85E-07	4.44E-07	8.17E-07	2.22E-06	4.08E-06	5.23E-06	8.43E-06
3714	1.81E-07	5.02E-07	8.52E-07	2.10E-06	3.95E-06	4.88E-06	7.29E-06
4100	1.50E-07	4.99E-07	8.98E-07	2.01E-06	3.79E-06	4.53E-06	6.85E-06
4527	9.49E-08	4.09E-07	8.15E-07	1.89E-06	3.60E-06	4.25E-06	5.88E-06
4999	5.80E-08	3.53E-07	6.91E-07	1.74E-06	3.38E-06	4.10E-06	5.89E-06
5519	3.41E-08	2.55E-07	5.63E-07	1.60E-06	3.21E-06	3.73E-06	5.25E-06
6094	1.93E-08	1.71E-07	4.29E-07	1.46E-06	2.99E-06	3.50E-06	4.90E-06
6728	1.04E-08	1.11E-07	3.15E-07	1.31E-06	2.81E-06	3.40E-06	4.59E-06
7428	5.37E-09	7.25E-08	2.27E-07	1.14E-06	2.66E-06	3.19E-06	4.25E-06
8202	2.62E-09	4.47E-08	1.56E-07	9.52E-07	2.50E-06	2.97E-06	3.92E-06
9056	1.19E-09	2.64E-08	1.05E-07	7.90E-07	2.34E-06	2.78E-06	3.74E-06
9999	5.06E-10	1.56E-08	6.93E-08	6.47E-07	2.17E-06	2.57E-06	3.57E-06
11039	2.00E-10	8.38E-09	4.58E-08	5.25E-07	1.99E-06	2.37E-06	3.25E-06
12189	7.28E-11	4.28E-09	2.93E-08	4.18E-07	1.78E-06	2.20E-06	2.98E-06
13458	2.42E-11	2.07E-09	1.72E-08	3.23E-07	1.62E-06	1.97E-06	2.69E-06
14859	7.19E-12	9.44E-10	9.74E-09	2.46E-07	1.44E-06	1.86E-06	2.48E-06
16406	1.95E-12	4.25E-10	5.40E-09	1.84E-07	1.23E-06	1.60E-06	2.25E-06
18114	4.65E-13	1.78E-10	2.86E-09	1.33E-07	1.03E-06	1.42E-06	2.06E-06
20000	9.72E-14	6.90E-11	1.43E-09	9.64E-08	8.72E-07	1.25E-06	1.82E-06

s4HRA1 GW	Species	RWQS (mg/l)					
	SO4	250					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	2.97158E-10	1.39238E-09	5.0423E-09
2	1.9311E-09	6.60635E-08	9.56871E-07	0.000308558	0.00271942	0.00406465	0.00753448
3	2.43506E-05	0.000142529	0.00049736	0.013797	0.078837	0.118232	0.189671
4	0.000805186	0.00412987	0.0125601	0.18283	0.611325	0.778012	1.19436
5	0.0105418	0.0448781	0.108654	0.791093	1.91624	2.24624	3.11546
6	0.068311	0.230804	0.434904	1.81848	3.3163	3.8091	4.9566
7	0.247754	0.664075	1.08376	2.82109	4.53421	4.9956	6.52921
8	0.603998	1.34277	1.83552	3.62833	5.4031	5.96277	7.20001
9	1.13311	2.10258	2.58797	4.18277	6.21842	6.8845	8.20738
10	1.78862	2.66047	3.05644	4.56236	6.972	7.62433	9.3677
11	2.46484	2.9415	3.28092	4.78452	7.44328	8.40278	10.5342
13	2.47402	2.9136	3.23721	4.94509	8.09432	9.09886	11.4295
14	2.35586	2.77468	3.11128	4.95038	8.29519	9.28718	12.0079
16	2.07859	2.47436	2.77792	4.78054	8.46908	9.67023	12.5589
17	1.94373	2.33521	2.60169	4.62382	8.49008	9.6993	12.6636
19	1.65233	1.97913	2.2284	4.21047	8.46704	9.7	12.5849
21	1.4093	1.6806	1.89931	3.7592	8.19141	9.53722	12.2282
23	1.20917	1.42419	1.62093	3.31388	7.90253	9.08854	11.9899
26	0.956772	1.14051	1.28603	2.72438	7.33598	8.54747	11.4433
28	0.825609	0.973081	1.10181	2.38068	6.81855	7.9251	10.9252
30	0.675121	0.809649	0.917819	2.06847	6.28184	7.43075	10.2591
32	0.536724	0.659131	0.747663	1.76073	5.7859	7.00454	9.27803
35	0.379789	0.471479	0.538416	1.3471	4.97982	6.0823	8.00485
39	0.266392	0.321976	0.367643	0.958997	3.98593	5.06235	6.98549
43	0.198095	0.23708	0.270098	0.700849	3.24714	4.19524	5.86539
47	0.146487	0.174402	0.201406	0.525566	2.6007	3.47049	4.80612
52	0.0975441	0.116568	0.134958	0.363535	1.99234	2.74235	3.8317
57	0.0639545	0.0763184	0.0884568	0.249255	1.50587	2.18063	3.04854
64	0.0365823	0.0433852	0.0506906	0.145214	1.00496	1.5595	2.22444
70	0.0227055	0.027079	0.0316713	0.0941508	0.710285	1.13816	1.70025
78	0.01289	0.0157556	0.0186848	0.0542116	0.447585	0.780038	1.20791
86	0.00700636	0.00871998	0.0101595	0.0311331	0.286641	0.52098	0.873783
95	0.00370165	0.00463874	0.00550786	0.0170007	0.17937	0.338964	0.609538
100	0.00238307	0.00301758	0.00352321	0.011847	0.138559	0.268367	0.500591
105	0.00115644	0.00150512	0.00181984	0.00725174	0.106745	0.211248	0.411507
116	0.000277769	0.000374977	0.00046435	0.00220836	0.0562824	0.121604	0.259684
128	1.00E-04	1.32E-04	1.62E-04	0.000795568	0.029736	0.0696318	0.163967
141	4.00E-05	5.38E-05	6.82E-05	3.21E-04	0.0153683	0.0395281	0.104028
156	1.87E-05	2.63E-05	3.29E-05	1.43E-04	7.33E-03	2.07E-02	6.12E-02
172	8.67E-06	1.26E-05	1.56E-05	6.84E-05	3.32E-03	1.07E-02	3.53E-02
190	2.90E-06	4.33E-06	5.45E-06	2.54E-05	1.37E-03	5.17E-03	1.93E-02
210	6.79E-07	1.02E-06	1.32E-06	7.09E-06	5.33E-04	2.34E-03	9.95E-03
232	1.31E-07	2.10E-07	2.79E-07	1.70E-06	1.89E-04	9.84E-04	4.85E-03
256	1.82E-08	3.19E-08	4.46E-08	3.44E-07	6.52E-05	3.89E-04	2.25E-03
282	1.15E-09	2.87E-09	4.88E-09	5.66E-08	2.12E-05	1.45E-04	9.95E-04
300	0.00E+00	1.60E-10	4.63E-10	9.29E-09	9.71E-06	7.40E-05	5.71E-04
312	0.00E+00	0.00E+00	0.00E+00	2.11E-09	5.66E-06	4.74E-05	3.95E-04
344	0.00E+00	0.00E+00	4.77E-12	2.24E-10	1.32E-06	1.46E-05	1.55E-04
380	5.00E-13	3.52E-12	5.19E-12	2.91E-11	2.81E-07	3.95E-06	5.52E-05
420	0.00E+00	1.91E-13	6.04E-13	9.78E-12	4.86E-08	9.54E-07	1.73E-05
464	0.00E+00	1.84E-13	4.24E-13	2.68E-12	7.68E-09	2.08E-07	4.89E-06
512	0.00E+00	4.37E-14	1.56E-13	9.18E-13	1.05E-09	4.03E-08	1.25E-06
565	0.00E+00	0.00E+00	7.32E-14	5.81E-13	1.19E-10	6.71E-09	2.83E-07
624	0	0	0	3.74E-13	1.18E-11	9.18E-10	5.49E-08
689	2.3406E-13	4.81794E-13	6.91977E-13	1.68694E-12	5.98E-12	1.06E-10	9.50E-09
761	0	0	0	1.91422E-12	7.86114E-12	1.69391E-11	1.41259E-09
840	0	0	0	0	3.17724E-12	7.69862E-12	1.59549E-10
928	0	0	0	4.96266E-12	3.42186E-11	5.07305E-11	1.05249E-10
1000	0	0	0	9.73333E-12	5.01542E-11	7.38048E-11	1.53775E-10
1024	8.61523E-12	1.5119E-11	1.94063E-11	4.16419E-11	9.96784E-11	1.22234E-10	1.96941E-10
1131	9.2506E-12	1.58934E-11	1.93863E-11	4.01344E-11	9.81934E-11	1.20922E-10	1.79524E-10
1249	6.49682E-12	9.57491E-12	1.16623E-11	2.34838E-11	5.36137E-11	6.81195E-11	1.01169E-10
1379	2.75427E-13	1.75923E-12	2.27885E-12	5.12015E-12	1.20776E-11	1.5489E-11	2.29213E-11
1523	0	0	9.73599E-15	1.47096E-13	5.52878E-13	1.27304E-12	4.77527E-12
1681	0	5.55877E-15	4.48417E-14	1.95726E-13	7.43038E-13	1.23029E-12	2.73046E-12
1856	1.95771E-14	9.20333E-14	1.32521E-13	3.6387E-13	1.12113E-12	1.54315E-12	2.54221E-12
2050	0	8.97615E-14	1.45671E-13	3.70986E-13	1.02973E-12	1.39688E-12	2.16087E-12
2263	0	0	3.13922E-15	9.41782E-14	3.3421E-13	4.83194E-13	9.69613E-13
2499	0	0	0	0	2.4917E-14	5.42095E-14	3.00345E-13
2759	0	0	0	5.6468E-15	3.32922E-14	5.837E-14	2.16997E-13
3046	0	0	0	3.84704E-15	2.75957E-14	4.55519E-14	1.42156E-13
3363	1.94708E-16	1.08941E-14	1.61452E-14	3.98514E-14	1.09318E-13	1.36463E-13	2.24901E-13
3714	2.97243E-14	4.2971E-14	5.01838E-14	1.00866E-13	2.3432E-13	2.88721E-13	4.33659E-13
4100	4.19843E-14	6.35314E-14	7.70759E-14	1.52697E-13	3.56956E-13	4.32503E-13	6.31188E-13
4527	3.55662E-14	6.73149E-14	8.24761E-14	1.82433E-13	4.26483E-13	5.53878E-13	8.10447E-13
4999	0	0	0	2.99672E-14	1.88334E-13	2.78563E-13	5.96746E-13
5519	0	0	0	0	0	0	7.82049E-13
6094	0	0	0	1.88012E-13	7.51318E-13	1.10677E-12	2.15559E-12
6728	0	1.40883E-13	2.7236E-13	8.05717E-13	2.16272E-12	2.84971E-12	4.18175E-12
7428	0	0	1.99775E-13	1.43421E-12	4.17542E-12	5.75394E-12	8.43676E-12
8202	0	1.54684E-13	1.33783E-12	4.81468E-12	1.26693E-11	1.70958E-11	2.57647E-11
9056	0	0	0	7.03586E-12	2.20649E-11	3.20435E-11	6.24406E-11
9999	0	0	4.8059E-12	3.2214E-11	9.49249E-11	1.23148E-10	1.92774E-10
11039	2.87373E-11	4.48466E-11	5.36542E-11	1.04265E-10	2.43478E-10	2.99107E-10	4.01964E-10
12189	3.47949E-11	4.83249E-11	5.49149E-11	1.09816E-10	2.57311E-10	3.19859E-10	4.02591E-10
13458	1.4622E-11	2.35879E-11	3.06936E-11	6.60884E-11	1.62591E-10	2.04997E-10	2.991E-10
14859	2.18067E-12	6.93972E-12	1.02623E-11	2.77921E-11	7.21871E-11	9.23737E-11	1.40697E-10
16406	3.36359E-14	8.03303E-13	1.61454E-12	5.58176E-12	1.49458E-11	1.83213E-11	2.7606E-11
18114	0	0	0	0	2.50884E-14	8.4297E-14	3.08175E-13
20000	0	0	0	0	5.25844E-14	1.15627E-13	3.66907E-13

s4HRA1 GW	Species	RWQS (mg/l)					
	Zn	5					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
16	0	0	0	0	0	0	1.66805E-16
17	0	0	0	0	0	0	6.25705E-16
19	0	0	0	0	0	0	2.5335E-15
21	0	0	0	0	0	1.0215E-18	7.12377E-14
23	0	0	0	0	0	1.56944E-18	1.18364E-12
26	0	0	0	0	1.85128E-19	5.5498E-18	2.82455E-11
28	0	0	0	0	2.53138E-19	8.39182E-18	1.45202E-10
30	0	0	0	0	6.02741E-19	5.52562E-17	5.68611E-10
32	0	0	0	0	8.10688E-19	2.85527E-16	2.02981E-09
35	0	0	0	0	1.7244E-18	4.15193E-15	1.0098E-08
39	0	0	0	0	2.44507E-18	1.19851E-13	5.5412E-08
43	0	0	0	0	5.52725E-18	1.91929E-12	2.13656E-07
47	0	0	0	0	5.59904E-17	1.82904E-11	6.39454E-07
52	0	0	0	0	1.96655E-15	1.73911E-10	1.91842E-06
57	0	0	0	0	3.43283E-14	1.1075E-09	4.57432E-06
64	0	0	0	0	8.25221E-13	8.70741E-09	1.17024E-05
70	0	0	0	0	7.48112E-12	3.41092E-08	2.17282E-05
78	0.00E+00	0.00E+00	0.00E+00	0	9.21066E-11	1.36151E-07	4.09416E-05
86	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.53986E-10	4.41069E-07	6.57366E-05
95	0.00E+00	0.00E+00	0.00E+00	0.00E+00	3.06E-09	1.29E-06	9.75E-05
100	0.00E+00	0.00E+00	3.11E-19	2.76E-17	6.34E-09	2.13E-06	1.16E-04
105	0.00E+00	0.00E+00	3.18E-19	3.19E-17	1.21E-08	3.20E-06	1.33E-04
116	0.00E+00	0.00E+00	3.30E-19	4.08E-17	5.09E-08	7.19E-06	1.65E-04
128	0.00E+00	0.00E+00	3.55E-19	5.05E-17	1.84E-07	1.43E-05	1.95E-04
141	0.00E+00	0.00E+00	3.84E-19	7.71E-17	4.49E-07	2.37E-05	2.24E-04
156	5.90E-19	3.30E-18	5.85E-18	5.16E-16	1.14E-06	3.85E-05	2.39E-04
172	6.11E-19	3.36E-18	6.03E-18	9.15E-15	2.63E-06	5.34E-05	2.75E-04
190	6.35E-19	3.45E-18	6.82E-18	1.39E-13	5.75E-06	6.63E-05	3.01E-04
210	5.70E-19	2.11E-18	5.67E-18	1.66E-12	1.15E-05	7.89E-05	3.14E-04
232	5.82E-19	2.56E-18	6.85E-18	1.37E-11	1.82E-05	9.27E-05	2.87E-04
256	3.58E-19	1.74E-18	5.01E-18	9.79E-11	2.56E-05	1.08E-04	2.66E-04
282	3.77E-19	2.17E-18	7.05E-18	5.33E-10	3.40E-05	1.07E-04	2.74E-04
300	3.41E-19	1.85E-18	8.32E-18	1.42E-09	4.16E-05	1.11E-04	2.64E-04
312	3.48E-19	2.20E-18	1.38E-17	2.68E-09	4.60E-05	1.16E-04	2.50E-04
344	3.64E-19	4.64E-18	2.95E-16	1.05E-08	5.26E-05	1.13E-04	2.24E-04
380	3.84E-19	4.61E-17	6.07E-15	3.53E-08	5.53E-05	1.06E-04	2.07E-04
420	5.67E-19	1.13E-15	8.98E-14	1.06E-07	5.76E-05	1.00E-04	2.01E-04
464	1.03E-18	1.93E-14	1.04E-12	2.61E-07	5.98E-05	9.33E-05	1.76E-04
512	1.51E-17	2.70E-13	8.99E-12	5.56E-07	5.53E-05	8.64E-05	1.69E-04
565	3.66E-16	2.67E-12	6.13E-11	1.00E-06	5.52E-05	7.99E-05	1.56E-04
624	6.82E-15	1.99E-11	3.45E-10	1.84E-06	5.31E-05	7.36E-05	1.54E-04
689	1.01415E-13	1.19349E-10	1.57E-09	2.90E-06	4.93E-05	7.04E-05	1.42E-04
761	1.13559E-12	6.15035E-10	5.92614E-09	4.2182E-06	4.68E-05	6.54E-05	1.34E-04
840	9.62705E-12	2.21666E-09	1.89773E-08	5.7135E-06	4.41763E-05	6.09E-05	1.24E-04
928	6.53405E-11	7.57941E-09	5.32131E-08	7.44469E-06	4.18185E-05	5.67748E-05	0.000118945
1000	2.37654E-10	1.75945E-08	1.05661E-07	8.64939E-06	4.05833E-05	5.40919E-05	0.000106399
1024	3.49423E-10	2.29152E-08	1.29467E-07	8.93241E-06	4.01544E-05	5.35217E-05	0.000106624
1131	5.99814E-10	6.05051E-08	2.35098E-07	1.04102E-05	3.87552E-05	5.25596E-05	9.40452E-05
1249	2.20081E-09	1.22951E-07	4.04426E-07	1.17157E-05	3.70472E-05	4.81022E-05	8.35282E-05
1379	7.2145E-09	1.78913E-07	7.37986E-07	1.23728E-05	3.56219E-05	4.48467E-05	8.05553E-05
1523	1.10753E-08	3.35239E-07	1.14251E-06	1.23618E-05	3.36861E-05	4.19143E-05	7.59192E-05
1681	8.85995E-09	5.49734E-07	1.37923E-06	1.27666E-05	3.21169E-05	3.93519E-05	0.000073585
1856	3.12095E-09	5.2768E-07	1.8714E-06	1.25751E-05	3.01878E-05	3.69684E-05	6.98927E-05
2050	9.98786E-10	5.71791E-07	2.46567E-06	1.26384E-05	2.81773E-05	3.53379E-05	6.23065E-05
2263	2.90569E-10	5.9259E-07	2.66945E-06	1.24078E-05	2.61994E-05	3.36602E-05	5.47295E-05
2499	7.52923E-11	5.19897E-07	2.53176E-06	1.20656E-05	2.46829E-05	3.22895E-05	5.13451E-05
2759	1.72981E-11	5.38779E-07	2.23354E-06	1.14643E-05	2.33497E-05	2.98084E-05	4.78001E-05
3046	3.46413E-12	3.30188E-07	1.91694E-06	1.10499E-05	2.28822E-05	2.82522E-05	4.37809E-05
3363	5.9674E-13	1.94829E-07	1.58364E-06	1.03763E-05	0.000021248	2.69777E-05	4.14204E-05
3714	8.66363E-14	1.07498E-07	1.10688E-06	9.69385E-06	2.07227E-05	2.59677E-05	3.85189E-05
4100	1.05037E-14	5.37392E-08	7.51062E-07	8.86563E-06	1.97035E-05	2.45226E-05	3.70126E-05
4527	1.07114E-15	2.53377E-08	4.53759E-07	8.0096E-06	1.86439E-05	2.32489E-05	3.39868E-05
4999	1.03099E-16	1.12056E-08	2.88159E-07	6.99146E-06	1.73222E-05	2.20598E-05	3.16025E-05
5519	4.19993E-18	4.63098E-09	1.69251E-07	6.08739E-06	1.62612E-05	0.000020755	2.94699E-05
6094	3.89764E-17	1.76988E-09	9.03338E-08	5.09452E-06	1.53565E-05	1.89214E-05	2.65489E-05
6728	6.94128E-17	6.22271E-10	5.14595E-08	4.17268E-06	1.41012E-05	1.74187E-05	2.36684E-05
7428	1.50222E-16	1.99246E-10	2.80302E-08	3.37681E-06	1.27106E-05	1.62376E-05	2.20015E-05
8202	2.33928E-16	5.74341E-11	1.27227E-08	2.72383E-06	1.15935E-05	1.45718E-05	1.98523E-05
9056	4.84497E-16	1.47838E-11	5.89925E-09	2.13284E-06	1.03886E-05	1.32401E-05	1.73906E-05
9999	2.03789E-16	3.3548E-12	2.61106E-09	1.6271E-06	9.38651E-06	1.19283E-05	1.60397E-05
11039	4.71974E-16	5.74756E-13	1.05482E-09	1.22325E-06	8.31058E-06	1.09037E-05	1.42399E-05
12189	0	9.75264E-14	3.97585E-10	8.95301E-07	7.29459E-06	9.71908E-06	1.26915E-05
13458	3.80603E-18	3.16799E-14	1.2728E-10	6.49414E-07	6.17179E-06	8.22916E-06	1.14875E-05
14859	1.84553E-18	1.90995E-14	4.09596E-11	4.56497E-07	5.02466E-06	6.97947E-06	1.00468E-05
16406	5.3318E-15	2.56994E-14	1.10816E-11	3.19416E-07	4.17448E-06	5.91236E-06	8.75988E-06
18114	5.64992E-18	3.75938E-16	2.60059E-12	2.10691E-07	3.3992E-06	5.07048E-06	7.5648E-06
20000	2.34068E-18	1.04506E-16	5.32444E-13	1.37624E-07	2.76252E-06	4.26858E-06	6.58876E-06

s5HRA1 GW	Species	RWQS (mg/l)					
	NH3-	0.5					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	6.59E-20	6.48E-18	1.40E-15
3	0	0	0	0	2.65E-17	2.16E-15	1.17E-12
4	0	0	0	0	6.41E-16	3.63E-13	2.40E-10
5	0	0	0	0	1.17E-12	1.05E-10	2.77E-08
6	0	0	0	1.68E-16	2.07E-10	4.13E-08	1.22E-06
7	1.15E-18	4.30E-17	4.94E-16	2.01E-07	2.10E-05	3.58E-05	8.77E-05
8	1.57E-18	3.90E-16	1.81E-10	7.23E-06	8.63E-05	0.000127169	0.000209627
9	1.93E-18	3.54E-12	2.26E-08	2.69E-05	0.000151072	0.000185153	0.000281774
10	3.09E-18	5.61E-10	3.28E-07	5.29E-05	0.000184424	0.00024296	0.000343255
11	1.09E-17	1.15E-08	1.80E-06	8.09E-05	0.000210063	0.000268276	0.000374548
13	1.06E-13	3.72E-07	1.19E-05	0.000110345	0.000234849	0.000296648	0.000447218
14	2.06E-12	1.24E-06	2.25E-05	0.000116257	0.00024363	0.00030157	0.000482035
16	1.38E-10	6.11E-06	4.35E-05	0.000119486	0.000241752	0.000314693	0.000532055
17	6.49E-10	1.05E-05	5.17E-05	0.000115852	0.000250476	0.000321302	0.000554492
19	7.18E-09	2.38E-05	4.81E-05	0.000110116	0.000251092	0.000339887	0.00056153
21	4.24E-08	2.72E-05	4.23E-05	0.00010253	0.000256996	0.000337183	0.000552064
23	1.65E-07	2.51E-05	3.48E-05	9.24E-05	0.000251023	0.000327367	0.000594279
26	7.58E-07	1.89E-05	2.46E-05	7.55E-05	0.000243227	0.000320291	0.000587705
28	1.65E-06	1.58E-05	1.98E-05	6.50E-05	0.000232512	0.000320718	0.000570943
30	3.13E-06	1.23E-05	1.53E-05	5.44E-05	0.00022247	0.000308395	0.000549393
32	4.06E-06	8.95E-06	1.14E-05	4.56E-05	0.000206473	0.000305098	0.000603477
35	3.01E-06	5.76E-06	7.41E-06	3.47E-05	0.000193172	0.000283772	0.000547657
39	1.89E-06	3.37E-06	4.40E-06	2.27E-05	0.000172404	0.000276077	0.000539613
43	1.11E-06	1.89E-06	2.53E-06	1.56E-05	0.000163343	0.000260729	0.000500511
47	7.61E-07	1.17E-06	1.55E-06	1.07E-05	0.00015653	0.000259162	0.00045524
52	4.45E-07	6.82E-07	8.97E-07	6.60E-06	0.00014449	0.000232685	0.00040365
57	2.76E-07	4.17E-07	5.53E-07	4.20E-06	0.00013291	0.000210714	0.000365315
64	1.37E-07	2.08E-07	2.72E-07	2.23E-06	0.000112851	0.000194529	0.000323779
70	6.06E-08	9.52E-08	1.30E-07	1.27E-06	9.69E-05	0.000165094	0.000294266
78	2.35E-08	3.69E-08	5.20E-08	5.90E-07	8.24E-05	0.000150775	0.000277295
86	9.22E-09	1.54E-08	2.16E-08	2.81E-07	6.39E-05	0.0001278	0.000266658
95	3.03E-09	5.23E-09	7.35E-09	1.21E-07	5.11E-05	0.000115531	0.000263144
100	1.26E-09	2.30E-09	3.51E-09	7.68E-08	4.39E-05	0.000108912	0.000268567
105	3.46E-10	7.32E-10	1.22E-09	4.81E-08	3.75E-05	9.67E-05	0.000269727
116	7.81E-11	1.51E-10	2.38E-10	1.72E-08	2.79E-05	8.51E-05	0.000258155
128	2.05E-11	3.60E-11	5.48E-11	5.53E-09	1.96E-05	6.89E-05	0.000244375
141	6.79E-12	1.16E-11	1.58E-11	1.76E-09	1.37E-05	5.33E-05	0.000227037
156	2.00E-12	4.04E-12	5.76E-12	4.77E-10	9.68E-06	4.22E-05	0.000219481
172	0	3.92E-13	9.63E-13	1.27E-10	6.69E-06	3.24E-05	0.000202195
190	5.59E-15	1.80E-14	3.42E-14	2.73E-11	4.56E-06	2.43E-05	0.000184094
210	0	1.95E-15	8.42E-15	5.37E-12	3.02E-06	1.79E-05	0.000167496
232	0	1.96E-15	4.98E-15	8.77E-13	1.88E-06	1.35E-05	0.000145835
256	8.11E-16	1.96E-15	2.62E-15	1.35E-13	1.08E-06	9.66E-06	0.00012533
282	1.81E-16	3.41E-16	5.02E-16	2.07E-14	5.97E-07	6.92E-06	0.00011004
300	1.83E-16	2.88E-16	3.79E-16	5.56E-15	4.00E-07	5.52E-06	0.000101636
312	0	2.55E-17	4.11E-17	1.82E-15	3.07E-07	4.71E-06	9.64E-05
344	0	0	0	1.37E-16	1.67E-07	3.11E-06	8.36E-05
380	0	0	0	6.79E-17	8.18E-08	1.98E-06	6.88E-05
420	0	1.35E-18	2.53E-18	3.33E-17	3.60E-08	1.22E-06	5.25E-05
464	0	9.07E-19	1.85E-18	1.85E-17	1.49E-08	7.19E-07	4.11E-05
512	0	0	0	3.76E-18	6.07E-09	4.37E-07	3.33E-05
565	0	0	0	0	2.20E-09	2.64E-07	2.66E-05
624	0	0	0	8.81E-18	6.88E-10	1.43E-07	2.08E-05
689	0	0	0	2.13E-17	1.94E-10	7.04E-08	1.61E-05
761	0	0	1.97E-17	1.12E-16	4.88E-11	3.25E-08	1.22E-05
840	0	0	0	3.62E-16	1.12E-11	1.44E-08	9.05E-06
928	4.79E-17	2.30E-16	2.99E-16	7.71E-16	2.21E-12	6.12E-09	6.57E-06
1000	1.17E-16	2.69E-16	3.33E-16	9.63E-16	7.58E-13	3.08E-09	5.10E-06
1024	0	0	2.04E-18	1.47E-16	5.62E-13	2.46E-09	4.69E-06
1131	0	0	0	3.46E-17	1.36E-13	9.04E-10	3.21E-06
1249	0	8.36E-19	4.60E-17	6.50E-16	2.44E-14	2.97E-10	1.93E-06
1379	2.11E-16	4.67E-16	6.05E-16	1.58E-15	1.84E-14	8.91E-11	1.12E-06
1523	0	0	0	2.23E-18	2.30E-17	2.20E-11	6.21E-07
1681	0	0	0	2.57E-18	2.03E-17	4.73E-12	3.30E-07
1856	0	0	2.72E-19	1.83E-18	1.85E-17	8.96E-13	1.66E-07
2050	0	0	0	2.25E-18	2.39E-17	1.49E-13	7.83E-08
2263	0	0	0	2.31E-18	1.84E-17	2.11E-14	3.49E-08
2499	0	0	0	1.22E-18	8.76E-18	2.05E-15	1.45E-08
2759	0	0	0	3.35E-19	4.23E-18	9.02E-17	5.55E-09
3046	0	0	0	1.71E-19	2.13E-18	1.55E-17	1.96E-09
3363	0	0	0	4.38E-20	1.80E-18	1.89E-17	6.29E-10
3714	0	0	0	5.32E-20	3.23E-18	1.10E-17	1.81E-10
4100	0	0	0	1.02E-18	7.87E-18	1.92E-17	4.69E-11
4527	0	0	0	2.24E-18	1.33E-17	2.97E-17	1.07E-11
4999	0	0	0	0	6.38E-18	1.59E-17	2.21E-12
5519	0	0	0	5.87E-19	1.45E-17	3.07E-17	4.13E-13
6094	0	0	0	2.22E-18	2.91E-17	5.24E-17	6.53E-14
6728	0	0	0	2.80E-17	1.65E-16	2.78E-16	9.42E-15
7428	0	0	0	0	1.64E-16	3.27E-16	3.04E-15
8202	0	0	0	1.63E-16	1.20E-15	2.20E-15	2.08E-14
9056	0	0	0	3.90E-17	6.85E-16	1.41E-15	5.27E-15
9999	0	0	0	1.44E-15	7.70E-15	1.49E-14	5.23E-14
11039	0	0	1.98E-20	1.32E-15	1.06E-14	1.99E-14	1.08E-13
12189	0	0	0	8.90E-16	6.11E-15	1.18E-14	4.32E-14
13458	0	0	2.71E-20	1.14E-15	7.07E-15	1.33E-14	4.79E-14
14859	3.24E-16	8.49E-16	1.13E-15	2.94E-15	1.41E-14	2.67E-14	8.94E-14
16406	1.31E-19	3.18E-16	5.09E-16	1.46E-15	7.58E-15	1.40E-14	3.33E-14
18114	0	0	0	0	2.96E-18	8.68E-18	5.83E-17
20000	0	0	0	1.27E-19	1.22E-17	2.11E-17	9.49E-17

s5HRA1 GW	Species	RWQS (mg/l)					
	As	0.01					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	3.53E-20
13	0	0	0	0	0	0	2.39E-17
14	0	0	0	0	0	3.60E-20	3.05E-16
16	0	0	0	0	1.59E-20	7.50E-18	1.93E-14
17	0	0	0	0	2.13E-19	7.21E-17	1.04E-13
19	0	0	0	0	1.44E-17	2.41E-15	1.55E-12
21	0	0	0	0	4.22E-16	4.01E-14	1.33E-11
23	0	0	0	0	6.84E-15	4.04E-13	7.74E-11
26	0	0	0	5.52E-20	1.68E-13	6.35E-12	6.32E-10
28	0	0	0	3.91E-19	9.68E-13	2.81E-11	1.91E-09
30	0	0	0	4.70E-18	4.47E-12	9.96E-11	4.71E-09
32	0	0	0	4.38E-17	1.68E-11	2.85E-10	1.02E-08
35	0	0	0	7.48E-16	9.18E-11	1.15E-09	2.66E-08
39	0	0	0	1.67E-14	5.64E-10	5.04E-09	8.12E-08
43	0	0	0	2.07E-13	2.36E-09	1.61E-08	2.02E-07
47	0	0	0	1.57E-12	7.63E-09	4.11E-08	4.16E-07
52	0	0	4.91E-20	1.29E-11	2.49E-08	1.07E-07	8.10E-07
57	0	0	1.31E-19	6.97E-11	6.21E-08	2.27E-07	1.43E-06
64	0	0	3.55E-18	4.67E-10	1.68E-07	5.22E-07	2.65E-06
70	0	0	7.90E-17	1.72E-09	3.39E-07	9.73E-07	3.81E-06
78	0	0	2.45E-15	6.97E-09	7.26E-07	1.72E-06	5.83E-06
86	0	1.05E-19	3.65E-14	2.00E-08	1.31E-06	2.70E-06	7.70E-06
95	0	3.74E-18	4.43E-13	5.53E-08	2.24E-06	4.04E-06	1.02E-05
100	6.04E-19	2.56E-17	1.45E-12	8.97E-08	2.81E-06	4.87E-06	1.14E-05
105	7.26E-19	1.10E-16	4.19E-12	1.40E-07	3.54E-06	5.68E-06	1.26E-05
116	7.31E-19	2.28E-15	3.11E-11	3.23E-07	5.08E-06	7.63E-06	1.51E-05
128	7.78E-19	3.40E-14	1.73E-10	6.42E-07	6.90E-06	9.84E-06	1.74E-05
141	1.03E-18	3.71E-13	8.45E-10	1.19E-06	8.80E-06	1.19E-05	1.88E-05
156	1.28E-17	3.51E-12	3.75E-09	1.98E-06	1.08E-05	1.38E-05	2.06E-05
172	1.32E-17	2.47E-11	1.32E-08	3.00E-06	1.22E-05	1.58E-05	2.12E-05
190	1.38E-17	1.48E-10	4.11E-08	4.44E-06	1.36E-05	1.68E-05	2.28E-05
210	2.41E-17	7.84E-10	1.14E-07	5.92E-06	1.47E-05	1.81E-05	2.51E-05
232	1.85E-16	3.59E-09	2.79E-07	7.34E-06	1.58E-05	1.87E-05	2.78E-05
256	3.39E-15	1.22E-08	6.12E-07	8.37E-06	1.63E-05	1.98E-05	3.01E-05
282	4.79E-14	3.63E-08	1.16E-06	8.99E-06	1.65E-05	2.09E-05	3.24E-05
300	2.27E-13	7.40E-08	1.61E-06	9.15E-06	1.65E-05	2.11E-05	3.21E-05
312	5.77E-13	1.13E-07	2.00E-06	9.15E-06	1.67E-05	2.14E-05	3.24E-05
344	4.97E-12	2.72E-07	3.13E-06	9.03E-06	1.74E-05	2.13E-05	3.51E-05
380	3.55E-11	5.91E-07	3.48E-06	8.74E-06	1.74E-05	2.22E-05	3.64E-05
420	2.07E-10	1.16E-06	3.12E-06	8.24E-06	1.71E-05	2.14E-05	3.42E-05
464	9.89E-10	1.35E-06	2.77E-06	7.64E-06	1.64E-05	2.13E-05	3.24E-05
512	3.90E-09	1.24E-06	2.16E-06	6.53E-06	1.57E-05	2.07E-05	3.24E-05
565	1.26E-08	9.43E-07	1.62E-06	5.54E-06	1.55E-05	1.97E-05	3.28E-05
624	3.57E-08	6.25E-07	1.10E-06	4.53E-06	1.48E-05	1.94E-05	3.08E-05
689	6.74E-08	3.68E-07	7.36E-07	3.73E-06	1.42E-05	1.86E-05	2.98E-05
761	8.39E-08	2.31E-07	4.74E-07	2.88E-06	1.34E-05	1.82E-05	3.03E-05
840	4.26E-08	1.33E-07	2.99E-07	2.10E-06	1.25E-05	1.83E-05	2.97E-05
928	2.03E-08	6.75E-08	1.63E-07	1.53E-06	1.22E-05	1.73E-05	2.88E-05
1000	1.38E-08	3.55E-08	9.73E-08	1.17E-06	1.18E-05	1.65E-05	2.93E-05
1024	1.09E-08	3.08E-08	8.29E-08	1.12E-06	1.19E-05	1.65E-05	2.87E-05
1131	3.20E-09	1.15E-08	3.90E-08	7.36E-07	1.05E-05	1.54E-05	2.72E-05
1249	9.39E-10	4.52E-09	1.74E-08	4.71E-07	1.01E-05	1.49E-05	2.63E-05
1379	2.77E-10	1.38E-09	7.10E-09	2.99E-07	9.18E-06	1.37E-05	2.57E-05
1523	7.13E-11	4.29E-10	2.63E-09	1.85E-07	7.98E-06	1.33E-05	2.27E-05
1681	1.77E-11	1.18E-10	9.04E-10	1.10E-07	6.95E-06	1.25E-05	2.15E-05
1856	1.89E-11	1.15E-10	5.41E-10	6.46E-08	6.35E-06	1.19E-05	2.17E-05
2050	4.64E-12	3.02E-11	1.76E-10	3.55E-08	5.32E-06	1.09E-05	1.95E-05
2263	6.75E-13	6.18E-12	5.03E-11	1.80E-08	4.31E-06	1.01E-05	1.95E-05
2499	9.29E-14	1.15E-12	9.86E-12	9.24E-09	3.37E-06	9.01E-06	1.73E-05
2759	7.21E-15	1.67E-13	1.90E-12	4.46E-09	2.66E-06	8.14E-06	1.76E-05
3046	6.74E-16	1.55E-14	3.23E-13	2.01E-09	2.01E-06	6.90E-06	1.71E-05
3363	2.33E-17	1.48E-15	4.27E-14	8.20E-10	1.55E-06	5.73E-06	1.64E-05
3714	0	1.76E-16	5.39E-15	3.19E-10	1.13E-06	4.87E-06	1.61E-05
4100	0	1.09E-17	5.95E-16	1.13E-10	8.00E-07	3.86E-06	1.55E-05
4527	2.08E-19	3.66E-18	6.99E-17	3.86E-11	5.54E-07	3.05E-06	1.44E-05
4999	2.48E-19	2.33E-18	7.60E-18	1.07E-11	3.78E-07	2.34E-06	1.25E-05
5519	0	4.03E-19	1.62E-18	2.79E-12	2.52E-07	1.76E-06	1.07E-05
6094	0	6.23E-19	1.38E-18	6.15E-13	1.61E-07	1.30E-06	1.05E-05
6728	0	0	4.41E-19	1.25E-13	1.01E-07	9.43E-07	9.81E-06
7428	0	3.79E-19	2.28E-18	2.16E-14	6.14E-08	6.67E-07	8.37E-06
8202	0	0	0	3.12E-15	3.58E-08	4.53E-07	6.73E-06
9056	0	4.87E-18	1.14E-17	3.89E-16	2.01E-08	3.05E-07	5.42E-06
9999	0	0	0	1.09E-16	1.08E-08	2.03E-07	4.56E-06
11039	0	0	0	1.06E-16	5.44E-09	1.28E-07	3.78E-06
12189	0	0	0	5.54E-17	2.61E-09	7.84E-08	3.08E-06
13458	0	0	0	5.56E-17	1.18E-09	4.62E-08	2.48E-06
14859	0	0	0	6.10E-17	4.94E-10	2.61E-08	1.96E-06
16406	0	1.01E-19	2.68E-17	2.52E-16	1.93E-10	1.41E-08	1.53E-06
18114	0	0	7.81E-21	4.82E-19	6.93E-11	7.58E-09	1.17E-06
20000	0	0	0	6.70E-19	2.27E-11	3.93E-09	8.80E-07

s5HRA1 GW	Species	RWQS (mg/l)					
	Cl-	250					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	4.70E-10	1.72E-09	1.80E-07
2	9.16E-07	0.000210568	0.000344497	0.000635473	0.0011779	0.00137873	0.00167903
3	0.000186904	0.00563035	0.00861986	0.0162165	0.0298044	0.0347022	0.0453998
4	0.00351236	0.0252864	0.0310425	0.0555185	0.104368	0.123042	0.160474
5	0.0209553	0.0310617	0.0372131	0.0695093	0.171252	0.206553	0.285644
6	0.0200235	0.0258607	0.030447	0.0601844	0.201258	0.261387	0.373756
7	0.0166399	0.0210575	0.024837	0.0492356	0.210007	0.28739	0.41992
8	0.0141964	0.0178979	0.0207218	0.0413677	0.22062	0.299272	0.443199
9	0.0115631	0.0150404	0.0173102	0.0347434	0.199241	0.308865	0.489374
10	0.00949566	0.0125601	0.0145128	0.0286891	0.183318	0.305746	0.50547
11	0.00719532	0.00935182	0.0107761	0.0219087	0.156663	0.28624	0.509007
13	0.00567242	0.00718293	0.00841483	0.0165095	0.113144	0.222077	0.523269
14	0.00478481	0.00605522	0.00711221	0.0141875	0.0974981	0.194748	0.54717
16	0.00361443	0.00461126	0.00545274	0.0106561	0.0713635	0.152169	0.540819
17	0.00278297	0.00357112	0.00425332	0.00847855	0.0619764	0.136313	0.526493
19	0.00191134	0.00246365	0.00289041	0.00575933	0.0428164	0.100981	0.48765
21	0.00141222	0.00186137	0.00212073	0.00432948	0.0307299	0.075795	0.437574
23	0.00106694	0.00141119	0.00160754	0.00332212	0.0226261	0.058061	0.373565
26	0.000740183	0.000970284	0.00111302	0.00232788	0.0145863	0.0390172	0.290953
28	0.000483685	0.000629591	0.000737729	0.0015708	0.0109056	0.0302185	0.245346
30	0.000291068	0.000381091	0.000449561	0.000969317	0.00745171	0.0225502	0.206343
32	0.000177455	0.000229778	0.000273651	0.000608889	0.00483344	0.0159235	0.172588
35	0.000105407	0.000134111	0.000162757	0.000371281	0.00265601	0.0092398	0.130852
39	6.60E-05	8.48E-05	0.000102174	0.000240642	0.00144289	0.00486333	0.0901806
43	4.26E-05	5.53E-05	6.61E-05	0.000159421	0.000907822	0.00283717	0.0627468
47	2.57E-05	3.33E-05	4.03E-05	9.93E-05	0.000577007	0.00170486	0.0441493
52	1.32E-05	1.73E-05	2.09E-05	5.31E-05	0.000309053	0.000865218	0.028761
57	6.24E-06	7.90E-06	9.65E-06	2.53E-05	0.000152082	0.000425703	0.0189264
64	2.51E-06	3.35E-06	4.03E-06	1.13E-05	6.50E-05	0.00016922	0.0112692
70	1.02E-06	1.38E-06	1.69E-06	5.00E-06	2.99E-05	7.97E-05	0.00735656
78	4.70E-07	6.31E-07	7.78E-07	2.41E-06	1.30E-05	3.42E-05	0.00423891
86	1.55E-07	2.07E-07	2.61E-07	8.74E-07	4.84E-06	1.29E-05	0.00248585
95	5.57E-08	7.64E-08	9.75E-08	3.42E-07	1.95E-06	4.40E-06	0.00138706
100	1.72E-08	2.49E-08	3.15E-08	1.18E-07	7.89E-07	2.30E-06	0.00100981
105	5.00E-09	6.92E-09	8.67E-09	3.09E-08	2.35E-07	8.70E-07	0.000738203
116	2.17E-09	3.01E-09	3.74E-09	1.15E-08	6.41E-08	1.79E-07	0.000375363
128	8.54E-10	1.31E-09	1.66E-09	5.26E-09	2.75E-08	6.46E-08	0.000182669
141	9.97E-11	2.34E-10	3.93E-10	1.75E-09	9.32E-09	1.87E-08	8.51E-05
156	0	6.39E-13	3.57E-12	3.16E-10	2.10E-09	3.93E-09	3.59E-05
172	2.83E-12	3.90E-12	5.05E-12	1.97E-11	1.80E-10	4.15E-10	1.45E-05
190	8.52E-13	2.39E-12	3.03E-12	9.44E-12	5.63E-11	1.08E-10	5.33E-06
210	3.16E-14	7.10E-13	1.11E-12	4.73E-12	2.25E-11	3.96E-11	1.78E-06
232	3.51E-13	5.39E-13	6.90E-13	2.56E-12	1.16E-11	1.91E-11	5.42E-07
256	6.89E-14	9.72E-14	1.23E-13	5.62E-13	2.98E-12	5.43E-12	1.50E-07
282	2.35E-14	3.65E-14	4.96E-14	1.55E-13	8.13E-13	1.27E-12	3.81E-08
300	0	5.31E-15	8.44E-15	2.76E-14	1.37E-13	2.32E-13	1.49E-08
312	0	0	0	0	2.79E-15	1.12E-14	7.95E-09
344	0	0	0	1.28E-17	1.85E-15	5.96E-15	1.52E-09
380	0	0	0	6.67E-16	3.83E-15	8.64E-15	2.39E-10
420	0	0	0	1.34E-16	2.00E-15	4.72E-15	3.10E-11
464	0	0	0	0	1.31E-15	3.07E-15	3.20E-12
512	0	0	1.78E-16	1.02E-15	5.10E-15	9.22E-15	2.51E-13
565	0	5.01E-16	8.35E-16	2.53E-15	1.22E-14	2.21E-14	8.74E-14
624	0	6.76E-16	1.15E-15	4.01E-15	1.75E-14	2.99E-14	1.05E-13
689	3.15E-15	5.54E-15	7.01E-15	1.68E-14	8.23E-14	1.26E-13	3.81E-13
761	0	0	0	0	3.16E-14	8.16E-14	4.63E-13
840	0	0	0	1.06E-14	7.42E-14	1.20E-13	3.05E-13
928	0	0	0	0	3.15E-13	7.81E-13	3.05E-12
1000	0	0	0	1.24E-13	6.15E-13	1.18E-12	3.64E-12
1024	9.28E-14	1.52E-13	1.89E-13	4.17E-13	2.10E-12	3.53E-12	9.03E-12
1131	9.47E-14	1.33E-13	1.55E-13	3.25E-13	1.52E-12	2.79E-12	7.60E-12
1249	5.07E-14	6.82E-14	8.32E-14	1.82E-13	8.50E-13	1.53E-12	4.18E-12
1379	5.89E-15	1.48E-14	1.90E-14	4.63E-14	2.23E-13	3.82E-13	1.09E-12
1523	0	1.59E-16	2.23E-16	6.61E-16	3.30E-15	6.62E-15	2.35E-14
1681	1.73E-17	2.55E-16	3.75E-16	1.14E-15	5.92E-15	1.03E-14	3.52E-14
1856	3.39E-16	6.22E-16	8.24E-16	2.25E-15	1.05E-14	1.92E-14	5.86E-14
2050	2.91E-16	6.22E-16	7.71E-16	1.96E-15	9.57E-15	1.67E-14	6.09E-14
2263	0	2.22E-16	3.05E-16	9.21E-16	4.11E-15	7.97E-15	2.15E-14
2499	0	0	7.24E-17	3.00E-16	1.51E-15	2.58E-15	6.36E-15
2759	0	0	0	1.05E-16	6.83E-16	1.44E-15	4.17E-15
3046	0	0	0	4.23E-17	2.97E-16	5.81E-16	1.94E-15
3363	0	2.92E-17	5.53E-17	2.33E-16	1.34E-15	2.26E-15	7.34E-15
3714	5.57E-17	1.39E-16	1.75E-16	4.57E-16	2.26E-15	3.98E-15	1.08E-14
4100	1.26E-16	2.03E-16	2.57E-16	6.69E-16	3.31E-15	5.71E-15	1.60E-14
4527	5.22E-17	1.69E-16	2.38E-16	7.40E-16	4.03E-15	6.63E-15	2.19E-14
4999	0	0	0	0	1.15E-15	1.87E-15	5.99E-15
5519	0	0	0	0	0	0	2.21E-15
6094	0	1.22E-16	6.50E-16	3.13E-15	1.54E-14	2.55E-14	7.32E-14
6728	1.01E-15	2.22E-15	3.15E-15	7.96E-15	3.85E-14	6.70E-14	2.07E-13
7428	0	2.21E-15	3.86E-15	1.34E-14	6.46E-14	1.16E-13	3.01E-13
8202	0	0	6.79E-15	3.37E-14	1.76E-13	3.24E-13	1.10E-12
9056	0	0	3.55E-15	4.70E-14	2.32E-13	4.74E-13	1.35E-12
9999	0	0	3.63E-15	2.01E-13	1.05E-12	1.91E-12	5.61E-12
11039	1.83E-13	2.85E-13	3.44E-13	7.64E-13	3.58E-12	6.63E-12	1.99E-11
12189	2.29E-13	3.38E-13	3.93E-13	8.46E-13	4.02E-12	7.19E-12	1.97E-11
13458	1.30E-13	1.85E-13	2.32E-13	5.41E-13	2.45E-12	4.55E-12	1.38E-11
14859	3.07E-14	7.00E-14	8.77E-14	2.28E-13	1.09E-12	1.90E-12	6.20E-12
16406	0	7.95E-15	1.38E-14	4.34E-14	1.92E-13	3.52E-13	1.22E-12
18114	0	0	0	0	3.25E-16	8.99E-16	4.71E-15
20000	0	0	0	0	1.45E-15	3.02E-15	1.11E-14

s5HRA1 GW	Species	RWQS (mg/l)					
	Cu	2					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0
86	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0
128	0	0	0	0	0	0	0
141	0	0	0	0	0	0	0
156	0	0	0	0	0	0	0
172	0	0	0	0	0	0	0
190	0	0	0	0	0	0	0
210	0	0	0	0	0	0	1.70E-20
232	0	0	0	0	0	0	1.77E-20
256	0	0	0	0	0	0	2.72E-20
282	0	0	0	0	0	0	3.17E-20
300	0	0	0	0	0	0	1.32E-19
312	0	0	0	0	0	0	5.47E-19
344	0	0	0	0	0	0	1.46E-17
380	0	0	0	0	0	0	3.01E-16
420	0	0	0	0	0	0	4.70E-15
464	0	0	0	0	0	0	5.70E-14
512	0	0	0	0	0	0	5.20E-13
565	0	0	0	0	0	0	3.65E-12
624	0	0	0	0	0	1.49E-20	2.08E-11
689	0	0	0	0	0	5.35E-19	9.76E-11
761	0	0	0	0	0	1.41E-17	3.87E-10
840	0	0	0	0	9.45E-21	2.59E-16	1.30E-09
928	0	0	0	0	3.56E-19	3.58E-15	3.81E-09
1000	0	0	0	0	4.28E-18	2.21E-14	7.81E-09
1024	0	0	0	0	9.05E-18	3.97E-14	9.67E-09
1131	0	0	0	0	1.79E-16	3.93E-13	2.19E-08
1249	0	0	0	0	2.89E-15	2.78E-12	4.43E-08
1379	0	0	0	0	2.80E-14	1.49E-11	8.06E-08
1523	0	0	0	0	2.37E-13	6.78E-11	1.33E-07
1681	0	0	0	0	1.68E-12	2.88E-10	1.80E-07
1856	0	0	0	0	9.89E-12	8.70E-10	2.40E-07
2050	0	0	0	7.29E-21	4.27E-11	2.18E-09	3.62E-07
2263	0	0	0	1.09E-19	1.54E-10	5.32E-09	4.35E-07
2499	0	0	0	2.67E-18	5.03E-10	1.26E-08	4.89E-07
2759	0	0	0	5.28E-17	1.38E-09	2.78E-08	4.75E-07
3046	0	0	0	7.84E-16	3.36E-09	4.73E-08	4.73E-07
3363	0	0	0	8.99E-15	6.66E-09	7.11E-08	4.92E-07
3714	0	0	0	7.97E-14	1.49E-08	1.12E-07	5.21E-07
4100	0	0	0	5.88E-13	2.81E-08	1.63E-07	5.03E-07
4527	0	0	0	3.56E-12	4.55E-08	1.86E-07	5.64E-07
4999	0	0	3.22E-20	1.62E-11	6.88E-08	2.00E-07	6.43E-07
5519	0	0	9.39E-19	6.54E-11	9.05E-08	2.21E-07	6.17E-07
6094	0	0	1.82E-17	2.20E-10	1.24E-07	2.41E-07	7.00E-07
6728	0	0	2.86E-16	6.40E-10	1.47E-07	2.39E-07	7.32E-07
7428	0	4.25E-19	3.82E-15	1.61E-09	1.66E-07	2.55E-07	7.72E-07
8202	0	9.84E-18	2.62E-14	3.55E-09	1.70E-07	2.56E-07	7.01E-07
9056	0	2.00E-16	2.16E-13	7.20E-09	1.79E-07	2.79E-07	6.25E-07
9999	0	2.07E-15	1.27E-12	1.27E-08	1.87E-07	2.82E-07	6.66E-07
11039	0	6.22E-15	6.11E-12	1.94E-08	1.89E-07	2.82E-07	6.13E-07
12189	0	5.40E-14	2.81E-11	3.02E-08	1.90E-07	2.69E-07	6.15E-07
13458	0	4.12E-13	1.03E-10	4.09E-08	1.86E-07	2.72E-07	5.94E-07
14859	0	1.99E-12	3.01E-10	5.12E-08	1.80E-07	2.60E-07	5.45E-07
16406	0	7.70E-12	6.47E-10	5.87E-08	1.82E-07	2.65E-07	5.20E-07
18114	0	2.60E-11	1.31E-09	6.26E-08	1.76E-07	2.51E-07	5.32E-07
20000	0	8.47E-11	2.55E-09	6.42E-08	1.68E-07	2.34E-07	5.69E-07

s5HRA1 GW	Species	RWQS (mg/l)					
	Hg	0.001					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0
86	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0
128	0	0	0	0	0	0	0
141	0	0	0	0	0	0	0
156	0	0	0	0	0	0	0
172	0	0	0	0	0	0	0
190	0	0	0	0	0	0	5.28E-20
210	0	0	0	0	0	0	1.24E-18
232	0	0	0	0	0	3.42E-20	2.23E-17
256	0	0	0	0	6.17E-21	8.19E-19	2.95E-16
282	0	0	0	0	1.63E-19	1.37E-17	2.93E-15
300	0	0	0	0	1.07E-18	7.17E-17	1.13E-14
312	0	0	0	0	3.35E-18	1.96E-16	2.58E-14
344	0	0	0	0	4.75E-17	2.01E-15	1.73E-13
380	0	0	0	0	5.76E-16	1.69E-14	9.82E-13
420	0	0	0	1.08E-20	5.59E-15	1.15E-13	4.66E-12
464	0	0	0	3.29E-19	4.16E-14	6.33E-13	1.82E-11
512	0	0	0	6.49E-18	2.47E-13	2.85E-12	5.98E-11
565	0	0	0	9.15E-17	1.28E-12	1.09E-11	1.70E-10
624	0	0	0	1.01E-15	5.59E-12	3.54E-11	4.29E-10
689	0	0	0	8.43E-15	2.04E-11	1.00E-10	9.10E-10
761	0	0	0	5.69E-14	6.31E-11	2.73E-10	1.73E-09
840	0	0	0	3.19E-13	1.62E-10	6.45E-10	3.23E-09
928	0	0	0	1.50E-12	4.04E-10	1.25E-09	5.58E-09
1000	0	0	5.48E-20	4.36E-12	7.21E-10	1.86E-09	7.74E-09
1024	0	0	1.17E-19	6.01E-12	8.73E-10	2.11E-09	8.45E-09
1131	0	0	2.51E-18	2.11E-11	1.66E-09	3.47E-09	1.16E-08
1249	0	0	4.55E-17	6.22E-11	2.74E-09	5.43E-09	1.47E-08
1379	0	0	5.89E-16	1.58E-10	4.38E-09	7.93E-09	1.69E-08
1523	0	1.00E-19	6.00E-15	3.58E-10	6.32E-09	1.07E-08	1.98E-08
1681	0	1.71E-18	4.82E-14	7.14E-10	8.40E-09	1.27E-08	2.60E-08
1856	0	2.90E-17	3.20E-13	1.29E-09	1.01E-08	1.47E-08	2.91E-08
2050	0	3.73E-16	1.67E-12	2.15E-09	1.19E-08	1.75E-08	3.74E-08
2263	0	3.59E-15	6.88E-12	3.19E-09	1.29E-08	1.84E-08	4.87E-08
2499	0	2.69E-14	2.31E-11	4.38E-09	1.37E-08	2.06E-08	7.69E-08
2759	0	1.29E-13	6.39E-11	5.54E-09	1.48E-08	2.36E-08	1.29E-07
3046	0	7.92E-13	1.62E-10	6.20E-09	1.59E-08	2.76E-08	2.15E-07
3363	0	2.58E-12	3.37E-10	6.35E-09	1.73E-08	3.72E-08	3.43E-07
3714	0	1.00E-11	7.03E-10	6.34E-09	1.76E-08	5.42E-08	5.62E-07
4100	0	3.21E-11	1.22E-09	6.23E-09	1.72E-08	8.49E-08	8.10E-07
4527	0	7.34E-11	1.53E-09	6.00E-09	1.82E-08	1.33E-07	9.98E-07
4999	0	1.31E-10	1.40E-09	5.63E-09	1.81E-08	1.85E-07	1.16E-06
5519	0	1.42E-10	1.14E-09	5.13E-09	1.69E-08	2.35E-07	1.42E-06
6094	0	1.06E-10	8.87E-10	4.55E-09	1.61E-08	3.87E-07	1.59E-06
6728	0	6.68E-11	6.50E-10	3.83E-09	1.47E-08	5.61E-07	1.72E-06
7428	0	1.66E-12	4.35E-10	3.13E-09	1.34E-08	6.53E-07	1.83E-06
8202	0	0	2.62E-10	2.50E-09	1.20E-08	6.83E-07	1.96E-06
9056	0	0	1.35E-10	1.94E-09	1.07E-08	9.00E-07	2.28E-06
9999	0	0	7.42E-11	1.47E-09	9.50E-09	9.81E-07	2.61E-06
11039	0	0	3.32E-11	1.08E-09	8.30E-09	1.21E-06	2.92E-06
12189	0	0	1.35E-11	7.69E-10	7.40E-09	1.32E-06	3.37E-06
13458	0	0	4.54E-12	5.26E-10	6.76E-09	1.33E-06	3.74E-06
14859	0	0	1.27E-12	3.54E-10	5.95E-09	1.33E-06	4.17E-06
16406	0	0	1.82E-13	2.33E-10	4.99E-09	1.33E-06	4.23E-06
18114	0	0	1.85E-14	1.47E-10	4.27E-09	1.56E-06	4.43E-06
20000	0	0	0	8.84E-11	3.43E-09	1.57E-06	4.93E-06

s5HRA1 GW	Species	RWQS (mg/l)					
	Ni	0.02					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	2.50E-20
19	0	0	0	0	0	0	2.53E-18
21	0	0	0	0	0	0	9.19E-17
23	0	0	0	0	0	5.84E-21	1.68E-15
26	0	0	0	0	0	2.19E-19	5.57E-14
28	0	0	0	0	0	7.33E-19	3.45E-13
30	0	0	0	0	1.31E-20	7.83E-18	1.65E-12
32	0	0	0	0	4.34E-20	7.35E-17	6.36E-12
35	0	0	0	0	5.11E-19	1.11E-15	3.52E-11
39	0	0	0	0	2.21E-17	2.05E-14	2.26E-10
43	0	0	0	0	4.87E-16	2.30E-13	1.02E-09
47	0	0	0	0	5.75E-15	2.05E-12	3.43E-09
52	0	0	0	0	7.68E-14	1.44E-11	1.14E-08
57	0	0	0	0	6.05E-13	6.73E-11	3.00E-08
64	0	0	0	0	6.69E-12	3.75E-10	8.75E-08
70	0	0	0	1.08E-19	3.38E-11	1.24E-09	1.80E-07
78	0	0	0	5.13E-18	1.93E-10	4.94E-09	3.82E-07
86	0	0	0	1.08E-16	7.87E-10	1.48E-08	6.84E-07
95	0	0	0	1.79E-15	2.94E-09	3.94E-08	1.19E-06
100	0	0	0	6.78E-15	5.45E-09	6.22E-08	1.59E-06
105	0	0	0	2.38E-14	9.15E-09	9.34E-08	2.03E-06
116	0	0	0	2.52E-13	2.52E-08	1.97E-07	3.16E-06
128	0	0	0	2.08E-12	6.31E-08	3.57E-07	4.12E-06
141	0	0	0	1.31E-11	1.37E-07	6.30E-07	5.03E-06
156	0	0	1.79E-19	7.24E-11	2.66E-07	1.00E-06	5.22E-06
172	0	0	1.25E-18	3.13E-10	4.40E-07	1.45E-06	5.04E-06
190	0	0	3.47E-18	1.21E-09	7.08E-07	1.94E-06	5.53E-06
210	0	1.53E-19	1.17E-16	3.90E-09	9.79E-07	2.21E-06	5.54E-06
232	0	4.30E-19	2.35E-15	1.11E-08	1.27E-06	2.39E-06	6.10E-06
256	0	9.35E-19	3.12E-14	2.73E-08	1.55E-06	2.63E-06	6.02E-06
282	0	2.56E-18	3.07E-13	5.88E-08	1.79E-06	2.75E-06	6.71E-06
300	0	1.52E-17	1.17E-12	8.99E-08	1.85E-06	2.79E-06	6.59E-06
312	0	5.38E-17	2.62E-12	1.15E-07	1.89E-06	2.77E-06	6.26E-06
344	0	1.05E-15	1.66E-11	2.05E-07	1.95E-06	2.84E-06	5.61E-06
380	0	1.62E-14	8.38E-11	3.30E-07	2.04E-06	2.86E-06	5.35E-06
420	0	1.90E-13	4.18E-10	4.89E-07	2.11E-06	2.90E-06	4.94E-06
464	0	1.71E-12	1.60E-09	6.47E-07	2.16E-06	2.78E-06	4.70E-06
512	0	1.19E-11	4.74E-09	7.78E-07	2.12E-06	2.74E-06	5.17E-06
565	0	6.72E-11	1.09E-08	8.49E-07	2.02E-06	2.70E-06	5.13E-06
624	0	3.17E-10	2.63E-08	8.93E-07	1.93E-06	2.73E-06	5.04E-06
689	1.81E-18	9.94E-10	4.43E-08	8.98E-07	1.85E-06	2.58E-06	4.55E-06
761	5.02E-17	2.35E-09	6.33E-08	8.54E-07	1.74E-06	2.38E-06	3.98E-06
840	9.86E-16	4.00E-09	6.64E-08	7.95E-07	1.67E-06	2.23E-06	3.38E-06
928	1.45E-14	5.99E-09	8.69E-08	7.49E-07	1.62E-06	2.10E-06	3.57E-06
1000	9.05E-14	7.02E-09	7.50E-08	7.09E-07	1.54E-06	1.98E-06	3.78E-06
1024	1.57E-13	6.54E-09	7.64E-08	6.84E-07	1.54E-06	1.90E-06	3.88E-06
1131	8.66E-13	8.36E-09	6.85E-08	6.00E-07	1.43E-06	1.88E-06	3.63E-06
1249	1.74E-12	6.49E-09	5.10E-08	4.97E-07	1.37E-06	1.82E-06	3.30E-06
1379	2.25E-12	3.92E-09	3.56E-08	4.13E-07	1.32E-06	1.70E-06	3.63E-06
1523	5.60E-12	2.75E-09	2.40E-08	3.44E-07	1.27E-06	1.68E-06	3.44E-06
1681	1.65E-12	1.49E-09	1.31E-08	2.75E-07	1.21E-06	1.64E-06	3.33E-06
1856	5.52E-13	1.16E-09	7.41E-09	2.13E-07	1.13E-06	1.52E-06	3.33E-06
2050	1.69E-13	5.14E-10	3.90E-09	1.63E-07	1.05E-06	1.44E-06	3.24E-06
2263	3.00E-14	1.84E-10	2.03E-09	1.22E-07	9.93E-07	1.40E-06	3.02E-06
2499	4.25E-15	5.43E-11	9.31E-10	9.06E-08	9.41E-07	1.32E-06	2.70E-06
2759	5.06E-16	2.54E-11	4.17E-10	6.37E-08	9.06E-07	1.21E-06	2.43E-06
3046	4.23E-17	6.27E-12	1.68E-10	4.42E-08	8.58E-07	1.16E-06	2.13E-06
3363	4.65E-18	1.37E-12	5.65E-11	3.05E-08	7.70E-07	1.13E-06	1.85E-06
3714	1.47E-18	2.50E-13	1.89E-11	2.00E-08	7.13E-07	1.08E-06	1.72E-06
4100	2.72E-19	4.02E-14	5.77E-12	1.25E-08	6.36E-07	1.01E-06	1.60E-06
4527	1.59E-19	5.30E-15	1.58E-12	7.62E-09	5.55E-07	9.36E-07	1.52E-06
4999	5.65E-20	4.57E-16	3.56E-13	4.49E-09	4.96E-07	8.63E-07	1.46E-06
5519	0	2.47E-17	7.39E-14	2.53E-09	4.46E-07	7.66E-07	1.44E-06
6094	8.27E-20	3.31E-18	1.30E-14	1.35E-09	3.78E-07	6.75E-07	1.31E-06
6728	0	1.01E-18	1.65E-15	7.07E-10	3.03E-07	6.43E-07	1.23E-06
7428	0	1.28E-18	1.98E-16	3.37E-10	2.42E-07	5.58E-07	1.15E-06
8202	0	0	1.66E-17	1.47E-10	1.88E-07	4.87E-07	1.05E-06
9056	0	2.79E-18	1.27E-17	6.42E-11	1.40E-07	4.22E-07	9.47E-07
9999	0	6.77E-18	1.48E-17	2.52E-11	1.03E-07	3.29E-07	8.59E-07
11039	0	5.31E-19	1.07E-17	9.12E-12	7.49E-08	2.70E-07	8.17E-07
12189	0	0	3.56E-18	2.98E-12	5.20E-08	2.11E-07	7.59E-07
13458	0	0	7.13E-19	8.86E-13	3.65E-08	1.58E-07	7.04E-07
14859	0	0	1.76E-18	2.46E-13	2.35E-08	1.23E-07	6.15E-07
16406	0	4.31E-17	8.65E-17	5.71E-14	1.42E-08	9.10E-08	5.36E-07
18114	0	1.47E-20	1.02E-19	1.23E-14	8.71E-09	6.51E-08	4.58E-07
20000	0	0	0	2.20E-15	4.87E-09	4.90E-08	3.84E-07

s5HRA1 GW	Species	RWQS (mg/l)					
	SO4	250					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	4.63E-09	1.51E-08	1.58E-06
2	8.87E-06	0.00232225	0.00333769	0.00586826	0.0107199	0.0119448	0.0139392
3	0.00129898	0.0594369	0.0860444	0.15139	0.273965	0.307649	0.377285
4	0.0283976	0.257121	0.307024	0.524606	0.958367	1.10987	1.31625
5	0.17675	0.329862	0.372596	0.697188	1.60218	1.92471	2.47253
6	0.245033	0.29961	0.334592	0.647912	2.01812	2.57713	3.48181
7	0.225155	0.266883	0.295969	0.582368	2.19842	2.92772	4.25024
8	0.204194	0.240053	0.26731	0.530247	2.30292	3.2494	4.7336
9	0.184901	0.220121	0.24503	0.483811	2.34424	3.40523	5.16103
10	0.161585	0.195931	0.217645	0.431738	2.25424	3.54532	5.87175
11	0.140876	0.166375	0.186606	0.373384	2.12134	3.5378	5.73551
13	0.12198	0.145923	0.162568	0.322453	1.69235	3.29898	6.03766
14	0.112328	0.13455	0.150292	0.297814	1.57399	3.09793	6.12882
16	0.094188	0.114993	0.128939	0.253104	1.33281	2.81072	6.09472
17	0.0820004	0.0991481	0.111886	0.223322	1.23154	2.64622	6.29066
19	0.0666872	0.0804541	0.0908439	0.18157	1.03631	2.28159	5.94685
21	0.0566101	0.0689277	0.0768044	0.155012	0.859754	1.94256	5.68884
23	0.0492583	0.0600227	0.0675298	0.135954	0.743153	1.66549	5.09946
26	0.0403146	0.0489604	0.0551183	0.110519	0.593102	1.30574	4.28759
28	0.0318251	0.0385976	0.0435368	0.088136	0.500073	1.11633	3.80703
30	0.0240421	0.0286562	0.0327421	0.0669189	0.394983	0.927225	3.37793
32	0.0183028	0.0216699	0.0249959	0.0513303	0.310186	0.750673	3.04321
35	0.0140501	0.0164588	0.0190842	0.039353	0.220111	0.535782	2.55208
39	0.011136	0.0129327	0.0149052	0.0311856	0.162907	0.362573	1.98245
43	0.00863917	0.0102027	0.0117435	0.0247746	0.127638	0.268684	1.5453
47	0.00640619	0.00760648	0.00880143	0.0186851	0.0959352	0.20697	1.21346
52	0.0042942	0.0051433	0.00599512	0.0127177	0.0659815	0.144332	0.895744
57	0.00270062	0.00327315	0.00384045	0.00838779	0.0435711	0.0976387	0.658124
64	0.00164286	0.0020221	0.00236695	0.0052119	0.0259418	0.0558179	0.422386
70	0.000991033	0.0012494	0.00143735	0.00325578	0.0166846	0.0359012	0.290888
78	0.000633221	0.000814872	0.000945217	0.00218509	0.0108521	0.0214312	0.177705
86	0.000319138	0.000423693	0.00049117	0.00118718	0.00598564	0.0117713	0.109487
95	0.000179295	0.000240144	0.000277827	0.000690009	0.00336562	0.00637774	0.0633936
100	8.92E-05	0.00012274	0.000142177	0.000368821	0.00197939	0.00414471	0.0471089
105	3.22E-05	4.37E-05	5.17E-05	0.000140235	0.000861092	0.00201154	0.0341138
116	1.05E-05	1.45E-05	1.73E-05	4.95E-05	0.000262148	0.000513996	0.0158693
128	4.50E-06	6.30E-06	7.48E-06	2.28E-05	0.000116946	0.000207287	0.00717594
141	1.98E-06	2.85E-06	3.43E-06	1.13E-05	5.55E-05	9.69E-05	0.00317647
156	1.03E-06	1.50E-06	1.83E-06	6.42E-06	3.09E-05	5.17E-05	0.00130309
172	4.94E-07	7.24E-07	9.01E-07	3.27E-06	1.58E-05	2.74E-05	0.000527221
190	1.64E-07	2.47E-07	3.11E-07	1.21E-06	5.87E-06	1.05E-05	0.000192045
210	3.77E-08	5.72E-08	7.30E-08	3.19E-07	1.65E-06	2.78E-06	6.16E-05
232	7.55E-09	1.18E-08	1.56E-08	7.22E-08	3.93E-07	6.97E-07	1.77E-05
256	9.50E-10	1.71E-09	2.47E-09	1.35E-08	8.05E-08	1.47E-07	4.56E-06
282	5.25E-11	1.50E-10	2.41E-10	1.95E-09	1.33E-08	2.76E-08	1.07E-06
300	0	1.58E-12	1.72E-11	2.43E-10	1.77E-09	3.87E-09	3.89E-07
312	0	0	0	2.51E-11	1.87E-10	3.93E-10	2.00E-07
344	0	0	0	5.02E-12	4.52E-11	9.49E-11	3.70E-08
380	0	0	2.29E-13	1.31E-12	1.01E-11	2.39E-11	5.73E-09
420	0	1.00E-14	3.64E-14	3.63E-13	2.94E-12	7.08E-12	7.38E-10
464	1.01E-15	1.69E-14	3.01E-14	1.67E-13	1.00E-12	2.13E-12	7.96E-11
512	0	1.40E-15	8.74E-15	5.81E-14	3.41E-13	7.49E-13	8.56E-12
565	0	0	0	2.87E-14	1.78E-13	4.40E-13	2.06E-12
624	0	0	4.71E-16	3.10E-14	1.49E-13	2.51E-13	1.13E-12
689	0	2.29E-14	3.66E-14	1.10E-13	5.17E-13	1.06E-12	3.12E-12
761	0	0	0	9.09E-14	6.98E-13	1.42E-12	3.47E-12
840	0	0	0	0	5.44E-13	1.06E-12	3.52E-12
928	0	0	0	4.61E-14	3.29E-12	7.15E-12	2.78E-11
1000	0	0	0	6.32E-13	4.32E-12	8.55E-12	2.11E-11
1024	5.87E-13	1.02E-12	1.28E-12	3.05E-12	1.42E-11	2.64E-11	6.28E-11
1131	6.42E-13	1.01E-12	1.25E-12	2.79E-12	1.38E-11	2.24E-11	7.52E-11
1249	4.09E-13	5.96E-13	7.43E-13	1.65E-12	7.98E-12	1.38E-11	3.98E-11
1379	5.92E-14	1.16E-13	1.47E-13	3.65E-13	1.63E-12	3.24E-12	7.74E-12
1523	0	6.73E-16	1.57E-15	1.12E-14	6.88E-14	1.30E-13	3.58E-13
1681	0	1.05E-15	3.48E-15	1.45E-14	7.78E-14	1.37E-13	4.10E-13
1856	2.12E-15	6.12E-15	8.59E-15	2.61E-14	1.41E-13	2.56E-13	6.41E-13
2050	0	6.19E-15	9.14E-15	2.61E-14	1.29E-13	2.52E-13	7.24E-13
2263	0	0	3.88E-16	6.85E-15	3.66E-14	6.88E-14	1.84E-13
2499	0	0	0	0	2.41E-15	6.08E-15	2.40E-14
2759	0	0	0	4.66E-16	3.61E-15	7.55E-15	3.11E-14
3046	0	0	0	3.16E-16	3.20E-15	6.30E-15	2.22E-14
3363	2.64E-16	7.44E-16	1.05E-15	2.94E-15	1.40E-14	2.51E-14	7.34E-14
3714	1.82E-15	2.68E-15	3.31E-15	6.87E-15	3.30E-14	6.35E-14	1.90E-13
4100	2.95E-15	4.10E-15	5.00E-15	1.05E-14	4.99E-14	9.60E-14	2.52E-13
4527	2.64E-15	4.24E-15	5.54E-15	1.24E-14	5.83E-14	1.05E-13	2.59E-13
4999	0	0	0	1.77E-15	1.87E-14	3.69E-14	1.59E-13
5519	0	0	0	0	0	6.48E-16	6.15E-14
6094	0	0	0	1.43E-14	8.56E-14	1.67E-13	5.81E-13
6728	0	1.06E-14	1.81E-14	5.69E-14	2.72E-13	4.89E-13	1.86E-12
7428	0	0	1.89E-14	1.05E-13	4.97E-13	8.52E-13	3.34E-12
8202	0	7.83E-16	9.08E-14	3.44E-13	1.59E-12	2.96E-12	9.21E-12
9056	0	0	0	4.83E-13	2.61E-12	4.65E-12	1.81E-11
9999	0	0	2.86E-13	2.23E-12	1.15E-11	2.15E-11	6.10E-11
11039	1.78E-12	2.79E-12	3.37E-12	7.32E-12	3.45E-11	5.97E-11	1.55E-10
12189	2.14E-12	3.01E-12	3.51E-12	7.86E-12	3.60E-11	6.14E-11	1.69E-10
13458	9.09E-13	1.47E-12	1.97E-12	4.61E-12	2.24E-11	3.97E-11	1.06E-10
14859	1.48E-13	4.58E-13	6.68E-13	1.94E-12	9.12E-12	1.66E-11	4.17E-11
16406	0	5.07E-14	9.94E-14	3.85E-13	1.76E-12	2.98E-12	9.31E-12
18114	0	0	0	0	0	3.56E-15	4.39E-14
20000	0	0	0	0	7.18E-15	1.55E-14	6.13E-14

s5HRA1 GW	Species	RWQS (mg/l)					
	Zn	5					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	1.94E-20
8	0	0	0	0	0	0	9.83E-20
9	0	0	0	0	0	0	1.99E-17
10	0	0	0	0	0	0	8.58E-16
11	0	0	0	0	0	0	1.85E-14
13	0	0	0	0	0	0	2.24E-12
14	0	0	0	0	0	5.27E-21	1.50E-11
16	0	0	0	0	0	3.83E-18	2.53E-10
17	0	0	0	0	4.35E-21	1.90E-17	7.97E-10
19	0	0	0	0	4.04E-20	1.14E-15	5.75E-09
21	0	0	0	0	9.31E-19	2.43E-14	2.86E-08
23	0	0	0	0	5.89E-18	3.41E-13	1.04E-07
26	0	0	0	0	2.90E-16	6.48E-12	4.77E-07
28	0	0	0	0	2.48E-15	3.22E-11	9.98E-07
30	0	0	0	0	2.65E-14	1.25E-10	1.95E-06
32	0	0	0	0	1.72E-13	3.92E-10	3.54E-06
35	0	0	0	0	1.56E-12	1.77E-09	7.39E-06
39	0	0	0	0	1.60E-11	9.26E-09	1.41E-05
43	0	0	0	0	1.01E-10	3.34E-08	2.06E-05
47	0	0	0	4.54E-20	4.55E-10	9.19E-08	2.72E-05
52	0	0	0	9.25E-19	2.29E-09	2.54E-07	3.47E-05
57	0	0	0	2.36E-17	8.50E-09	5.75E-07	4.08E-05
64	0	0	0	1.03E-15	4.00E-08	1.40E-06	3.52E-05
70	0	0	0	1.39E-14	1.14E-07	2.47E-06	3.10E-05
78	0	0	0	2.29E-13	3.08E-07	4.52E-06	3.77E-05
86	0	0	0	2.23E-12	6.94E-07	6.85E-06	4.21E-05
95	0	0	0	1.80E-11	1.32E-06	1.02E-05	4.30E-05
100	0	0	2.17E-19	4.84E-11	1.78E-06	1.14E-05	4.24E-05
105	0	0	4.92E-19	1.17E-10	2.41E-06	1.26E-05	4.19E-05
116	0	0	4.76E-18	6.31E-10	4.24E-06	1.58E-05	4.27E-05
128	0	2.89E-20	2.58E-17	2.66E-09	5.70E-06	1.74E-05	4.25E-05
141	0	3.14E-19	2.22E-16	9.62E-09	8.15E-06	1.74E-05	4.26E-05
156	0	4.44E-18	5.30E-15	3.22E-08	1.02E-05	1.80E-05	4.14E-05
172	0	1.25E-17	7.37E-14	8.75E-08	1.07E-05	1.83E-05	4.27E-05
190	0	2.58E-17	8.05E-13	2.13E-07	1.15E-05	1.78E-05	4.56E-05
210	4.32E-19	1.11E-16	7.30E-12	4.56E-07	1.31E-05	1.76E-05	4.10E-05
232	4.52E-19	2.22E-15	5.57E-11	8.97E-07	1.34E-05	1.75E-05	3.76E-05
256	2.81E-19	3.74E-14	3.27E-10	1.49E-06	1.35E-05	1.76E-05	3.82E-05
282	2.96E-19	4.54E-13	1.45E-09	2.28E-06	1.37E-05	1.83E-05	3.97E-05
300	3.55E-19	1.95E-12	3.15E-09	2.83E-06	1.34E-05	1.78E-05	3.75E-05
312	3.64E-19	4.67E-12	5.12E-09	3.19E-06	1.34E-05	1.79E-05	3.38E-05
344	3.87E-19	2.48E-11	1.61E-08	3.79E-06	1.31E-05	1.69E-05	3.80E-05
380	3.58E-19	1.06E-10	4.16E-08	4.27E-06	1.25E-05	1.67E-05	4.14E-05
420	2.44E-19	5.01E-10	7.89E-08	4.75E-06	1.22E-05	1.65E-05	4.15E-05
464	5.86E-19	7.17E-10	1.81E-07	4.80E-06	1.12E-05	1.62E-05	4.06E-05
512	1.06E-18	2.74E-09	2.43E-07	4.76E-06	1.09E-05	1.51E-05	3.50E-05
565	2.82E-17	5.90E-09	3.20E-07	4.58E-06	1.06E-05	1.44E-05	3.22E-05
624	5.38E-16	1.19E-08	3.07E-07	4.42E-06	1.07E-05	1.36E-05	3.16E-05
689	7.80E-16	1.43E-08	2.26E-07	4.15E-06	9.88E-06	1.30E-05	2.83E-05
761	7.23E-15	1.50E-08	1.77E-07	3.74E-06	9.55E-06	1.25E-05	2.49E-05
840	5.60E-14	1.08E-08	1.37E-07	3.47E-06	9.17E-06	1.19E-05	2.17E-05
928	9.12E-14	7.22E-09	9.31E-08	3.02E-06	8.58E-06	1.15E-05	1.94E-05
1000	3.84E-13	3.48E-09	7.18E-08	2.57E-06	8.14E-06	1.14E-05	1.83E-05
1024	3.59E-13	2.72E-09	6.03E-08	2.46E-06	8.10E-06	1.14E-05	1.81E-05
1131	8.75E-14	8.89E-10	3.38E-08	1.99E-06	7.81E-06	1.06E-05	1.75E-05
1249	7.73E-15	7.16E-10	1.34E-08	1.58E-06	7.32E-06	9.91E-06	1.75E-05
1379	2.68E-15	3.04E-10	7.61E-09	1.22E-06	7.02E-06	9.65E-06	1.84E-05
1523	8.35E-15	1.07E-10	3.23E-09	9.43E-07	6.59E-06	9.02E-06	1.68E-05
1681	3.85E-16	3.02E-11	1.72E-09	6.84E-07	6.17E-06	8.43E-06	1.60E-05
1856	1.37E-16	7.35E-12	6.29E-10	4.84E-07	5.63E-06	7.94E-06	1.56E-05
2050	1.43E-17	1.49E-12	1.67E-10	3.37E-07	5.33E-06	7.67E-06	1.48E-05
2263	4.85E-18	3.25E-13	7.15E-11	2.41E-07	4.87E-06	7.32E-06	1.46E-05
2499	2.19E-18	4.71E-14	1.82E-11	1.62E-07	4.59E-06	7.24E-06	1.49E-05
2759	6.18E-19	6.13E-15	3.90E-12	1.07E-07	4.05E-06	6.70E-06	1.41E-05
3046	4.25E-20	7.22E-16	6.75E-13	6.79E-08	3.46E-06	6.13E-06	1.32E-05
3363	3.87E-20	5.79E-17	1.20E-13	4.14E-08	2.97E-06	5.94E-06	1.24E-05
3714	4.10E-20	1.36E-17	1.94E-14	2.45E-08	2.53E-06	5.49E-06	1.14E-05
4100	2.12E-19	3.15E-18	1.82E-15	1.37E-08	2.16E-06	4.72E-06	1.08E-05
4527	0	1.67E-18	1.18E-16	7.26E-09	1.91E-06	4.07E-06	1.08E-05
4999	0	1.05E-18	2.96E-17	3.66E-09	1.71E-06	3.79E-06	9.76E-06
5519	0	7.47E-19	6.71E-18	1.79E-09	1.36E-06	3.41E-06	9.35E-06
6094	0	7.81E-19	3.15E-18	8.07E-10	1.05E-06	3.21E-06	8.81E-06
6728	0	3.10E-19	2.57E-18	3.33E-10	8.03E-07	2.79E-06	8.04E-06
7428	0	4.04E-19	5.23E-18	1.22E-10	6.30E-07	2.25E-06	7.23E-06
8202	0	0	4.36E-18	4.39E-11	4.69E-07	1.90E-06	6.39E-06
9056	0	3.12E-18	1.43E-17	1.49E-11	3.43E-07	1.53E-06	5.74E-06
9999	0	0	1.30E-17	4.32E-12	2.45E-07	1.24E-06	5.71E-06
11039	0	0	2.22E-18	1.22E-12	1.72E-07	9.84E-07	5.34E-06
12189	0	0	1.32E-19	2.72E-13	1.14E-07	7.54E-07	4.74E-06
13458	0	0	0	5.51E-14	7.59E-08	5.47E-07	4.37E-06
14859	0	2.90E-20	2.68E-17	1.18E-14	4.92E-08	4.04E-07	3.98E-06
16406	2.18E-17	3.44E-16	5.34E-16	4.76E-15	3.05E-08	2.98E-07	3.59E-06
18114	0	5.39E-20	2.23E-19	2.95E-16	1.82E-08	2.12E-07	3.35E-06
20000	0	0	0	2.98E-17	1.07E-08	1.47E-07	2.93E-06

rHRA1 GW	Species	RWQS (mg/l)					
	NH3-	0.5					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1.40E-20
2	0	0	0	0	2.37E-16	3.20E-15	1.93E-14
3	0	0	0	7.90E-20	9.29E-14	1.86E-12	1.96E-11
4	0	0	0	3.15E-18	2.16E-11	4.05E-10	3.31E-09
5	0	0	0	7.37E-15	4.41E-09	6.42E-08	3.33E-07
6	0	0	0	6.32E-11	9.68E-07	4.96E-06	1.68E-05
7	2.74E-16	3.23E-14	3.50E-10	3.72E-05	0.000270454	0.000379285	0.000515788
8	2.93E-16	1.62E-09	1.01E-06	0.000282683	0.000674476	0.000820449	0.00106021
9	1.32E-14	2.03E-07	2.31E-05	0.000508268	0.000916025	0.00103917	0.0013157
10	1.12E-11	3.20E-06	9.25E-05	0.000627497	0.00105395	0.00120937	0.00153796
11	7.30E-10	1.71E-05	0.000215277	0.000664481	0.00115804	0.00134262	0.00177337
13	8.67E-08	0.000111509	0.000367683	0.000670661	0.00123345	0.00157354	0.00217867
14	4.15E-07	0.000203927	0.000346263	0.000662787	0.00129811	0.00162271	0.00235794
16	3.75E-06	0.000249437	0.000297276	0.000589889	0.00138942	0.00169852	0.00258937
17	8.87E-06	0.000227964	0.000272499	0.000558962	0.00140315	0.00172953	0.00274259
19	2.97E-05	0.000182338	0.000215396	0.000473023	0.00137787	0.00171716	0.00290997
21	6.84E-05	0.000145174	0.000172239	0.000397244	0.00134437	0.00172103	0.00287757
23	7.84E-05	0.000112177	0.000131639	0.000325192	0.00131565	0.0017108	0.00280724
26	6.02E-05	7.71E-05	9.09E-05	0.000236412	0.00125907	0.00168244	0.00282053
28	4.40E-05	5.87E-05	6.89E-05	0.000191297	0.00126258	0.00170009	0.00281932
30	3.33E-05	4.46E-05	5.22E-05	0.000152524	0.00121891	0.0016409	0.00267865
32	2.34E-05	3.22E-05	3.81E-05	0.000118405	0.00115722	0.00158573	0.00271025
35	1.39E-05	1.94E-05	2.30E-05	7.85E-05	0.00108282	0.00154712	0.00263726
39	8.41E-06	1.14E-05	1.37E-05	4.67E-05	0.000931996	0.00145837	0.00247171
43	4.43E-06	6.17E-06	7.58E-06	2.82E-05	0.00079108	0.00132717	0.00232653
47	2.63E-06	3.78E-06	4.55E-06	1.71E-05	0.000632527	0.00127039	0.00219965
52	1.58E-06	2.24E-06	2.69E-06	9.95E-06	0.000506054	0.00113112	0.00218875
57	9.88E-07	1.43E-06	1.68E-06	6.12E-06	0.000406836	0.000946517	0.00214625
64	4.89E-07	7.11E-07	8.46E-07	3.09E-06	0.000311331	0.000738548	0.00211151
70	2.09E-07	3.21E-07	3.86E-07	1.59E-06	0.000232059	0.000630316	0.0021942
78	8.29E-08	1.24E-07	1.53E-07	6.61E-07	0.000163932	0.000493907	0.001863
86	3.34E-08	5.10E-08	6.25E-08	2.87E-07	0.000110637	0.000388891	0.00161444
95	1.10E-08	1.70E-08	2.08E-08	1.06E-07	7.36E-05	0.000299321	0.00144161
100	4.09E-09	6.95E-09	9.34E-09	5.41E-08	5.93E-05	0.000259687	0.0013064
105	1.10E-09	2.03E-09	2.96E-09	2.37E-08	4.79E-05	0.000225827	0.00129723
116	2.69E-10	4.37E-10	5.83E-10	4.87E-09	3.04E-05	0.000167386	0.00117565
128	7.48E-11	1.17E-10	1.42E-10	1.07E-09	1.89E-05	0.000121415	0.00102187
141	2.49E-11	3.89E-11	4.59E-11	2.81E-10	1.16E-05	8.84E-05	0.000876723
156	6.31E-12	1.39E-11	1.78E-11	8.98E-11	6.74E-06	6.13E-05	0.000735356
172	0	5.74E-14	1.22E-12	2.29E-11	3.85E-06	4.16E-05	0.0006113
190	0	2.48E-14	5.97E-14	1.13E-12	1.99E-06	2.75E-05	0.000498781
210	0	0	3.12E-15	1.46E-13	9.68E-07	1.76E-05	0.000400235
232	0	2.81E-15	1.64E-14	1.65E-13	4.46E-07	1.10E-05	0.000316394
256	5.99E-15	8.94E-15	1.09E-14	3.87E-14	1.95E-07	6.57E-06	0.000246771
282	4.94E-16	1.04E-15	1.46E-15	1.18E-14	8.20E-08	3.64E-06	0.000190125
300	9.68E-16	1.25E-15	1.45E-15	4.61E-15	4.55E-08	2.52E-06	0.000159463
312	0	6.50E-17	1.14E-16	6.44E-16	3.09E-08	2.01E-06	0.000141714
344	0	0	0	2.18E-17	1.11E-08	1.10E-06	9.96E-05
380	0	0	0	9.49E-17	3.54E-09	5.70E-07	7.24E-05
420	0	4.25E-18	9.35E-18	8.06E-17	1.01E-09	2.70E-07	5.14E-05
464	5.55E-18	9.94E-18	1.37E-17	5.87E-17	2.55E-10	1.14E-07	3.57E-05
512	0	0	0	3.43E-18	5.46E-11	4.54E-08	2.42E-05
565	0	0	0	0	1.01E-11	1.66E-08	1.56E-05
624	0	0	0	3.99E-17	1.57E-12	5.86E-09	9.64E-06
689	0	1.06E-17	2.78E-17	1.48E-16	2.16E-13	1.91E-09	5.73E-06
761	0	0	7.23E-17	5.03E-16	2.80E-14	5.61E-10	3.27E-06
840	0	0	2.96E-16	1.84E-15	1.33E-14	1.49E-10	1.79E-06
928	0	1.02E-15	1.33E-15	3.27E-15	2.84E-14	3.43E-11	9.26E-07
1000	1.22E-16	1.24E-15	1.59E-15	3.99E-15	2.51E-14	6.86E-12	5.45E-07
1024	0	0	7.61E-19	1.58E-16	1.09E-14	5.23E-12	4.58E-07
1131	0	0	0	3.24E-17	4.74E-15	1.31E-12	2.12E-07
1249	0	2.39E-16	8.41E-16	3.77E-15	2.29E-14	2.38E-13	9.20E-08
1379	5.07E-18	2.22E-15	2.81E-15	6.23E-15	3.21E-14	1.01E-13	3.72E-08
1523	0	0	0	9.62E-18	4.55E-17	1.94E-15	1.38E-08
1681	0	0	3.22E-18	1.10E-17	5.65E-17	1.41E-16	4.74E-09
1856	0	0	1.99E-18	7.97E-18	5.10E-17	1.58E-16	1.47E-09
2050	0	0	2.73E-18	1.73E-17	9.93E-17	2.86E-16	4.08E-10
2263	0	5.92E-19	3.14E-18	1.52E-17	8.32E-17	1.61E-16	1.01E-10
2499	0	0	0	2.70E-18	2.55E-17	5.62E-17	2.19E-11
2759	0	0	0	0	3.98E-18	1.06E-17	4.13E-12
3046	0	0	0	0	2.63E-18	7.50E-18	6.82E-13
3363	0	0	0	2.71E-19	5.10E-18	2.10E-17	8.99E-14
3714	0	0	0	3.63E-18	1.91E-17	3.81E-17	1.14E-14
4100	0	2.36E-18	3.72E-18	1.14E-17	4.92E-17	9.02E-17	1.99E-15
4527	0	0	3.09E-18	1.45E-17	6.62E-17	1.19E-16	4.44E-16
4999	0	0	0	0	4.35E-18	1.23E-17	6.97E-17
5519	0	0	0	0	2.11E-17	4.25E-17	1.97E-16
6094	0	0	0	7.99E-18	9.28E-17	1.68E-16	5.93E-16
6728	0	0	0	1.14E-16	5.88E-16	1.05E-15	2.89E-15
7428	0	0	0	1.19E-16	1.24E-15	2.41E-15	8.80E-15
8202	0	3.83E-16	5.86E-16	1.55E-15	8.06E-15	1.29E-14	3.40E-14
9056	0	0	0	8.19E-16	4.61E-15	7.93E-15	1.90E-14
9999	1.19E-15	3.85E-15	5.20E-15	1.21E-14	5.49E-14	9.49E-14	2.39E-13
11039	0	0	2.29E-19	8.61E-15	5.03E-14	9.70E-14	4.21E-13
12189	0	1.24E-19	1.51E-18	7.72E-15	3.82E-14	6.28E-14	2.43E-13
13458	0	2.21E-19	4.08E-17	5.83E-15	2.98E-14	5.13E-14	1.41E-13
14859	1.82E-15	4.89E-15	6.22E-15	1.35E-14	5.99E-14	1.01E-13	2.95E-13
16406	1.84E-17	1.27E-15	2.00E-15	6.35E-15	2.89E-14	5.09E-14	1.45E-13
18114	0	0	0	0	1.11E-17	3.40E-17	2.98E-16
20000	0	0	0	3.28E-18	6.83E-17	1.05E-16	5.16E-16

rHRA1 GW	Species	RWQS (mg/l)					
	As	0.01					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	6.25E-20
10	0	0	0	0	0	4.94E-20	6.38E-18
11	0	0	0	0	5.55E-20	2.68E-18	2.13E-16
13	0	0	0	0	3.77E-17	9.67E-16	4.15E-14
14	0	0	0	0	5.12E-16	1.03E-14	3.28E-13
16	0	0	0	1.27E-19	3.55E-14	4.34E-13	9.00E-12
17	0	0	0	1.52E-18	1.80E-13	1.90E-12	3.25E-11
19	0	0	0	9.24E-17	2.84E-12	2.22E-11	2.66E-10
21	0	0	0	2.70E-15	2.62E-11	1.60E-10	1.46E-09
23	0	0	0	3.99E-14	1.55E-10	7.78E-10	5.89E-09
26	0	0	3.37E-20	1.01E-12	1.29E-09	5.31E-09	3.16E-08
28	0	0	5.65E-20	5.56E-12	3.99E-09	1.50E-08	7.68E-08
30	0	3.86E-20	2.75E-19	2.43E-11	1.05E-08	3.54E-08	1.63E-07
32	0	3.95E-20	7.35E-19	8.75E-11	2.46E-08	7.47E-08	2.99E-07
35	0	1.94E-19	3.94E-18	4.44E-10	7.28E-08	1.86E-07	6.72E-07
39	0	2.26E-19	7.25E-17	2.52E-09	2.18E-07	4.96E-07	1.57E-06
43	0	5.25E-19	1.76E-15	1.03E-08	5.25E-07	1.07E-06	3.05E-06
47	0	1.32E-18	2.50E-14	3.16E-08	1.05E-06	1.93E-06	5.05E-06
52	0	1.08E-17	3.79E-13	9.99E-08	2.11E-06	3.54E-06	8.24E-06
57	0	2.47E-16	3.71E-12	2.47E-07	3.65E-06	5.66E-06	1.15E-05
64	0	9.31E-15	4.85E-11	6.62E-07	6.47E-06	9.51E-06	1.65E-05
70	0	1.15E-13	2.85E-10	1.30E-06	9.48E-06	1.34E-05	2.12E-05
78	0	1.76E-12	1.74E-09	2.63E-06	1.38E-05	1.74E-05	2.69E-05
86	0	1.57E-11	7.23E-09	4.39E-06	1.82E-05	2.18E-05	3.29E-05
95	1.98E-19	1.16E-10	2.62E-08	6.91E-06	2.25E-05	2.67E-05	3.58E-05
100	1.55E-16	2.96E-10	4.79E-08	8.52E-06	2.46E-05	2.85E-05	3.73E-05
105	1.81E-16	6.89E-10	8.34E-08	1.02E-05	2.65E-05	3.01E-05	3.87E-05
116	3.16E-16	3.35E-09	2.44E-07	1.37E-05	2.96E-05	3.42E-05	4.12E-05
128	5.36E-15	1.35E-08	5.98E-07	1.72E-05	3.19E-05	3.66E-05	4.42E-05
141	8.42E-14	4.54E-08	1.32E-06	2.01E-05	3.32E-05	3.80E-05	4.82E-05
156	1.12E-12	1.40E-07	2.63E-06	2.18E-05	3.41E-05	3.91E-05	5.19E-05
172	1.05E-11	3.63E-07	4.75E-06	2.27E-05	3.54E-05	4.05E-05	5.61E-05
190	8.07E-11	8.52E-07	7.61E-06	2.26E-05	3.71E-05	4.34E-05	5.58E-05
210	5.04E-10	1.83E-06	9.92E-06	2.16E-05	3.78E-05	4.42E-05	5.66E-05
232	2.56E-09	3.37E-06	8.96E-06	2.03E-05	3.81E-05	4.54E-05	5.98E-05
256	1.07E-08	5.14E-06	7.51E-06	1.84E-05	3.82E-05	4.62E-05	6.26E-05
282	3.71E-08	4.06E-06	6.07E-06	1.60E-05	3.78E-05	4.61E-05	6.35E-05
300	7.61E-08	3.60E-06	5.04E-06	1.45E-05	3.79E-05	4.57E-05	6.31E-05
312	1.17E-07	3.13E-06	4.51E-06	1.37E-05	3.79E-05	4.52E-05	6.41E-05
344	3.09E-07	2.11E-06	3.18E-06	1.12E-05	3.72E-05	4.44E-05	6.67E-05
380	6.32E-07	1.39E-06	2.03E-06	8.71E-06	3.60E-05	4.23E-05	6.46E-05
420	4.22E-07	8.04E-07	1.23E-06	6.65E-06	3.42E-05	4.17E-05	6.33E-05
464	2.31E-07	4.63E-07	7.22E-07	4.84E-06	3.22E-05	4.28E-05	6.17E-05
512	1.12E-07	2.53E-07	4.13E-07	3.37E-06	3.00E-05	3.97E-05	6.00E-05
565	5.63E-08	1.19E-07	2.32E-07	2.37E-06	2.94E-05	3.81E-05	5.73E-05
624	2.54E-08	5.89E-08	1.20E-07	1.60E-06	2.84E-05	3.75E-05	5.61E-05
689	1.06E-08	2.57E-08	5.64E-08	1.05E-06	2.57E-05	3.50E-05	5.37E-05
761	3.94E-09	1.05E-08	2.72E-08	6.62E-07	2.37E-05	3.41E-05	5.29E-05
840	1.24E-09	4.21E-09	1.13E-08	4.08E-07	2.15E-05	3.21E-05	5.27E-05
928	3.52E-10	1.56E-09	4.25E-09	2.43E-07	1.85E-05	3.06E-05	4.84E-05
1000	1.29E-10	7.04E-10	2.05E-09	1.61E-07	1.63E-05	2.99E-05	4.68E-05
1024	9.25E-11	5.31E-10	1.59E-09	1.41E-07	1.54E-05	2.87E-05	4.64E-05
1131	2.21E-11	1.53E-10	5.36E-10	7.77E-08	1.25E-05	2.65E-05	4.85E-05
1249	4.81E-12	4.21E-11	1.62E-10	4.11E-08	1.00E-05	2.46E-05	4.78E-05
1379	9.84E-13	1.03E-11	4.76E-11	2.13E-08	7.89E-06	2.22E-05	4.56E-05
1523	3.64E-13	2.30E-12	1.25E-11	1.01E-08	6.35E-06	1.91E-05	4.43E-05
1681	6.68E-14	4.63E-13	2.98E-12	4.51E-09	5.04E-06	1.63E-05	4.25E-05
1856	1.11E-14	8.73E-14	5.64E-13	1.87E-09	3.64E-06	1.35E-05	4.00E-05
2050	8.68E-16	1.31E-14	9.36E-14	7.19E-10	2.73E-06	1.08E-05	3.69E-05
2263	5.35E-17	3.04E-15	1.86E-14	2.59E-10	1.91E-06	8.91E-06	3.57E-05
2499	5.95E-18	1.79E-16	1.78E-15	8.37E-11	1.34E-06	6.98E-06	3.17E-05
2759	0	2.21E-17	2.10E-16	2.49E-11	9.26E-07	5.51E-06	2.83E-05
3046	0	5.79E-18	2.86E-17	6.69E-12	6.17E-07	4.09E-06	2.50E-05
3363	0	1.15E-18	5.71E-18	1.57E-12	4.07E-07	2.98E-06	2.10E-05
3714	0	5.17E-19	1.74E-18	3.22E-13	2.58E-07	2.14E-06	1.79E-05
4100	0	2.75E-19	8.23E-19	5.71E-14	1.60E-07	1.51E-06	1.55E-05
4527	0	5.60E-20	3.27E-19	8.63E-15	9.70E-08	1.04E-06	1.34E-05
4999	0	0	0	1.08E-15	5.74E-08	7.06E-07	1.14E-05
5519	0	0	2.47E-19	1.14E-16	3.18E-08	4.64E-07	8.97E-06
6094	0	2.12E-19	6.99E-19	1.28E-17	1.62E-08	2.96E-07	6.93E-06
6728	0	0	0	9.63E-18	7.83E-09	1.82E-07	5.56E-06
7428	0	0	0	2.28E-17	3.56E-09	1.08E-07	4.39E-06
8202	0	0	0	2.63E-17	1.56E-09	6.20E-08	3.40E-06
9056	0	0	0	6.44E-17	6.39E-10	3.51E-08	2.60E-06
9999	0	0	0	5.36E-18	2.42E-10	1.80E-08	1.94E-06
11039	0	0	0	4.31E-17	8.40E-11	8.64E-09	1.43E-06
12189	0	0	0	5.04E-17	2.63E-11	3.95E-09	1.02E-06
13458	0	0	0	1.32E-16	7.50E-12	1.71E-09	7.17E-07
14859	0	0	0	1.49E-16	1.90E-12	7.00E-10	4.89E-07
16406	0	1.19E-17	1.25E-16	6.07E-16	4.16E-13	2.68E-10	3.25E-07
18114	0	0	4.69E-21	4.41E-19	7.15E-14	9.43E-11	2.09E-07
20000	0	0	0	1.26E-18	1.19E-14	3.02E-11	1.31E-07

rHRA1 GW	Species	RWQS (mg/l)					
	Cl-	250					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	1.21E-08	2.71E-08	3.04E-06
2	2.81E-05	0.00430004	0.00527388	0.00895335	0.0155068	0.0180998	0.0216925
3	0.00337618	0.108293	0.129706	0.225791	0.384501	0.457179	0.563048
4	0.0743584	0.408782	0.454189	0.769443	1.38154	1.63744	2.03179
5	0.4033	0.475738	0.528445	0.943373	2.27988	2.72526	3.5783
6	0.327786	0.373226	0.421767	0.785253	2.74618	3.50682	5.05947
7	0.259042	0.292271	0.32941	0.627139	2.917	3.88285	5.49326
8	0.211819	0.238874	0.26977	0.517346	2.87039	3.95935	6.02432
9	0.166321	0.193693	0.221033	0.424887	2.56662	4.10597	6.11342
10	0.142689	0.162804	0.182614	0.351326	2.24758	3.94332	6.51337
11	0.0961504	0.114791	0.129955	0.259035	1.90101	3.56554	6.65481
13	0.0708383	0.0857831	0.0958993	0.184496	1.30301	2.68178	6.60878
14	0.0588673	0.0705781	0.0793824	0.156589	1.10711	2.30442	6.45886
16	0.0427298	0.0517378	0.0584078	0.112669	0.787704	1.71074	5.91152
17	0.0310093	0.0385113	0.0434781	0.0875608	0.67092	1.47229	5.32959
19	0.0196183	0.0249481	0.0282872	0.0565514	0.430884	1.05018	4.68642
21	0.0137056	0.0177315	0.0200824	0.041126	0.295123	0.752788	4.10378
23	0.0100376	0.0129155	0.014659	0.0305472	0.209629	0.541358	3.48367
26	0.00661063	0.00859989	0.00970092	0.0204128	0.129302	0.321098	2.70312
28	0.00404572	0.0053404	0.00599966	0.0130289	0.0941034	0.236751	2.29169
30	0.00225109	0.00300048	0.00340564	0.00755241	0.0619544	0.168396	1.939
32	0.00126201	0.00169856	0.00194636	0.00447809	0.0391781	0.116505	1.63453
35	0.000690341	0.000943831	0.00107488	0.00253666	0.0199823	0.064952	1.25765
39	0.000392716	0.000555287	0.000638396	0.00151723	0.00987665	0.0317419	0.83527
43	2.37E-04	0.000343311	0.000392172	0.000968435	0.0058229	0.0169042	0.553094
47	1.32E-04	1.95E-04	2.22E-04	0.000569377	0.00335289	0.00940001	0.371419
52	6.32E-05	9.34E-05	1.07E-04	0.00028423	0.00167161	0.0045305	0.233735
57	2.62E-05	3.89E-05	4.49E-05	1.26E-04	0.000769241	0.00216372	0.149257
64	9.66E-06	1.44E-05	1.69E-05	5.00E-05	0.000278461	0.000765138	0.0810877
70	3.45E-06	5.29E-06	6.28E-06	2.00E-05	1.16E-04	0.000309966	0.0496071
78	1.39E-06	2.19E-06	2.64E-06	8.78E-06	4.68E-05	1.20E-04	0.0262454
86	4.05E-07	6.51E-07	8.01E-07	2.75E-06	1.57E-05	3.89E-05	0.0141482
95	1.28E-07	2.11E-07	2.59E-07	9.57E-07	5.71E-06	1.30E-05	0.00718717
100	3.85E-08	6.34E-08	7.79E-08	2.97E-07	2.02E-06	5.51E-06	0.00496851
105	1.38E-08	2.12E-08	2.61E-08	9.08E-08	6.45E-07	2.21E-06	0.00344886
116	5.98E-09	9.35E-09	1.18E-08	4.06E-08	2.31E-07	5.12E-07	0.00156603
128	1.41E-09	2.35E-09	3.10E-09	1.44E-08	8.69E-08	2.04E-07	0.00067435
141	0	0	0.00E+00	7.89E-10	1.80E-08	5.38E-08	2.75E-04
156	0	0	0	1.29E-10	3.95E-09	9.41E-09	9.98E-05
172	3.40E-11	5.06E-11	7.09E-11	5.27E-10	5.32E-09	1.22E-08	3.43E-05
190	1.81E-11	3.97E-11	5.83E-11	6.22E-10	4.36E-09	8.49E-09	1.06E-05
210	7.68E-12	1.55E-11	2.55E-11	2.64E-10	1.71E-09	3.35E-09	2.88E-06
232	0.00E+00	5.96E-12	1.03E-11	5.31E-11	3.26E-10	6.65E-10	7.03E-07
256	0.00E+00	0.00E+00	1.87E-14	1.21E-12	7.50E-12	1.56E-11	1.54E-07
282	0.00E+00	0.00E+00	2.53E-14	7.07E-13	3.84E-12	6.83E-12	3.01E-08
300	0	0	0.00E+00	1.75E-13	1.04E-12	2.06E-12	9.81E-09
312	0	0	0	0	1.17E-14	9.61E-14	4.70E-09
344	0	0	0	1.81E-15	2.68E-14	9.14E-14	6.71E-10
380	7.50768E-16	2.80E-15	4.37E-15	1.58E-14	8.65E-14	1.69E-13	7.62E-11
420	0	0	0	6.35E-15	3.66E-14	8.00E-14	6.61E-12
464	0	0	0	0	6.85E-15	1.78E-14	4.87E-13
512	0	0	9.66E-16	1.26E-14	6.36E-14	1.25E-13	3.67E-13
565	0	1.06E-14	1.50E-14	4.01E-14	1.87E-13	3.19E-13	1.07E-12
624	0	8.49E-15	1.49E-14	4.86E-14	2.33E-13	4.32E-13	1.12E-12
689	5.65E-14	8.90E-14	1.13E-13	2.39E-13	1.04E-12	1.83E-12	5.55E-12
761	0	0	0	1.82E-14	5.28E-13	1.24E-12	5.12E-12
840	0	0	0	1.76E-13	1.01E-12	1.98E-12	5.03E-12
928	0	0	0	0	3.17E-12	7.09E-12	2.12E-11
1000	0	0	0.00E+00	1.55E-12	7.75E-12	1.23E-11	4.10E-11
1024	1.71E-12	2.22E-12	2.54E-12	5.28E-12	2.39E-11	4.15E-11	1.06E-10
1131	1.43E-12	1.85E-12	2.16E-12	4.26E-12	2.01E-11	3.31E-11	9.11E-11
1249	7.12E-13	1.04E-12	1.21E-12	2.39E-12	1.08E-11	1.97E-11	5.43E-11
1379	1.03E-13	2.35E-13	2.95E-13	6.18E-13	2.96E-12	4.97E-12	1.37E-11
1523	9.40E-16	1.68E-15	2.36E-15	6.74E-15	3.23E-14	6.04E-14	2.38E-13
1681	3.42E-16	2.98E-15	4.24E-15	1.29E-14	6.15E-14	1.03E-13	3.58E-13
1856	5.64E-15	9.09E-15	1.10E-14	2.68E-14	1.28E-13	2.09E-13	6.89E-13
2050	4.34E-15	8.96E-15	1.09E-14	2.49E-14	1.24E-13	2.04E-13	5.86E-13
2263	6.66E-17	1.71E-15	3.14E-15	8.93E-15	4.65E-14	7.29E-14	2.15E-13
2499	0	0.00E+00	2.20E-16	2.22E-15	1.00E-14	1.78E-14	5.93E-14
2759	0	0	0	8.38E-16	5.76E-15	1.12E-14	4.87E-14
3046	0	0	0	5.09E-16	3.17E-15	5.06E-15	1.52E-14
3363	0	2.47E-16	5.92E-16	2.59E-15	1.49E-14	2.95E-14	7.97E-14
3714	7.29E-16	1.82E-15	2.31E-15	5.88E-15	2.77E-14	4.66E-14	1.57E-13
4100	1.70E-15	2.92E-15	3.62E-15	9.12E-15	4.08E-14	7.01E-14	2.06E-13
4527	1.51E-15	2.86E-15	3.81E-15	1.10E-14	4.88E-14	7.95E-14	2.30E-13
4999	0	0	0	1.38E-15	1.77E-14	3.73E-14	1.41E-13
5519	0	0	0	0	0	0	4.70E-14
6094	0	4.06E-15	1.16E-14	4.85E-14	2.62E-13	4.34E-13	1.32E-12
6728	1.94E-14	3.84E-14	4.83E-14	1.16E-13	5.30E-13	8.92E-13	3.13E-12
7428	0	3.15E-14	6.13E-14	1.89E-13	9.00E-13	1.67E-12	4.91E-12
8202	0	0.00E+00	1.20E-13	4.73E-13	2.25E-12	3.79E-12	1.18E-11
9056	0	0	2.93E-14	6.38E-13	3.21E-12	5.20E-12	1.48E-11
9999	0	0	1.00E-13	2.78E-12	1.53E-11	2.42E-11	6.95E-11
11039	3.34E-12	4.31E-12	4.99E-12	9.97E-12	4.85E-11	7.73E-11	2.33E-10
12189	3.95E-12	4.92E-12	5.68E-12	1.13E-11	5.19E-11	8.74E-11	2.41E-10
13458	2.06E-12	2.92E-12	3.52E-12	7.32E-12	3.36E-11	5.47E-11	1.64E-10
14859	7.07E-13	1.07E-12	1.41E-12	3.12E-12	1.37E-11	2.24E-11	7.82E-11
16406	2.43743E-14	1.49E-13	2.23E-13	5.74E-13	2.61E-12	4.81E-12	1.48E-11
18114	0	0	0	0	3.12E-15	8.03E-15	5.08E-14
20000	0	0	0	0	2.22E-14	5.66E-14	1.84E-13

rHRA1 GW	Species	RWQS (mg/l)					
	Cu	2					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0
86	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0
128	0	0	0	0	0	0	0
141	0	0	0	0	0	0	1.24E-20
156	0	0	0	0	0	0	5.52E-19
172	0	0	0	0	0	0	1.73E-18
190	0	0	0	0	0	0	9.04E-18
210	0	0	0	0	0	0	2.64E-16
232	0	0	0	0	0	0	5.39E-15
256	0	0	0	0	0	1.95E-20	7.90E-14
282	0	0	0	0	0	3.16E-20	8.54E-13
300	0	0	0	0	0	6.42E-20	3.39E-12
312	0	0	0	0	0	6.78E-20	7.70E-12
344	0	0	0	0	0	1.72E-19	5.11E-11
380	0	0	0	0	0	2.74E-18	2.86E-10
420	0	0	0	0	3.62E-20	7.69E-17	1.33E-09
464	0	0	0	0	2.39E-19	1.46E-15	5.16E-09
512	0	0	0	0	4.57E-18	1.99E-14	1.69E-08
565	0	0	0	0	1.22E-16	2.17E-13	4.78E-08
624	0	0	0	0	2.42E-15	1.85E-12	1.19E-07
689	0	0	0	0	3.48E-14	1.25E-11	2.62E-07
761	0	0	0	0	3.83E-13	7.57E-11	5.13E-07
840	0	0	0	0	3.23E-12	3.92E-10	9.03E-07
928	0	0	0	0	2.11E-11	1.74E-09	1.34E-06
1000	0	0	0	1.10E-19	7.21E-11	4.28E-09	1.85E-06
1024	0	0	0	1.58E-19	1.10E-10	5.59E-09	2.03E-06
1131	0	0	0	2.17E-18	4.95E-10	1.74E-08	2.62E-06
1249	0	0	0	3.62E-17	1.92E-09	4.31E-08	3.52E-06
1379	0	0	0	7.23E-16	6.13E-09	9.25E-08	3.49E-06
1523	0	0	0	1.08E-14	1.49E-08	2.02E-07	4.64E-06
1681	0	0	0	1.24E-13	3.92E-08	3.26E-07	5.07E-06
1856	0	0	0	1.07E-12	8.29E-08	5.71E-07	5.22E-06
2050	0	0	2.36E-20	7.49E-12	1.77E-07	8.32E-07	4.98E-06
2263	0	0	8.03E-20	4.08E-11	3.17E-07	1.09E-06	5.23E-06
2499	0	0	2.79E-19	1.85E-10	4.88E-07	1.37E-06	5.26E-06
2759	0	0	7.59E-19	7.36E-10	7.15E-07	1.72E-06	5.33E-06
3046	0	7.91E-20	1.98E-17	2.39E-09	9.50E-07	1.94E-06	5.26E-06
3363	0	1.10E-19	4.63E-16	7.12E-09	1.26E-06	2.19E-06	4.57E-06
3714	0	9.00E-19	8.05E-15	1.80E-08	1.45E-06	2.32E-06	4.85E-06
4100	0	1.24E-17	7.14E-14	3.99E-08	1.59E-06	2.42E-06	4.13E-06
4527	0	2.96E-16	6.67E-13	8.02E-08	1.74E-06	2.58E-06	4.56E-06
4999	0	3.58E-15	4.71E-12	1.48E-07	1.84E-06	2.58E-06	4.45E-06
5519	0	3.93E-14	2.92E-11	2.38E-07	1.90E-06	2.68E-06	5.15E-06
6094	0	3.74E-13	1.27E-10	3.45E-07	1.95E-06	2.67E-06	5.88E-06
6728	0	2.79E-12	5.40E-10	4.57E-07	1.91E-06	2.58E-06	5.63E-06
7428	0	1.48E-11	1.46E-09	5.76E-07	1.88E-06	2.65E-06	5.74E-06
8202	0	8.23E-11	4.40E-09	6.35E-07	1.84E-06	2.52E-06	5.36E-06
9056	1.42E-18	2.07E-10	8.84E-09	6.65E-07	1.76E-06	2.49E-06	5.22E-06
9999	1.45E-18	7.20E-10	1.99E-08	6.93E-07	1.70E-06	2.28E-06	5.22E-06
11039	4.30E-17	1.85E-09	3.17E-08	6.84E-07	1.68E-06	2.26E-06	5.00E-06
12189	7.37E-16	3.14E-09	4.57E-08	6.57E-07	1.55E-06	2.12E-06	4.62E-06
13458	1.47E-15	6.31E-09	5.43E-08	6.18E-07	1.47E-06	2.06E-06	4.13E-06
14859	1.91E-14	7.25E-09	5.82E-08	5.88E-07	1.41E-06	1.98E-06	4.01E-06
16406	1.53E-13	4.87E-09	4.66E-08	5.44E-07	1.35E-06	1.87E-06	3.88E-06
18114	1.07E-13	4.51E-09	3.52E-08	4.85E-07	1.31E-06	1.71E-06	3.73E-06
20000	4.35E-13	2.29E-09	2.41E-08	4.10E-07	1.20E-06	1.67E-06	3.80E-06

rHRA1 GW	Species	RWQS (mg/l)					
	Hg	0.001					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0
86	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0
128	0	0	0	0	0	0	0
141	0	0	0	0	0	0	3.76E-20
156	0	0	0	0	0	1.51E-20	1.18E-18
172	0	0	0	0	3.81E-20	4.76E-19	2.45E-17
190	0	0	0	0	1.04E-18	1.10E-17	3.75E-16
210	0	0	0	0	2.12E-17	1.73E-16	4.32E-15
232	0	0	0	1.15E-20	3.14E-16	2.04E-15	3.82E-14
256	0	0	0	3.46E-19	3.51E-15	1.83E-14	2.63E-13
282	0	0	0	7.43E-18	2.96E-14	1.29E-13	1.42E-12
300	0	0	0	4.57E-17	1.01E-13	4.13E-13	3.80E-12
312	0	0	0	1.34E-16	2.13E-13	8.28E-13	6.83E-12
344	0	0	0	1.54E-15	1.21E-12	4.11E-12	2.63E-11
380	0	0	0	1.42E-14	5.96E-12	1.77E-11	8.89E-11
420	0	0	0	1.08E-13	2.40E-11	6.52E-11	2.62E-10
464	0	0	0	6.72E-13	8.32E-11	1.99E-10	6.80E-10
512	0	0	0	3.48E-12	2.39E-10	5.33E-10	1.54E-09
565	0	0	1.48E-19	1.44E-11	5.98E-10	1.27E-09	3.10E-09
624	0	0	3.79E-18	5.02E-11	1.36E-09	2.63E-09	5.63E-09
689	0	0	7.13E-17	1.53E-10	2.75E-09	4.91E-09	9.26E-09
761	0	0	1.00E-15	4.15E-10	5.04E-09	8.11E-09	1.40E-08
840	0	2.46E-19	1.06E-14	9.69E-10	8.42E-09	1.26E-08	2.00E-08
928	0	6.44E-18	8.78E-14	2.03E-09	1.26E-08	1.76E-08	2.55E-08
1000	0	5.79E-17	3.68E-13	3.33E-09	1.65E-08	2.17E-08	2.94E-08
1024	0	1.11E-16	5.64E-13	3.82E-09	1.78E-08	2.27E-08	3.10E-08
1131	0	1.41E-15	2.98E-12	6.41E-09	2.29E-08	2.83E-08	3.72E-08
1249	0	1.35E-14	1.30E-11	9.76E-09	2.77E-08	3.25E-08	4.12E-08
1379	0	1.01E-13	4.73E-11	1.37E-08	3.14E-08	3.55E-08	4.40E-08
1523	0	6.13E-13	1.48E-10	1.73E-08	3.38E-08	3.83E-08	4.73E-08
1681	1.19849E-19	3.00E-12	3.97E-10	2.06E-08	3.53E-08	4.00E-08	4.96E-08
1856	8.69E-19	1.23E-11	9.16E-10	2.24E-08	3.63E-08	4.08E-08	5.17E-08
2050	1.66E-17	4.28E-11	1.85E-09	2.30E-08	3.64E-08	4.08E-08	5.27E-08
2263	2.54E-16	1.30E-10	3.21E-09	2.25E-08	3.58E-08	4.04E-08	5.24E-08
2499	2.94E-15	3.39E-10	5.61E-09	2.19E-08	3.58E-08	4.16E-08	5.15E-08
2759	2.60838E-14	7.91E-10	7.53E-09	2.06E-08	3.54E-08	4.08E-08	5.24E-08
3046	1.81922E-13	1.68E-09	7.15E-09	1.88E-08	3.50E-08	4.06E-08	5.41E-08
3363	1.02175E-12	2.64E-09	5.80E-09	1.66E-08	3.50E-08	4.10E-08	5.21E-08
3714	4.72754E-12	2.72E-09	4.63E-09	1.45E-08	3.46E-08	4.04E-08	5.37E-08
4100	1.81672E-11	2.31E-09	3.50E-09	1.19E-08	3.37E-08	4.01E-08	5.38E-08
4527	5.94706E-11	1.79E-09	2.64E-09	9.95E-09	3.26E-08	3.90E-08	5.32E-08
4999	1.6811E-10	1.25E-09	1.87E-09	7.91E-09	3.09E-08	3.70E-08	5.24E-08
5519	1.95652E-10	8.53E-10	1.31E-09	6.23E-09	2.96E-08	3.61E-08	5.18E-08
6094	1.31113E-10	5.62E-10	8.55E-10	4.76E-09	2.84E-08	3.56E-08	4.99E-08
6728	1.3299E-10	3.4639E-10	5.53E-10	3.60E-09	2.67E-08	3.53E-08	4.95E-08
7428	7.15716E-11	2.1818E-10	3.57E-10	2.60E-09	2.47E-08	3.42E-08	4.74E-08
8202	4.05499E-11	1.26484E-10	2.16E-10	1.87E-09	2.44E-08	3.19E-08	4.63E-08
9056	2.05033E-11	6.44835E-11	1.26E-10	1.33E-09	2.32E-08	3.17E-08	4.36E-08
9999	1.01101E-11	3.27613E-11	6.94E-11	9.03E-10	2.19E-08	3.04E-08	4.35E-08
11039	4.45049E-12	1.66398E-11	3.57E-11	6.08E-10	2.06E-08	2.85E-08	4.20E-08
12189	1.83141E-12	7.67302E-12	1.76459E-11	3.96E-10	1.88E-08	2.69E-08	4.05E-08
13458	7.0086E-13	3.40805E-12	8.33366E-12	2.46E-10	1.65E-08	2.47E-08	4.00E-08
14859	2.46087E-13	1.41003E-12	3.62452E-12	1.50E-10	1.40E-08	2.41E-08	3.91E-08
16406	7.85921E-14	5.15018E-13	1.48287E-12	8.61E-11	1.24E-08	2.29E-08	3.63E-08
18114	2.26768E-14	1.68613E-13	5.60907E-13	4.78E-11	9.93E-09	2.11E-08	3.54E-08
20000	5.77251E-15	4.99192E-14	1.93117E-13	2.53E-11	8.03E-09	1.95E-08	3.42E-08

rHRA1 GW	Species	RWQS (mg/l)					
	Ni	0.02					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0
13	0	0	0	0	0	0	1.70E-18
14	0	0	0	0	0	0	3.39E-17
16	0	0	0	0	0	6.51E-20	3.42E-15
17	0	0	0	0	0	6.00E-19	2.08E-14
19	0	0	0	0	7.08E-20	4.50E-17	5.39E-13
21	0	0	0	0	4.33E-18	1.48E-15	6.30E-12
23	0	0	0	0	1.28E-16	2.48E-14	4.72E-11
26	0	0	0	0	6.73E-15	6.82E-13	5.19E-10
28	0	0	0	0	5.76E-14	4.03E-12	1.87E-09
30	0	0	0	0	3.49E-13	1.85E-11	5.57E-09
32	0	0	0	0	1.59E-12	6.79E-11	1.42E-08
35	0	0	0	8.45E-20	1.28E-11	3.42E-10	4.54E-08
39	0	0	0	2.18E-18	1.21E-10	2.12E-09	1.55E-07
43	0	0	0	6.30E-17	6.79E-10	9.06E-09	4.04E-07
47	0	0	0	1.19E-15	2.66E-09	2.95E-08	8.31E-07
52	0	0	0	2.33E-14	1.09E-08	9.55E-08	1.67E-06
57	0	0	0	2.54E-13	3.41E-08	2.31E-07	2.87E-06
64	0	0	0	3.71E-12	1.16E-07	5.93E-07	5.01E-06
70	0	0	0	2.34E-11	2.61E-07	1.10E-06	7.09E-06
78	0	0	5.51E-20	1.80E-10	6.29E-07	2.03E-06	9.84E-06
86	0	0	1.56E-18	8.93E-10	1.21E-06	3.44E-06	1.30E-05
95	0	0	5.65E-17	3.80E-09	2.19E-06	5.13E-06	1.46E-05
100	0	3.96E-18	3.09E-16	7.47E-09	2.87E-06	6.29E-06	1.65E-05
105	0	4.61E-18	1.47E-15	1.37E-08	3.56E-06	7.53E-06	1.81E-05
116	0	9.64E-18	2.71E-14	4.01E-08	5.38E-06	9.39E-06	2.14E-05
128	0	2.40E-17	3.57E-13	1.09E-07	6.89E-06	1.12E-05	2.13E-05
141	4.78E-20	8.08E-17	3.56E-12	2.74E-07	8.97E-06	1.31E-05	2.02E-05
156	2.29E-18	1.96E-15	2.94E-11	5.97E-07	1.03E-05	1.35E-05	2.09E-05
172	2.35E-18	3.22E-14	1.86E-10	1.07E-06	1.05E-05	1.45E-05	2.21E-05
190	2.58E-18	4.18E-13	9.04E-10	1.83E-06	1.13E-05	1.45E-05	2.30E-05
210	3.65E-18	4.17E-12	3.84E-09	2.82E-06	1.18E-05	1.44E-05	2.56E-05
232	4.34E-18	3.21E-11	1.38E-08	3.69E-06	1.17E-05	1.51E-05	2.58E-05
256	4.96E-18	1.94E-10	4.28E-08	4.51E-06	1.16E-05	1.55E-05	2.61E-05
282	1.98E-17	9.16E-10	1.10E-07	4.96E-06	1.19E-05	1.55E-05	2.66E-05
300	1.35E-16	2.27E-09	1.92E-07	5.15E-06	1.17E-05	1.56E-05	2.62E-05
312	4.74E-16	4.03E-09	2.56E-07	5.26E-06	1.17E-05	1.54E-05	2.57E-05
344	7.95E-15	1.39E-08	4.26E-07	5.24E-06	1.12E-05	1.49E-05	2.59E-05
380	1.05E-13	4.18E-08	6.33E-07	5.12E-06	1.10E-05	1.42E-05	2.70E-05
420	1.17E-12	1.01E-07	9.15E-07	4.95E-06	1.06E-05	1.43E-05	2.53E-05
464	9.83E-12	1.45E-07	8.56E-07	4.58E-06	1.05E-05	1.34E-05	2.26E-05
512	6.38E-11	1.52E-07	7.18E-07	4.21E-06	1.01E-05	1.28E-05	2.33E-05
565	3.35E-10	1.47E-07	6.25E-07	3.75E-06	9.81E-06	1.22E-05	2.35E-05
624	1.47E-09	1.19E-07	4.29E-07	3.23E-06	9.01E-06	1.17E-05	2.28E-05
689	1.96E-09	9.34E-08	2.69E-07	2.68E-06	8.54E-06	1.12E-05	2.32E-05
761	1.53E-09	5.52E-08	1.92E-07	2.22E-06	8.03E-06	1.09E-05	2.14E-05
840	7.22E-10	3.67E-08	1.10E-07	1.73E-06	7.57E-06	1.05E-05	2.11E-05
928	2.57E-10	1.86E-08	7.14E-08	1.38E-06	6.98E-06	1.04E-05	1.91E-05
1000	1.40E-10	9.53E-09	4.80E-08	1.12E-06	6.67E-06	9.84E-06	1.80E-05
1024	1.05E-10	7.71E-09	4.15E-08	1.05E-06	6.59E-06	9.71E-06	1.83E-05
1131	3.72E-11	3.28E-09	2.12E-08	7.84E-07	6.19E-06	8.91E-06	1.65E-05
1249	8.63E-12	1.11E-09	1.10E-08	5.77E-07	5.92E-06	8.53E-06	1.54E-05
1379	1.66E-12	4.77E-10	5.41E-09	4.11E-07	5.58E-06	7.59E-06	1.48E-05
1523	2.60E-13	1.31E-10	2.31E-09	2.81E-07	5.04E-06	7.34E-06	1.29E-05
1681	5.51E-14	3.77E-11	8.92E-10	1.90E-07	4.88E-06	6.82E-06	1.17E-05
1856	9.44E-15	8.82E-12	3.50E-10	1.24E-07	4.42E-06	6.35E-06	1.03E-05
2050	7.75E-16	1.72E-12	1.03E-10	7.91E-08	3.99E-06	6.06E-06	9.99E-06
2263	7.42E-17	2.92E-13	3.32E-11	4.82E-08	3.43E-06	5.72E-06	1.01E-05
2499	2.18E-17	4.66E-14	8.38E-12	2.83E-08	2.88E-06	5.23E-06	9.61E-06
2759	4.70E-18	6.68E-15	2.14E-12	1.61E-08	2.42E-06	5.07E-06	9.71E-06
3046	1.08E-18	8.13E-16	4.83E-13	8.59E-09	1.97E-06	4.64E-06	1.00E-05
3363	2.44E-19	8.05E-17	8.88E-14	4.41E-09	1.67E-06	4.16E-06	9.63E-06
3714	3.54E-19	1.58E-17	1.34E-14	2.15E-09	1.31E-06	3.73E-06	9.30E-06
4100	5.61E-19	2.36E-18	1.69E-15	1.04E-09	1.03E-06	3.35E-06	8.40E-06
4527	4.79E-19	1.80E-18	1.78E-16	4.71E-10	8.11E-07	2.89E-06	7.66E-06
4999	0	4.05E-19	1.67E-17	1.90E-10	6.28E-07	2.38E-06	6.96E-06
5519	0	1.94E-19	2.21E-18	7.24E-11	4.73E-07	2.02E-06	6.56E-06
6094	7.61E-20	6.66E-19	1.80E-18	2.58E-11	3.41E-07	1.64E-06	6.20E-06
6728	0	1.15E-19	1.49E-18	8.11E-12	2.41E-07	1.28E-06	6.02E-06
7428	0	0	2.30E-18	2.36E-12	1.66E-07	9.62E-07	5.41E-06
8202	0	0	2.04E-18	6.10E-13	1.11E-07	7.34E-07	4.76E-06
9056	0	7.16E-18	1.64E-17	1.37E-13	7.40E-08	5.40E-07	4.43E-06
9999	0	0	0	2.80E-14	4.57E-08	4.04E-07	3.93E-06
11039	0	0	2.86E-20	4.32E-15	2.77E-08	2.99E-07	3.43E-06
12189	0	0	0	8.62E-16	1.60E-08	2.11E-07	2.96E-06
13458	0	0	0	5.18E-16	9.11E-09	1.44E-07	2.53E-06
14859	0	5.65E-21	2.07E-18	4.49E-16	4.88E-09	9.79E-08	2.17E-06
16406	1.91E-19	1.57E-16	3.43E-16	1.36E-15	2.48E-09	6.41E-08	1.77E-06
18114	0	3.21E-20	9.97E-20	1.31E-17	1.16E-09	4.05E-08	1.42E-06
20000	0	0	0	3.93E-18	5.03E-10	2.47E-08	1.14E-06

rHRA1 GW	Species	RWQS (mg/l)					
	SO4	250					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	4.06E-08	9.00E-08	1.02E-05
2	9.28E-05	0.014241	0.0175222	0.0296796	0.0516549	0.0597479	0.0720182
3	0.0113125	0.36396	0.456609	0.769687	1.32254	1.4983	1.97307
4	0.268298	1.38292	1.55341	2.62382	4.72403	5.6809	6.92255
5	1.43035	1.69963	1.90508	3.3808	7.96682	9.69713	12.7343
6	1.30496	1.49815	1.66171	3.12437	10.0908	12.5749	18.0594
7	1.17711	1.32417	1.4699	2.7627	11.1897	14.6251	21.4189
8	1.04892	1.18229	1.32226	2.47421	11.869	15.3014	23.1984
9	0.955698	1.07756	1.19663	2.24208	11.5679	16.687	24.7542
10	0.842372	0.945617	1.05456	1.98197	11.0607	17.4115	26.87
11	0.704359	0.799202	0.897687	1.70806	10.0452	16.9423	27.3778
13	0.581084	0.688762	0.767927	1.43691	7.97593	14.5045	29.1216
14	0.539871	0.623324	0.705782	1.32642	7.36115	13.7371	29.2858
16	0.456864	0.529336	0.595705	1.1192	6.28514	11.8135	28.8522
17	0.386636	0.454921	0.512176	0.982882	5.77813	10.9761	28.1382
19	0.306022	0.363351	0.405943	0.777896	4.56681	9.05524	26.539
21	0.256557	0.303716	0.341915	0.653178	3.76763	7.41531	24.4678
23	0.219167	0.2622	0.294672	0.560323	3.10507	6.24492	21.8394
26	0.173934	0.210259	0.237191	0.450992	2.38778	4.79649	18.995
28	0.131743	0.161841	0.181548	0.352292	1.98037	4.09548	17.0721
30	0.0947353	0.118708	0.133562	0.261422	1.57997	3.3233	15.2159
32	0.0689946	0.087702	0.0989752	0.196762	1.21674	2.5789	13.5286
35	0.0503196	0.0649489	0.0735124	0.148716	0.841386	1.73519	11.1636
39	0.038523	0.0498379	0.056166	0.115763	0.606678	1.23007	8.49462
43	0.0297431	0.0385947	0.0432483	0.0897644	0.454414	0.898924	6.49061
47	0.0214236	0.0282383	0.0315763	0.0665751	0.336447	0.649293	4.933
52	0.0139291	0.0183433	0.0207373	0.0444005	0.219848	0.4313	3.31952
57	0.00846243	0.0113016	0.0127464	0.0279334	0.139162	0.274013	2.30229
64	0.0048878	0.00660075	0.00748362	0.016967	0.0817847	0.158463	1.39459
70	0.00284066	0.00388269	0.00442588	0.0101865	0.0508537	0.0991547	0.918019
78	0.00175458	0.00244204	0.00277911	0.00650972	0.0324183	0.0600094	0.53024
86	0.000849655	0.00121187	0.0014086	0.00339242	0.0168938	0.0312472	0.309641
95	0.000457139	0.000650823	0.000757998	0.00190964	0.00936365	0.0168003	0.169162
100	0.000218092	0.000315119	0.000361464	0.000958436	0.00530788	0.010523	0.120901
105	7.31E-05	1.07E-04	1.22E-04	0.000347546	0.00214959	0.00484987	0.0837215
116	2.21E-05	3.29E-05	3.83E-05	1.16E-04	0.000590127	0.0011749	0.0343389
128	8.69E-06	1.32E-05	1.56E-05	4.96E-05	0.000253371	0.000453581	0.0138084
141	3.43E-06	5.44E-06	6.57E-06	2.19E-05	1.09E-04	0.000205548	0.00544445
156	1.65E-06	2.69E-06	3.30E-06	1.15E-05	5.72E-05	1.05E-04	0.00199697
172	7.39E-07	1.24E-06	1.52E-06	5.52E-06	2.92E-05	5.21E-05	0.000735217
190	2.22E-07	3.88E-07	4.79E-07	1.87E-06	1.03E-05	1.84E-05	0.000241093
210	4.03E-08	7.55E-08	9.64E-08	4.27E-07	2.41E-06	4.61E-06	6.76E-05
232	5.69E-09	1.14E-08	1.60E-08	8.68E-08	5.20E-07	1.02E-06	1.64E-05
256	1.14E-10	6.55E-10	1.05E-09	1.22E-08	8.80E-08	1.75E-07	3.42E-06
282	1.41E-12	6.82E-12	2.12E-11	1.01E-09	1.27E-08	2.60E-08	6.03E-07
300	0	0	0	1.11E-10	1.56E-09	2.95E-09	1.75E-07
312	0	0	0	0.00E+00	2.46E-10	5.25E-10	7.96E-08
344	0	0	0	0	4.25E-11	1.06E-10	1.03E-08
380	0	0	3.90E-13	2.81E-12	1.54E-11	2.69E-11	1.06E-09
420	0	0.00E+00	7.45E-14	7.99E-13	6.01E-12	1.17E-11	1.30E-10
464	0	0	2.29E-14	2.99E-13	2.10E-12	3.99E-12	2.67E-11
512	0	7.98E-15	3.22E-14	1.76E-13	1.03E-12	1.90E-12	8.70E-12
565	0	0	2.38E-14	1.54E-13	8.83E-13	1.57E-12	5.23E-12
624	0	0	1.21E-14	1.34E-13	6.34E-13	1.07E-12	3.63E-12
689	7.14775E-14	1.78E-13	2.33E-13	5.72E-13	2.75E-12	4.93E-12	1.59E-11
761	0	0	0	3.04E-13	2.74E-12	5.38E-12	2.03E-11
840	0	0	0	0	2.33E-12	4.44E-12	1.55E-11
928	0	0	0	1.16E-12	1.95E-11	3.50E-11	1.81E-10
1000	0	0	0	4.74E-12	2.37E-11	4.53E-11	1.51E-10
1024	3.11E-12	5.30E-12	7.24E-12	1.68E-11	7.72E-11	1.33E-10	3.52E-10
1131	2.73E-12	5.42E-12	6.66E-12	1.43E-11	6.76E-11	1.21E-10	3.47E-10
1249	1.61E-12	3.06E-12	3.80E-12	8.07E-12	3.81E-11	6.73E-11	1.90E-10
1379	2.23E-13	5.52E-13	7.55E-13	1.80E-12	7.92E-12	1.38E-11	3.95E-11
1523	0	6.70E-15	1.32E-14	6.07E-14	3.32E-13	7.01E-13	2.09E-12
1681	0	1.04E-14	1.90E-14	7.53E-14	3.86E-13	7.47E-13	2.10E-12
1856	1.14E-14	2.92E-14	4.18E-14	1.35E-13	6.20E-13	1.07E-12	3.41E-12
2050	3.69873E-15	2.83E-14	4.07E-14	1.18E-13	5.84E-13	9.48E-13	2.47E-12
2263	0	0	0.00E+00	2.88E-14	1.80E-13	3.09E-13	8.67E-13
2499	0	0	0	0	7.76E-15	2.46E-14	9.71E-14
2759	0	0	0	1.97E-15	1.66E-14	3.51E-14	9.30E-14
3046	0	0	0	1.49E-15	1.38E-14	3.22E-14	1.11E-13
3363	1.10555E-15	4.05E-15	5.48E-15	1.47E-14	6.46E-14	1.11E-13	3.54E-13
3714	1.05E-14	1.50E-14	1.73E-14	3.55E-14	1.65E-13	2.74E-13	7.20E-13
4100	1.58E-14	2.26E-14	2.72E-14	5.29E-14	2.58E-13	4.26E-13	1.20E-12
4527	1.45E-14	2.17E-14	2.86E-14	6.08E-14	2.96E-13	4.90E-13	1.38E-12
4999	0	0	0	5.41E-15	7.89E-14	1.35E-13	5.52E-13
5519	0	0	0	0	0	9.2898E-15	2.41E-13
6094	0	0	0	7.64E-14	4.00E-13	7.84E-13	1.97E-12
6728	3.92E-15	6.76E-14	1.00E-13	2.85E-13	1.39E-12	2.70E-12	6.39E-12
7428	0	0	9.50E-14	4.75E-13	2.56E-12	5.20E-12	1.34E-11
8202	0	1.88E-13	5.77E-13	1.69E-12	7.79E-12	1.57E-11	4.96E-11
9056	0	0	0	2.26E-12	1.39E-11	2.25E-11	8.15E-11
9999	0	0	1.87E-12	1.09E-11	5.73E-11	1.06E-10	3.23E-10
11039	1.12E-11	1.46E-11	1.72E-11	3.57E-11	1.64E-10	3.02E-10	7.97E-10
12189	1.11E-11	1.54E-11	1.76E-11	3.74E-11	1.74E-10	3.03E-10	9.20E-10
13458	4.90E-12	7.41E-12	9.08E-12	2.28E-11	1.09E-10	1.84E-10	5.68E-10
14859	5.96E-13	2.19E-12	3.11E-12	9.40E-12	4.72E-11	7.53E-11	2.54E-10
16406	0	1.62E-13	4.30E-13	1.79E-12	8.73E-12	1.53E-11	4.57E-11
18114	0	0	0	0	4.18E-16	2.89E-14	2.40E-13
20000	0	0	0	1.32E-15	5.40E-14	1.22E-13	4.22E-13

rHRA1 GW	Species	RWQS (mg/l)					
	Zn	5					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0
6	0	0	0	0	0	0	2.70E-18
7	0	0	0	0	0	1.93E-20	1.58E-15
8	0	0	0	0	0	1.68E-19	2.70E-13
9	0	0	0	0	0	5.29E-18	3.67E-11
10	0	0	0	0	2.81E-20	7.41E-16	1.99E-09
11	0	0	0	0	9.19E-20	3.60E-14	2.30E-08
13	0	0	0	0	6.67E-17	7.95E-12	4.76E-07
14	0	0	0	0	1.27E-15	6.95E-11	1.13E-06
16	0	0	0	0	1.44E-13	1.79E-09	5.80E-06
17	0	0	0	0	8.91E-13	6.22E-09	1.04E-05
19	0	0	0	0	2.12E-11	4.44E-08	2.90E-05
21	0	0	0	1.25561E-20	2.15E-10	1.96E-07	6.21E-05
23	0	0	0	1.27E-19	1.35E-09	6.08E-07	1.15E-04
26	0	0	0	5.88E-18	1.27E-08	2.21E-06	0.000218639
28	0	0	0	3.13E-17	4.36E-08	4.29E-06	0.000295658
30	0	0	0	2.21E-16	1.24E-07	7.55E-06	0.000366884
32	0	0	0	1.80E-15	3.06E-07	1.32E-05	0.000432665
35	0	0	0	2.82E-14	8.53E-07	2.49E-05	0.00048436
39	0	0	0	6.72E-13	2.69E-06	4.42E-05	0.000434625
43	0	0	3.85E-20	8.12E-12	5.84E-06	7.08E-05	0.000430261
47	0	0	3.34E-19	6.31E-11	1.28E-05	9.98E-05	0.000482148
52	0	0	1.34E-18	4.92E-10	2.46E-05	1.38E-04	0.000516519
57	0	8.59E-20	3.75E-18	2.72E-09	4.05E-05	1.67E-04	0.000579691
64	0	1.64E-19	1.00E-16	1.80E-08	6.94E-05	0.000198834	0.000532335
70	0	3.26E-19	2.24E-15	6.36E-08	9.24E-05	0.00022642	0.000484503
78	0	7.26E-19	6.71E-14	2.42E-07	1.23E-04	0.00024226	0.000506719
86	0	1.32E-17	1.05E-12	6.93E-07	1.52E-04	0.000257076	0.000589605
95	0	4.87E-16	1.31E-11	1.87E-06	1.69E-04	0.000258983	0.000538852
100	2.58E-18	2.93E-15	4.30E-11	2.94E-06	1.71E-04	0.000251131	0.000485864
105	5.44E-18	1.32E-14	1.22E-10	4.24E-06	1.81E-04	0.000252273	0.000426357
116	6.23E-18	2.49E-13	8.45E-10	8.25E-06	1.71E-04	0.000247918	0.000416526
128	1.95E-17	3.36E-12	4.65E-09	1.50E-05	1.72E-04	0.000241018	0.000451926
141	4.11E-17	3.32E-11	2.06E-08	2.38E-05	1.73E-04	0.000229362	0.000454631
156	1.20E-16	2.82E-10	8.24E-08	3.45E-05	1.68E-04	0.000224069	0.000465084
172	1.66E-16	1.77E-09	2.26E-07	4.61E-05	1.66E-04	0.00022325	0.000463486
190	1.69E-16	9.37E-09	6.29E-07	5.46E-05	1.65E-04	0.000226584	0.000400289
210	1.17E-16	1.71E-08	1.32E-06	6.06E-05	1.53E-04	0.000233902	0.000373698
232	2.50E-16	4.33E-08	2.50E-06	6.35E-05	1.45E-04	0.000215948	0.000368616
256	5.66E-15	7.37E-08	3.24E-06	6.15E-05	1.44E-04	0.00021046	0.000387603
282	9.40E-14	1.67E-07	4.13E-06	6.07E-05	1.43E-04	0.000203963	0.000433569
300	4.85E-13	2.19E-07	4.75E-06	5.97E-05	1.39E-04	0.00019838	0.000438344
312	1.29E-12	1.90E-07	4.28E-06	5.82E-05	1.34E-04	0.000195936	0.000420464
344	7.86E-13	2.34E-07	4.25E-06	5.47E-05	1.29E-04	1.84E-04	0.000395655
380	2.09E-13	2.19E-07	3.67E-06	5.15E-05	1.20E-04	1.75E-04	0.00037493
420	4.54E-13	1.98E-07	2.49E-06	4.52E-05	1.17E-04	1.65E-04	0.000365167
464	2.76E-13	2.02E-07	1.65E-06	3.78E-05	1.17E-04	1.56E-04	0.000355141
512	1.77E-13	8.34E-08	8.80E-07	3.15E-05	1.12E-04	1.51E-04	0.00033195
565	2.02E-14	4.14E-08	4.66E-07	2.57E-05	1.06E-04	1.50E-04	0.000286609
624	1.87E-14	1.63E-08	2.52E-07	2.04E-05	9.89E-05	1.37E-04	0.000270837
689	1.51E-16	5.14E-09	1.19E-07	1.60E-05	9.18E-05	1.32E-04	0.000238108
761	6.76E-16	2.38E-09	5.57E-08	1.21E-05	8.69E-05	1.27E-04	0.000218143
840	0	6.06E-10	2.47E-08	8.77E-06	8.18E-05	1.21E-04	0.000211037
928	1.27E-15	1.77E-10	7.61E-09	6.22E-06	7.77E-05	1.14E-04	0.000197976
1000	1.79E-15	5.63E-11	3.08E-09	4.81E-06	7.59E-05	1.08E-04	0.000195258
1024	1.20E-15	4.20E-11	2.13E-09	4.45E-06	7.39E-05	1.05E-04	0.00019207
1131	4.25E-15	1.17E-11	5.80E-10	3.00E-06	6.87E-05	1.01E-04	1.81E-04
1249	2.75E-15	3.10E-12	1.51E-10	2.05E-06	6.20E-05	9.03E-05	1.72E-04
1379	3.16E-15	5.49E-13	3.23E-11	1.35E-06	5.40E-05	8.11E-05	1.63E-04
1523	0	3.23E-14	6.76E-12	8.46E-07	4.62E-05	7.47E-05	1.52E-04
1681	0	1.13E-14	1.43E-12	5.07E-07	4.06E-05	7.07E-05	1.46E-04
1856	1.99E-17	2.93E-15	1.81E-13	2.92E-07	3.55E-05	6.35E-05	1.37E-04
2050	0	5.83E-16	3.08E-14	1.60E-07	2.88E-05	5.88E-05	1.29E-04
2263	0	7.48E-17	4.61E-15	8.44E-08	2.47E-05	5.21E-05	1.18E-04
2499	0	5.41E-17	1.49E-15	4.12E-08	2.02E-05	4.69E-05	1.06E-04
2759	0	1.35E-17	2.01E-16	1.95E-08	1.55E-05	4.24E-05	9.70E-05
3046	0	4.71E-18	1.73E-17	8.92E-09	1.23E-05	3.51E-05	8.98E-05
3363	0	2.06E-18	1.04E-17	3.83E-09	9.19E-06	2.78E-05	8.52E-05
3714	0	6.46E-18	1.59E-17	1.50E-09	6.91E-06	2.40E-05	8.34E-05
4100	0	7.15E-18	1.37E-17	5.37E-10	5.11E-06	1.81E-05	8.07E-05
4527	0.00E+00	5.76E-18	1.08E-17	1.73E-10	3.69E-06	1.46E-05	7.37E-05
4999	0	2.1878E-19	2.06E-18	5.26E-11	2.60E-06	1.16E-05	6.79E-05
5519	0	0	1.31E-18	1.36E-11	1.79E-06	9.02E-06	6.21E-05
6094	0	1.26E-18	7.09E-18	3.13E-12	1.20E-06	6.93E-06	5.63E-05
6728	0	0	0	6.13E-13	7.79E-07	5.09E-06	5.31E-05
7428	0	0	0.00E+00	1.03E-13	4.93E-07	3.74E-06	4.75E-05
8202	0	0	2.72E-17	1.49E-14	2.99E-07	2.69E-06	4.27E-05
9056	0	0	7.52E-17	3.17E-15	1.75E-07	1.89E-06	3.78E-05
9999	0	0	0	3.05E-15	8.61E-08	1.29E-06	3.27E-05
11039	0	0	0	2.08E-15	4.74E-08	8.62E-07	2.70E-05
12189	0	0	0	2.04E-15	2.43E-08	5.57E-07	2.20E-05
13458	0	0	0	2.76E-15	1.06E-08	3.44E-07	1.77E-05
14859	0	0	1.46E-19	3.30E-15	4.49E-09	1.97E-07	1.40E-05
16406	0	1.57E-15	3.49E-15	1.22E-14	1.86E-09	1.07E-07	1.09E-05
18114	0	6.61E-20	5.26E-19	2.87E-17	7.13E-10	5.37E-08	8.44E-06
20000	0	0	0	2.63E-17	2.45E-10	2.54E-08	6.45E-06

bHRA1 GW	Species	RWQS (mg/l)					
	NH3-	0.5					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
1	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
2	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
3	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
4	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
5	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
6	0.0238798	0.032283	0.0383199	0.0979339	0.367031	0.509549	0.802299
7	0.0238799	0.0323905	0.0383251	0.0980524	0.367049	0.50955	0.802331
8	0.0238906	0.0324673	0.0384053	0.0982287	0.367122	0.509574	0.802404
9	0.0239325	0.0324673	0.0384576	0.0982969	0.367187	0.509619	0.802438
10	0.0239953	0.032474	0.0385022	0.098298	0.367223	0.509663	0.802444
11	0.0240596	0.0324673	0.0385192	0.0982667	0.367234	0.509696	0.802436
13	0.0241522	0.0324673	0.0385428	0.0981922	0.367215	0.509725	0.802407
14	0.0241778	0.0324673	0.0385432	0.0981646	0.367203	0.509727	0.802397
16	0.0241769	0.0324675	0.0384956	0.0981069	0.367171	0.509718	0.802375
17	0.0241678	0.0324492	0.0384717	0.0980865	0.367157	0.50971	0.802367
19	0.0241488	0.0324313	0.0384385	0.0980466	0.367128	0.509689	0.80235
21	0.0241352	0.0324351	0.0384182	0.0980217	0.367107	0.509668	0.802339
23	0.0241227	0.0324229	0.038401	0.097998	0.367089	0.509648	0.802329
26	0.0240876	0.0323866	0.0383805	0.0979771	0.367069	0.509622	0.802319
28	0.0240595	0.032356	0.038371	0.0979661	0.36706	0.509609	0.802314
30	0.024034	0.0323243	0.038363	0.097958	0.367053	0.509597	0.80231
32	0.0240111	0.0322925	0.0383565	0.0979511	0.367047	0.509587	0.802307
35	0.0239815	0.0322871	0.0383473	0.0979441	0.367041	0.509576	0.802304
39	0.0239511	0.0322853	0.0383359	0.0979399	0.367036	0.509565	0.802302
43	0.0239298	0.0322841	0.0383294	0.0979371	0.367034	0.509559	0.8023
47	0.0239149	0.0322836	0.0383256	0.0979359	0.367033	0.509555	0.8023
52	0.0239025	0.0322832	0.038323	0.0979351	0.367032	0.509552	0.802299
57	0.0238948	0.0322831	0.0383217	0.0979347	0.367031	0.509551	0.802299
64	0.0238883	0.0322829	0.0383207	0.0979343	0.367031	0.50955	0.802299
70	0.0238851	0.0322828	0.0383203	0.0979341	0.367031	0.509549	0.802299
78	0.0238826	0.0322828	0.03832	0.097934	0.367031	0.509549	0.802299
86	0.0238813	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
95	0.0238806	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
100	0.0238804	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
105	0.0238802	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
116	0.02388	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
128	0.0238799	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
141	0.0238799	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
156	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
172	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
190	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
210	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
232	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
256	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
282	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
300	2.39E-02	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
312	2.39E-02	3.23E-02	0.0383199	0.0979339	0.367031	0.509549	0.802299
344	2.39E-02	3.23E-02	3.83E-02	0.0979339	0.367031	0.509549	0.802299
380	2.39E-02	3.23E-02	3.83E-02	9.79E-02	0.367031	0.509549	0.802299
420	2.39E-02	3.23E-02	3.83E-02	9.79E-02	0.367031	0.509549	0.802299
464	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	0.509549	0.802299
512	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	0.802299
565	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	8.02E-01
624	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	8.02E-01
689	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	8.02E-01
761	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	8.02E-01
840	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	8.02E-01
928	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	8.02E-01
1000	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	8.02E-01
1024	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	8.02E-01
1131	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	8.02E-01
1249	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	8.02E-01
1379	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	8.02E-01
1523	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	8.02E-01
1681	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	8.02E-01
1856	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	8.02E-01
2050	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	8.02E-01
2263	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	8.02E-01
2499	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	8.02E-01
2759	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	8.02E-01
3046	2.39E-02	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	8.02E-01
3363	0.0238798	3.23E-02	3.83E-02	9.79E-02	3.67E-01	5.10E-01	8.02E-01
3714	0.0238798	0.0322827	0.0383199	9.79E-02	3.67E-01	5.10E-01	8.02E-01
4100	0.0238798	0.0322827	0.0383199	9.79E-02	3.67E-01	5.10E-01	8.02E-01
4527	0.0238798	0.0322827	0.0383199	0.0979339	3.67E-01	5.10E-01	8.02E-01
4999	0.0238798	0.0322827	0.0383199	0.0979339	3.67E-01	5.10E-01	8.02E-01
5519	0.0238798	0.0322827	0.0383199	0.0979339	3.67E-01	5.10E-01	8.02E-01
6094	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	5.10E-01	8.02E-01
6728	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	8.02E-01
7428	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
8202	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
9056	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
9999	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
11039	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
12189	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
13458	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
14859	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
16406	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
18114	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299
20000	0.0238798	0.0322827	0.0383199	0.0979339	0.367031	0.509549	0.802299

bHRA1 GW	Species	RWQS (mg/l)					
	As	0.01					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
1	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
2	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
3	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
4	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
5	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
6	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
7	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
8	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
9	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
10	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
11	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
13	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
14	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
16	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
17	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
19	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
21	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
23	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
26	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
28	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
30	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
32	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
35	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
39	0.00417036	0.00577943	0.00780216	0.0268927	0.130086	0.198962	0.284584
43	0.00417036	0.00577944	0.00780216	0.0268928	0.130086	0.198962	0.284584
47	0.00417036	0.00577946	0.00780216	0.0268929	0.130086	0.198962	0.284584
52	0.00417036	0.00577952	0.00780216	0.026893	0.130086	0.198962	0.284584
57	0.00417036	0.00577963	0.00780216	0.0268933	0.130086	0.198962	0.284584
64	0.00417036	0.00577992	0.00780216	0.026894	0.130086	0.198962	0.284584
70	0.00417037	0.00578031	0.00780216	0.0268947	0.130086	0.198962	0.284584
78	0.00417039	0.00578105	0.00780216	0.0268958	0.130086	0.198962	0.284584
86	0.00417043	0.00578202	0.00780216	0.0268971	0.130086	0.198962	0.284584
95	0.00417054	0.00578333	0.00780216	0.0268986	0.130087	0.198962	0.284585
100	0.00417064	0.00578412	0.00780216	0.0268994	0.130087	0.198962	0.284585
105	0.00417077	0.00578494	0.00780216	0.0269002	0.130087	0.198962	0.284585
116	0.00417122	0.00578675	0.00780217	0.0269018	0.130088	0.198963	0.284586
128	0.00417199	0.00578858	0.00780219	0.0269032	0.13009	0.198964	0.284588
141	0.00417317	0.00579025	0.00780225	0.0269044	0.130091	0.198965	0.284589
156	0.00417495	0.00579169	0.00780242	0.0269052	0.130093	0.198967	0.284591
172	0.00417723	0.00579265	0.00780279	0.0269055	0.130095	0.198969	0.284593
190	0.00418006	0.0057931	0.00780358	0.0269055	0.130097	0.198972	0.284595
210	0.00418325	0.00579301	0.00780506	0.0269052	0.130098	0.198974	0.284597
232	0.00418653	0.00579242	0.00780752	0.0269045	0.1301	0.198977	0.284598
256	0.00418958	0.00579143	0.00781119	0.0269036	0.1301	0.198978	0.284599
282	0.00419213	0.00579018	0.00781613	0.0269025	0.130101	0.19898	0.284599
300	0.00419342	0.00578928	0.00781996	0.0269017	0.130101	0.19898	0.284599
312	0.00419408	0.00578867	0.00782262	0.0269012	0.1301	0.19898	0.284599
344	0.00419511	0.00578699	0.00782988	0.0268998	0.1301	0.198979	0.284598
380	0.00419517	0.00578536	0.00783771	0.0268984	0.130098	0.198978	0.284596
420	0.00419426	0.00578394	0.0078453	0.0268971	0.130097	0.198976	0.284595
464	0.00419257	0.00578276	0.0078518	0.026896	0.130095	0.198974	0.284593
512	0.00419035	0.00578182	0.00785658	0.0268951	0.130094	0.198972	0.284591
565	0.00418783	0.00578111	0.00785937	0.0268944	0.130092	0.19897	0.28459
624	0.00418519	0.00578058	0.00786006	0.0268939	0.130091	0.198968	0.284589
689	0.00418263	0.00578017	0.00785881	0.0268935	0.130089	0.198967	0.284587
761	0.00418023	0.00577988	0.00785592	0.0268932	0.130088	0.198965	0.284587
840	0.00417809	0.00577969	0.00785184	0.026893	0.130088	0.198964	0.284586
928	0.00417624	0.00577957	0.00784694	0.0268929	0.130087	0.198964	0.284585
1000	0.00417507	0.00577951	0.00784297	0.0268928	0.130087	0.198963	0.284585
1024	0.00417473	0.0057795	0.00784169	0.0268928	0.130087	0.198963	0.284585
1131	0.00417351	0.00577945	0.00783634	0.0268927	0.130086	0.198962	0.284585
1249	0.00417257	0.00577943	0.00783117	0.0268927	0.130086	0.198962	0.284584
1379	0.00417187	0.00577943	0.00782638	0.0268927	0.130086	0.198962	0.284584
1523	0.00417137	0.00577942	0.00782463	0.0268927	0.130086	0.198962	0.284584
1681	0.00417102	0.00577942	0.0078286	0.0268927	0.130086	0.198962	0.284584
1856	0.00417078	0.00577942	0.00783177	0.0268927	0.130086	0.198962	0.284584
2050	0.00417062	0.00577942	0.00783397	0.0268927	0.130086	0.198962	0.284584
2263	0.00417051	0.00577942	0.00783512	0.0268927	0.130086	0.198962	0.284584
2499	0.00417045	0.00577942	0.00783526	0.0268927	0.130086	0.198962	0.284584
2759	0.00417041	0.00577942	0.00783448	0.0268927	0.130086	0.198962	0.284584
3046	0.00417039	0.00577942	0.00783289	0.0268927	0.130086	0.198962	0.284584
3363	0.00417037	0.00577942	0.00783067	0.0268927	0.130086	0.198962	0.284584
3714	0.00417037	0.00577942	0.00782795	0.0268927	0.130086	0.198962	0.284584
4100	0.00417036	0.00577942	0.00782494	0.0268927	0.130086	0.198962	0.284584
4527	0.00417036	0.00577942	0.00782174	0.0268927	0.130086	0.198962	0.284584
4999	0.00417036	0.00577942	0.0078185	0.0268927	0.130086	0.198962	0.284584
5519	0.00417036	0.00577942	0.00781533	0.0268927	0.130086	0.198962	0.284584
6094	0.00417036	0.00577942	0.0078123	0.0268927	0.130086	0.198962	0.284584
6728	0.00417036	0.00577942	0.00780948	0.0268927	0.130086	0.198962	0.284584
7428	0.00417036	0.00577942	0.00780691	0.0268927	0.130086	0.198962	0.284584
8202	0.00417036	0.00577942	0.0078046	0.0268927	0.130086	0.198962	0.284584
9056	0.00417036	0.00577942	0.00780257	0.0268927	0.130086	0.198962	0.284584
9999	0.00417036	0.00577942	0.00780217	0.0268927	0.130086	0.198962	0.284584
11039	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
12189	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
13458	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
14859	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
16406	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
18114	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584
20000	0.00417036	0.00577942	0.00780216	0.0268927	0.130086	0.198962	0.284584

bHRA1 GW	Species	RWQS (mg/l)					
	Cl-	250					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
1	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
2	12.5337	14.5576	16.6615	29.8301	55.3499	63.6044	74.648
3	12.545	14.5745	16.6806	29.8571	55.3746	63.6134	74.6566
4	12.6479	14.6129	16.7436	29.9097	55.4478	63.6332	74.678
5	12.6762	14.6741	16.7671	29.9185	55.4875	63.6366	74.6824
6	12.665	14.6777	16.7595	29.8976	55.4808	63.6301	74.6747
7	12.656	14.6701	16.7491	29.8863	55.4736	63.6254	74.6693
8	12.6366	14.6652	16.7425	29.8786	55.4647	63.6221	74.6659
9	12.6112	14.6614	16.7409	29.8719	55.4516	63.6193	74.663
10	12.5912	14.6586	16.7321	29.8667	55.4424	63.6172	74.6611
11	12.5672	14.6532	16.7267	29.859	55.4301	63.6141	74.6571
13	12.5429	14.6494	16.7194	29.8537	55.4171	63.6122	74.6548
14	12.5413	14.6479	16.7112	29.8511	55.4127	63.611	74.6536
16	12.5394	14.6457	16.6965	29.8475	55.4044	63.6095	74.6522
17	12.538	14.644	16.6912	29.8448	55.4024	63.6084	74.6511
19	12.5365	14.6423	16.6805	29.8417	55.3896	63.6071	74.65
21	12.5356	14.6373	16.6745	29.8401	55.3732	63.6064	74.6493
23	12.5351	14.6158	16.6707	29.839	55.3625	63.6059	74.6489
26	12.5345	14.5931	16.6671	29.8355	55.3571	63.6054	74.6485
28	12.5341	14.5829	16.6653	29.8333	55.3548	63.605	74.6482
30	12.5337	14.5745	16.6637	29.8315	55.3528	63.6046	74.6479
32	12.5335	14.5678	16.6626	29.8303	55.3514	63.6044	74.6478
35	12.5334	14.5608	16.6617	29.8295	55.3503	63.6043	74.6477
39	12.5333	14.5571	16.6613	29.8291	55.3497	63.6042	74.6477
43	12.5333	14.5571	16.6611	29.8289	55.3495	63.6041	74.6476
47	12.5333	14.557	16.6609	29.8287	55.3493	63.6041	74.6476
52	12.5332	14.557	16.6608	29.8286	55.3492	63.6041	74.6476
57	12.5332	14.557	16.6608	29.8286	55.3492	63.6041	74.6476
64	12.5332	14.5569	16.6608	29.8285	55.3491	63.604	74.6476
70	12.5332	14.5569	16.6608	29.8285	55.3491	63.604	74.6476
78	12.5332	14.5569	16.6608	29.8285	55.3491	63.604	74.6476
86	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
95	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
100	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
105	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
116	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
128	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
141	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
156	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
172	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
190	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
210	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
232	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
256	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
282	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
300	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
312	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
344	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
380	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
420	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
464	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
512	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
565	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
624	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
689	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
761	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
840	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
928	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
1000	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
1024	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
1131	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
1249	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
1379	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
1523	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
1681	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
1856	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
2050	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
2263	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
2499	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
2759	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
3046	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
3363	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
3714	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
4100	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
4527	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
4999	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
5519	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
6094	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
6728	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
7428	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
8202	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
9056	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
9999	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
11039	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
12189	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
13458	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
14859	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
16406	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
18114	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476
20000	12.5332	14.5569	16.6607	29.8285	55.3491	63.604	74.6476

bHRA1 GW	Species	RWQS (mg/l)					
	Cu	2					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
1	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
2	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
3	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
4	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
5	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
6	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
7	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
8	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
9	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
10	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
11	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
13	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
14	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
16	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
17	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
19	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
21	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
23	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
26	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
28	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
30	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
32	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
35	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
39	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
43	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
47	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
52	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
57	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
64	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
70	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
78	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
86	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
95	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	0.0845605
100	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	8.46E-02
105	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	8.46E-02
116	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	8.46E-02
128	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	8.46E-02
141	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	8.46E-02
156	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	8.46E-02
172	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	8.46E-02
190	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	8.46E-02
210	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	8.46E-02
232	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	0.0624682	8.46E-02
256	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	6.25E-02	8.46E-02
282	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	6.25E-02	8.46E-02
300	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	6.25E-02	8.46E-02
312	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	6.25E-02	8.46E-02
344	0.00144793	0.00236391	0.00360327	0.0143652	0.0439206	6.25E-02	8.46E-02
380	0.00144793	0.00236391	0.00360327	0.0143652	4.39E-02	6.25E-02	8.46E-02
420	0.00144793	0.00236391	0.00360327	0.0143652	4.39E-02	6.25E-02	8.46E-02
464	0.00144793	0.00236391	0.00360327	0.0143652	4.39E-02	6.25E-02	8.46E-02
512	0.00144793	0.00236391	0.00360327	0.0143652	4.39E-02	6.25E-02	8.46E-02
565	0.00144793	0.00236391	0.00360327	0.0143652	4.39E-02	6.25E-02	8.46E-02
624	0.00144793	0.00236391	0.00360327	0.0143652	4.39E-02	6.25E-02	8.46E-02
689	0.00144793	0.00236391	0.00360327	0.0143652	4.39E-02	6.25E-02	8.46E-02
761	0.00144793	0.00236391	0.00360327	0.0143652	4.39E-02	6.25E-02	8.46E-02
840	0.00144793	0.00236391	0.00360327	0.0143652	4.39E-02	6.25E-02	8.46E-02
928	0.00144793	0.00236392	0.00360327	0.0143652	4.39E-02	6.25E-02	8.46E-02
1000	0.00144793	0.00236392	0.00360327	0.0143652	4.39E-02	6.25E-02	8.46E-02
1024	0.00144793	0.00236392	0.00360327	1.44E-02	4.39E-02	6.25E-02	8.46E-02
1131	0.00144793	0.00236394	0.00360327	1.44E-02	4.39E-02	6.25E-02	8.46E-02
1249	0.00144793	0.00236397	0.00360327	1.44E-02	4.39E-02	6.25E-02	8.46E-02
1379	0.00144793	0.00236404	0.00360327	1.44E-02	4.39E-02	6.25E-02	8.46E-02
1523	0.00144793	0.00236414	0.00360327	1.44E-02	4.39E-02	6.25E-02	8.46E-02
1681	0.00144793	0.00236429	0.00360327	1.44E-02	4.39E-02	6.25E-02	8.46E-02
1856	0.00144793	0.0023645	0.00360327	1.44E-02	4.39E-02	6.25E-02	8.46E-02
2050	0.00144793	0.00236476	0.00360327	1.44E-02	4.39E-02	6.25E-02	8.46E-02
2263	0.00144793	0.00236507	0.00360327	1.44E-02	4.39E-02	6.25E-02	8.46E-02
2499	0.00144793	0.0023654	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
2759	0.00144793	0.00236575	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
3046	0.00144793	0.00236608	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
3363	0.00144793	0.00236639	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
3714	0.00144793	0.00236664	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
4100	0.00144793	2.37E-03	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
4527	0.00144793	2.37E-03	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
4999	0.00144793	2.37E-03	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
5519	0.00144793	2.37E-03	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
6094	0.00144793	2.37E-03	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
6728	0.00144793	2.37E-03	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
7428	0.00144793	2.37E-03	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
8202	0.00144793	2.37E-03	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
9056	0.00144793	2.37E-03	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
9999	1.45E-03	2.37E-03	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
11039	1.45E-03	2.37E-03	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
12189	1.45E-03	2.37E-03	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
13458	1.45E-03	2.37E-03	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
14859	1.45E-03	2.37E-03	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
16406	1.45E-03	2.36E-03	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
18114	1.45E-03	2.36E-03	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02
20000	1.45E-03	2.36E-03	3.60E-03	1.44E-02	4.39E-02	6.25E-02	8.46E-02

bHRA1 GW	Species	RWQS (mg/l)					
	Hg	0.001					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
1	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
2	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
3	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
4	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
5	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
6	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
7	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
8	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
9	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
10	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
11	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
13	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
14	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
16	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
17	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
19	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
21	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
23	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
26	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
28	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
30	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
32	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
35	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
39	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
43	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
47	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
52	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
57	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
64	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
70	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
78	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
86	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
95	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
100	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
105	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
116	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
128	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
141	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
156	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
172	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
190	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
210	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
232	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
256	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
282	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
300	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
312	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
344	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
380	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
420	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
464	0.000107495	0.000125066	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
512	0.000107495	0.000125066	0.000143468	0.000268997	0.000734398	0.000935596	0.00127005
565	0.000107495	0.000125066	0.000143468	0.000268997	0.000734398	0.000935596	0.00127005
624	0.000107495	0.000125066	0.000143468	0.000268997	0.000734398	0.000935596	0.00127005
689	0.000107495	0.000125066	0.000143468	0.000268997	0.000734398	0.000935596	0.00127005
761	0.000107496	0.000125066	0.000143468	0.000268998	0.000734398	0.000935596	0.00127005
840	0.000107496	0.000125066	0.000143468	0.000268999	0.000734398	0.000935596	0.00127005
928	0.000107498	0.000125066	0.000143468	0.000269001	0.000734398	0.000935596	0.00127005
1000	0.000107499	0.000125066	0.000143468	0.000269003	0.000734398	0.000935596	0.00127005
1024	0.0001075	0.000125066	0.000143468	0.000269003	0.000734398	0.000935596	0.00127005
1131	0.000107504	0.000125067	0.000143468	0.000269006	0.000734398	0.000935596	0.00127005
1249	0.000107509	0.000125068	0.000143468	0.00026901	0.000734398	0.000935596	0.00127005
1379	0.000107518	0.000125069	0.000143468	0.000269012	0.000734398	0.000935596	0.00127006
1523	0.000107528	0.00012507	0.000143468	0.000269014	0.000734398	0.000935596	0.00127006
1681	0.000107542	0.000125072	0.000143468	0.000269015	0.000734398	0.000935596	0.00127006
1856	0.000107557	0.000125073	0.000143468	0.000269015	0.000734398	0.000935596	0.00127006
2050	0.000107577	0.000125075	0.000143468	0.000269014	0.000734399	0.000935596	0.00127006
2263	0.000107616	0.000125076	0.000143468	0.000269012	0.0007344	0.000935596	0.00127006
2499	0.000107703	0.000125077	0.000143469	0.00026901	0.000734401	0.000935596	0.00127006
2759	0.000107859	0.000125077	0.000143469	0.000269008	0.000734403	0.000935596	0.00127006
3046	0.000108036	0.000125077	0.00014347	0.000269005	0.000734405	0.000935596	0.00127006
3363	0.000108035	0.000125076	0.000143471	0.000269003	0.000734408	0.000935596	0.00127005
3714	0.000108034	0.000125075	0.000143472	0.000269015	0.00073441	0.000935597	0.00127005
4100	0.000108033	0.000125074	0.000143473	0.000269017	0.000734411	0.000935597	0.00127005
4527	0.000108031	0.000125073	0.000143473	0.000269006	0.000734412	0.000935597	0.00127005
4999	0.00010803	0.000125072	0.000143472	0.000268998	0.000734411	0.000935597	0.00127005
5519	0.000108029	0.000125071	0.000143471	0.000268998	0.000734409	0.000935597	0.00127005
6094	0.000108029	0.000125379	0.000143468	0.000268997	0.000734406	0.000935597	0.00127005
6728	0.000108028	0.000125379	0.000143468	0.000268997	0.000734402	0.000935596	0.00127005
7428	0.000108027	0.000125379	0.000143468	0.000268997	0.000734399	0.000935596	0.00127005
8202	0.000108027	0.000125378	0.000143468	0.000268997	0.000734398	0.000935596	0.00127005
9056	0.000108027	0.000125378	0.000143468	0.000268997	0.000734398	0.000935596	0.00127005
9999	0.000108026	0.000125378	0.000143468	0.000268997	0.000734398	0.000935596	0.00127005
11039	0.000108026	0.000125378	0.000143468	0.000268997	0.000734398	0.000935596	0.00127005
12189	0.000108026	0.000125378	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
13458	0.000108026	0.000125378	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
14859	0.000108026	0.000125378	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
16406	0.000108026	0.000125378	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
18114	0.000108026	0.000125378	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005
20000	0.000108026	0.000125378	0.000143468	0.000268996	0.000734398	0.000935596	0.00127005

bHRA1 GW	Species	RWQS (mg/l)					
	Ni	0.02					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
1	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
2	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
3	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
4	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
5	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
6	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
7	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
8	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
9	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
10	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
11	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
13	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
14	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
16	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
17	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
19	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
21	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
23	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
26	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
28	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
30	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
32	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
35	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
39	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
43	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
47	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
52	0.000507479	0.000999289	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
57	0.000507479	0.000999289	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
64	0.000507479	0.00099929	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
70	0.000507479	0.000999293	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
78	0.000507479	0.000999303	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
86	0.00050748	0.000999326	0.00176203	0.0148937	0.0618924	0.0783481	0.119859
95	0.000507483	0.000999376	0.00176203	0.0148937	0.0618925	0.0783481	0.119859
100	0.000507486	0.000999418	0.00176203	0.0148937	0.0618926	0.0783481	0.119859
105	0.000507492	0.000999471	0.00176203	0.0148937	0.0618927	0.0783481	0.119859
116	0.000507513	0.000999631	0.00176203	0.0148937	0.0618931	0.0783481	0.119859
128	0.000507558	0.000999867	0.00176203	0.0148937	0.0618935	0.0783481	0.119859
141	0.000507644	0.00100018	0.00176203	0.0148937	0.0618941	0.0783481	0.119859
156	0.0005078	0.00100057	0.00176205	0.0148937	0.0618948	0.0783481	0.119859
172	0.000508032	0.00100097	0.00176208	0.0148937	0.0618955	0.0783481	0.119859
190	0.000508357	0.00100136	0.00176215	0.0148937	0.0618961	0.0783481	0.119859
210	0.000508759	0.00100167	0.00176227	0.0148938	0.0618964	0.0783481	0.11986
232	0.000509195	0.00100187	0.00176246	0.0148938	0.0618965	0.0783481	0.11986
256	0.000509609	0.00100193	0.00176272	0.0148939	0.0618963	0.0783481	0.11986
282	0.000509942	0.00100187	0.00176303	0.014894	0.0618959	0.0783481	0.119861
300	0.000510096	0.00100178	0.00176326	0.0148942	0.0618955	0.0783481	0.119862
312	0.000510165	0.0010017	0.0017634	0.0148942	0.0618952	0.0783481	0.119862
344	0.000510235	0.00100147	0.00176375	0.0148945	0.0618945	0.0783481	0.119863
380	0.000510161	0.00100119	0.00176405	0.0148948	0.0618938	0.0783481	0.119864
420	0.000509965	0.0010009	0.00176426	0.014895	0.0618933	0.0783481	0.119865
464	0.000509694	0.00100063	0.00176435	0.0148952	0.0618929	0.0783482	0.119866
512	0.000509392	0.00100038	0.00176433	0.0148954	0.0618926	0.0783482	0.119867
565	0.000509085	0.00100017	0.00176422	0.0148954	0.0618925	0.0783483	0.119866
624	0.000508795	0.000999979	0.00176404	0.0148954	0.0618924	0.0783485	0.119866
689	0.000508535	0.000999823	0.00176382	0.0148953	0.0618923	0.0783487	0.119865
761	0.000508311	0.000999695	0.00176358	0.0148951	0.0618923	0.0783489	0.119864
840	0.000508123	0.000999593	0.00176334	0.014895	0.0618923	0.0783492	0.119864
928	0.000507968	0.000999511	0.00176312	0.0148948	0.0618923	0.0783494	0.119863
1000	0.000507873	0.000999462	0.00176297	0.0148946	0.0618923	0.0783496	0.119862
1024	0.000507846	0.000999449	0.00176292	0.0148946	0.0618923	0.0783496	0.119862
1131	0.000507748	0.000999401	0.00176275	0.0148944	0.0618923	0.0783498	0.119861
1249	0.000507672	0.000999366	0.00176259	0.0148943	0.0618923	0.0783499	0.119861
1379	0.000507615	0.00099934	0.00176247	0.0148941	0.0618923	0.07835	0.11986
1523	0.000507572	0.000999322	0.00176236	0.014894	0.0618923	0.0783499	0.11986
1681	0.000507542	0.00099931	0.00176228	0.014894	0.0618923	0.0783499	0.11986
1856	0.00050752	0.000999301	0.00176221	0.0148939	0.0618923	0.0783498	0.11986
2050	0.000507505	0.000999296	0.00176216	0.0148938	0.0618923	0.0783496	0.11986
2263	0.000507495	0.000999293	0.00176212	0.0148938	0.0618923	0.0783495	0.119859
2499	0.000507488	0.000999291	0.00176209	0.0148938	0.0618923	0.0783493	0.119859
2759	0.000507484	0.00099929	0.00176207	0.0148938	0.0618923	0.0783492	0.119859
3046	0.000507482	0.000999289	0.00176205	0.0148938	0.0618923	0.078349	0.119859
3363	0.000507481	0.000999289	0.00176204	0.0148937	0.0618923	0.0783489	0.119859
3714	0.00050748	0.000999289	0.00176204	0.0148937	0.0618923	0.0783487	0.119859
4100	0.000507479	0.000999289	0.00176203	0.0148937	0.0618923	0.0783486	0.119859
4527	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783485	0.119859
4999	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783484	0.119859
5519	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783484	0.119859
6094	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783483	0.119859
6728	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783483	0.119859
7428	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783482	0.119859
8202	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783482	0.119859
9056	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783482	0.119859
9999	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783482	0.119859
11039	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
12189	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
13458	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
14859	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
16406	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
18114	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859
20000	0.000507479	0.000999288	0.00176203	0.0148937	0.0618923	0.0783481	0.119859

bHRA1 GW	Species	RWQS (mg/l)					
	SO4	250					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
1	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
2	4.02811	6.1979	7.79227	22.9604	44.9416	51.166	65.0527
3	4.20275	6.36243	7.91802	23.1536	45.032	51.3081	65.1276
4	4.60525	6.74244	8.36166	23.5052	45.5089	51.5943	65.3183
5	4.91912	6.93638	8.61906	23.8104	45.9972	51.8025	65.3843
6	4.91049	6.95568	8.61971	23.92	46.2068	51.9137	65.348
7	4.83698	7.01813	8.57176	23.9138	46.3797	51.8351	65.3121
8	4.75811	6.96952	8.51674	23.8506	46.3437	51.7652	65.2856
9	4.68768	6.93722	8.53607	23.8279	46.3285	51.7142	65.2642
10	4.65907	6.87404	8.46062	23.7988	46.3529	51.6543	65.2369
11	4.64228	6.8108	8.4164	23.6713	46.2341	51.5475	65.2108
13	4.60275	6.70426	8.35112	23.3939	46.1429	51.5256	65.1904
14	4.54899	6.69493	8.33249	23.3755	46.1198	51.4909	65.177
16	4.43761	6.66526	8.29849	23.3432	45.9988	51.4556	65.1576
17	4.38466	6.64707	8.27476	23.3186	45.909	51.4452	65.1434
19	4.3623	6.49157	8.23859	23.2873	45.6514	51.3505	65.1253
21	4.35024	6.45306	8.18445	23.2676	45.6347	51.3206	65.1138
23	4.34175	6.41331	8.16894	23.2528	45.6222	51.2992	65.1055
26	4.28033	6.38771	8.15213	23.2349	45.6067	51.2721	65.095
28	4.22942	6.36312	8.1114	23.2178	45.3288	51.2472	65.0852
30	4.17541	6.33992	8.0868	23.1627	45.2991	51.2244	65.0761
32	4.12997	6.32287	7.99622	23.0798	45.2771	51.208	65.0697
35	4.08499	6.30913	7.98887	23.0725	45.0888	51.1968	65.0648
39	4.05672	6.29984	7.93496	23.0058	45.0836	51.1924	65.0614
43	4.04867	6.27738	7.93157	22.9811	45.0796	51.189	65.0589
47	4.04156	6.27155	7.92838	22.9725	44.9461	51.1859	65.0565
52	4.03475	6.269	7.92534	22.9644	44.9434	51.183	65.0542
57	4.02959	6.25422	7.88198	22.9599	44.9414	51.1808	65.0525
64	4.02607	6.19696	7.82984	22.957	44.94	51.1621	65.0513
70	4.02396	6.19521	7.80834	22.9553	44.9392	51.1603	65.0506
78	4.02278	6.19421	7.79243	22.9543	44.9387	51.1594	65.0502
86	4.02174	6.19325	7.78893	22.9534	44.9382	51.1586	65.0498
95	4.02124	6.1928	7.78881	22.953	44.938	51.1581	65.0497
100	4.02091	6.19248	7.78874	22.9527	44.9379	51.1579	65.0495
105	4.02069	6.19226	7.78869	22.9526	44.9378	51.1577	65.0495
116	4.0206	6.19217	7.78867	22.9525	44.9378	51.1577	65.0494
128	4.02E+00	6.19E+00	7.79E+00	22.9525	44.9378	51.1576	65.0494
141	4.02E+00	6.19E+00	7.79E+00	2.30E+01	44.9377	51.1576	65.0494
156	4.02E+00	6.19E+00	7.79E+00	2.30E+01	4.49E+01	5.12E+01	6.50E+01
172	4.02E+00	6.19E+00	7.79E+00	2.30E+01	4.49E+01	5.12E+01	6.50E+01
190	4.02E+00	6.19E+00	7.79E+00	2.30E+01	4.49E+01	5.12E+01	6.50E+01
210	4.02E+00	6.19E+00	7.79E+00	2.30E+01	4.49E+01	5.12E+01	6.50E+01
232	4.02E+00	6.19E+00	7.79E+00	2.30E+01	4.49E+01	5.12E+01	6.50E+01
256	4.02E+00	6.19E+00	7.79E+00	2.30E+01	4.49E+01	5.12E+01	6.50E+01
282	4.02E+00	6.19E+00	7.79E+00	2.30E+01	4.49E+01	5.12E+01	6.50E+01
300	4.02E+00	6.19E+00	7.79E+00	2.30E+01	4.49E+01	5.12E+01	6.50E+01
312	4.02E+00	6.19E+00	7.79E+00	2.30E+01	4.49E+01	5.12E+01	6.50E+01
344	4.02E+00	6.19E+00	7.79E+00	2.30E+01	4.49E+01	5.12E+01	6.50E+01
380	4.02E+00	6.19E+00	7.79E+00	2.30E+01	4.49E+01	5.12E+01	6.50E+01
420	4.02E+00	6.19E+00	7.79E+00	2.30E+01	4.49E+01	5.12E+01	6.50E+01
464	4.02E+00	6.19E+00	7.79E+00	2.30E+01	4.49E+01	5.12E+01	6.50E+01
512	4.02E+00	6.19E+00	7.79E+00	2.30E+01	4.49E+01	5.12E+01	6.50E+01
565	4.02E+00	6.19E+00	7.79E+00	2.30E+01	4.49E+01	5.12E+01	6.50E+01
624	4.02056	6.19212	7.78866	2.30E+01	4.49E+01	5.12E+01	6.50E+01
689	4.02056	6.19212	7.78866	22.9525	4.49E+01	5.12E+01	6.50E+01
761	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
840	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
928	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
1000	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
1024	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
1131	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
1249	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
1379	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
1523	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
1681	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
1856	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
2050	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
2263	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
2499	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
2759	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
3046	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
3363	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
3714	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
4100	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
4527	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
4999	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
5519	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
6094	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
6728	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
7428	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
8202	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
9056	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
9999	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
11039	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
12189	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
13458	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
14859	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
16406	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
18114	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494
20000	4.02056	6.19212	7.78866	22.9525	44.9377	51.1576	65.0494

bHRA1 GW	Species	RWQS (mg/l)					
	Zn	5					
Time [years]	1st Percentile	5th Percentile	10th Percentile	50th Percentile	90th Percentile	95th Percentile	99th Percentile
0	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
1	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
2	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
3	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
4	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
5	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
6	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
7	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
8	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
9	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
10	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
11	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
13	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
14	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
16	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
17	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
19	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
21	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
23	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
26	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
28	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
30	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
32	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881974
35	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881975
39	0.003295	0.00652453	0.0103164	0.0758705	0.386854	0.541829	0.881976
43	0.003295	0.00652453	0.0103165	0.0758705	0.386854	0.541829	0.881979
47	0.003295	0.00652453	0.0103167	0.0758705	0.386854	0.541829	0.881981
52	0.003295	0.00652453	0.0103173	0.0758705	0.386854	0.541829	0.881985
57	0.003295	0.00652453	0.0103183	0.0758705	0.386854	0.541829	0.881989
64	0.003295	0.00652453	0.0103205	0.0758705	0.386854	0.541829	0.881993
70	0.003295	0.00652453	0.010323	0.0758705	0.386854	0.541829	0.881996
78	3.30E-03	6.52E-03	1.03E-02	0.0758705	0.386854	0.541829	0.881999
86	3.30E-03	6.52E-03	1.03E-02	7.59E-02	0.386854	0.541829	0.882001
95	3.30E-03	6.52E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
100	3.30E-03	6.52E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
105	3.30E-03	6.52E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
116	3.30E-03	6.52E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
128	3.30E-03	6.52E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
141	3.30E-03	6.53E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
156	3.30E-03	6.53E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
172	3.30E-03	6.53E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
190	3.30E-03	6.53E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
210	3.31E-03	6.53E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
232	3.31E-03	6.53E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
256	3.31E-03	6.54E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
282	3.31E-03	6.54E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
300	3.31E-03	6.54E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
312	3.31E-03	6.54E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
344	3.31E-03	6.54E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
380	3.31E-03	6.55E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
420	3.31E-03	6.55E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
464	3.30E-03	6.55E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
512	3.30E-03	6.55E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
565	3.30E-03	6.55E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
624	3.30E-03	6.55E-03	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
689	0.00329778	0.00654504	1.03E-02	7.59E-02	3.87E-01	5.42E-01	8.82E-01
761	0.00329687	0.00654356	0.0103163	0.0758841	3.87E-01	5.42E-01	8.82E-01
840	0.00329623	0.0065419	0.0103163	0.0758831	0.386855	5.42E-01	8.82E-01
928	0.00329578	0.00654013	0.0103163	0.075882	0.386855	0.541833	0.881973
1000	0.00329555	0.00653877	0.0103163	0.0758811	0.386854	0.541832	0.881973
1024	0.00329549	0.00653834	0.0103163	0.0758808	0.386854	0.541832	0.881973
1131	0.00329529	0.00653657	0.0103163	0.0758795	0.386854	0.541832	0.881973
1249	0.00329517	0.00653488	0.0103163	0.0758783	0.386854	0.541831	0.881973
1379	0.00329509	0.0065333	0.0103163	0.0758772	0.386854	0.541831	0.881973
1523	0.00329505	0.00653185	0.0103163	0.0758761	0.386854	0.54183	0.881973
1681	0.00329502	0.00653056	0.0103163	0.0758752	0.386854	0.54183	0.881973
1856	0.00329501	0.00652943	0.0103163	0.0758743	0.386854	0.54183	0.881973
2050	0.003295	0.00652844	0.0103163	0.0758736	0.386854	0.541829	0.881973
2263	0.003295	0.00652761	0.0103163	0.0758729	0.386854	0.541829	0.881973
2499	0.003295	0.00652691	0.0103163	0.0758724	0.386854	0.541829	0.881973
2759	0.003295	0.00652634	0.0103163	0.075872	0.386854	0.541829	0.881973
3046	0.003295	0.00652588	0.0103163	0.0758716	0.386854	0.541829	0.881973
3363	0.003295	0.00652551	0.0103163	0.0758713	0.386854	0.541829	0.881973
3714	0.003295	0.00652523	0.0103163	0.0758711	0.386854	0.541829	0.881973
4100	0.003295	0.00652502	0.0103163	0.0758709	0.386854	0.541829	0.881973
4527	0.003295	0.00652486	0.0103163	0.0758708	0.386854	0.541829	0.881973
4999	0.003295	0.00652475	0.0103163	0.0758707	0.386854	0.541829	0.881973
5519	0.003295	0.00652467	0.0103163	0.0758706	0.386854	0.541829	0.881973
6094	0.003295	0.00652462	0.0103163	0.0758706	0.386854	0.541829	0.881973
6728	0.003295	0.00652458	0.0103163	0.0758706	0.386854	0.541829	0.881973
7428	0.003295	0.00652456	0.0103163	0.0758706	0.386854	0.541829	0.881973
8202	0.003295	0.00652455	0.0103163	0.0758705	0.386854	0.541829	0.881973
9056	0.003295	0.00652454	0.0103163	0.0758705	0.386854	0.541829	0.881973
9999	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
11039	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
12189	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
13458	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
14859	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
16406	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
18114	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973
20000	0.003295	0.00652453	0.0103163	0.0758705	0.386854	0.541829	0.881973

H.H. & D.E. Drew Limited

Hurn Court Farm Quarry

Hurn, Dorset

Application for Waste Recovery Permit
Site Restoration Using Imported Inert Infill

Hydrogeological Risk Assessment

Version 3
27th May 2020

Appendix 9 HRA2 Results

BCL HYDRO
BCL Consultant Hydrogeologists Limited

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West Midlands, WV10 9RU. Tel: 01902 824111, Fax: 01902 824112
email: info@bclhydro.co.uk, web: http://www.bclhydro.co.uk
Registered Office: 33, Wolverhampton Road, Cannock, West Midlands, WV11 1AP
Registered in England & Wales. Company Registration Number: 4043373

iHRA2

Time(years)	Species1	Species2	Species3	Species4	Species5	Species6	Species7	Species8
	Arsenic	**Copper**	**Mercury**	**Nickel**	**Zinc**	**Chloride**	**Sulphate**	**Ammonical Nitrogen**
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.449E-08	2.328E+00	1.746E+01	2.557E-05
5	2.636E-28	0.000E+00	0.000E+00	2.067E-23	3.820E-03	8.106E+00	6.080E+01	1.389E-02
10	9.816E-16	1.214E-22	0.000E+00	2.566E-13	1.319E-02	5.440E+00	4.080E+01	2.365E-02
25	3.652E-08	1.366E-10	0.000E+00	3.013E-07	1.311E-02	9.005E-01	6.754E+00	1.237E-02
100	9.228E-05	7.779E-05	1.871E-27	1.190E-04	3.574E-04	6.287E-05	4.715E-04	5.654E-05
1000	1.550E-05	1.015E-04	2.965E-08	8.832E-06	1.314E-15	0.000E+00	0.000E+00	4.488E-24
10000	1.806E-11	6.866E-09	5.428E-08	7.292E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00

s1HRA2

Time(years)	Species1	Species2	Species3	Species4	Species5	Species6	Species7	Species8
	Arsenic	**Copper**	**Mercury**	**Nickel**	**Zinc**	**Chloride**	**Sulphate**	**Ammonical Nitrogen**
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.396E-08	2.247E+00	1.685E+01	2.523E-05
5	2.609E-28	0.000E+00	0.000E+00	2.040E-23	3.366E-03	6.109E+00	4.582E+01	1.163E-02
10	9.440E-16	1.184E-22	0.000E+00	2.447E-13	9.517E-03	2.284E+00	1.713E+01	1.548E-02
25	3.046E-08	1.200E-10	0.000E+00	2.441E-07	5.784E-03	9.173E-02	6.880E-01	4.276E-03
100	4.924E-05	4.404E-05	1.565E-27	6.201E-05	1.438E-04	3.668E-09	2.751E-08	1.891E-05
1000	7.678E-06	5.037E-05	1.503E-08	4.368E-06	5.797E-16	0.000E+00	0.000E+00	1.747E-24
10000	8.981E-12	3.421E-09	2.712E-08	3.623E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00

s2HRA2

Time(years)	Species1	Species2	Species3	Species4	Species5	Species6	Species7	Species8
	Arsenic	**Copper**	**Mercury**	**Nickel**	**Zinc**	**Chloride**	**Sulphate**	**Ammonical Nitrogen**
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.467E-08	2.356E+00	1.767E+01	2.568E-05
5	2.646E-28	0.000E+00	0.000E+00	2.076E-23	3.992E-03	9.134E+00	6.850E+01	1.476E-02
10	9.947E-16	1.225E-22	0.000E+00	2.608E-13	1.496E-02	7.287E+00	5.465E+01	2.829E-02
25	3.906E-08	1.431E-10	0.000E+00	3.261E-07	1.859E-02	2.187E+00	1.640E+01	1.828E-02
100	1.287E-04	1.034E-04	2.000E-27	1.696E-04	7.323E-04	3.681E-03	2.761E-02	1.544E-04
1000	2.348E-05	1.533E-04	4.385E-08	1.339E-05	2.274E-15	1.776E-36	1.332E-35	9.415E-24
10000	2.722E-11	1.033E-08	8.148E-08	1.101E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00

s3HRA2

Time(years)	Species1	Species2	Species3	Species4	Species5	Species6	Species7	Species8
	Arsenic	**Copper**	**Mercury**	**Nickel**	**Zinc**	**Chloride**	**Sulphate**	**Ammonical Nitrogen**
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.902E-09	1.883E-01	2.911E+00	1.217E-06
5	2.953E-29	0.000E+00	0.000E+00	2.119E-24	1.719E-04	6.556E-01	1.013E+01	6.615E-04
10	1.099E-16	8.501E-24	0.000E+00	2.630E-14	5.937E-04	4.400E-01	6.800E+00	1.126E-03
25	4.091E-09	9.561E-12	0.000E+00	3.088E-08	5.899E-04	7.283E-02	1.126E+00	5.891E-04
100	1.033E-05	5.445E-06	1.309E-28	1.220E-05	1.608E-05	5.085E-06	7.859E-05	2.692E-06
1000	1.736E-06	7.102E-06	2.075E-09	9.053E-07	5.912E-17	0.000E+00	0.000E+00	2.137E-25
10000	2.022E-12	4.806E-10	3.800E-09	7.474E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00

s4HRA2

Time(years)	Species1	Species2	Species3	Species4	Species5	Species6	Species7	Species8
	Arsenic	**Copper**	**Mercury**	**Nickel**	**Zinc**	**Chloride**	**Sulphate**	**Ammonical Nitrogen**
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.449E-08	2.328E+00	1.746E+01	2.557E-05
5	2.636E-28	0.000E+00	0.000E+00	2.067E-23	3.820E-03	8.106E+00	6.080E+01	1.389E-02
10	9.816E-16	1.214E-22	0.000E+00	2.566E-13	1.319E-02	5.440E+00	4.080E+01	2.365E-02
25	3.652E-08	1.366E-10	0.000E+00	3.013E-07	1.311E-02	9.005E-01	6.754E+00	1.237E-02
100	9.228E-05	7.779E-05	1.871E-27	1.190E-04	3.574E-04	6.287E-05	4.715E-04	5.654E-05
1000	1.550E-05	1.015E-04	2.965E-08	8.832E-06	1.314E-15	0.000E+00	0.000E+00	4.488E-24
10000	1.806E-11	6.866E-09	5.428E-08	7.292E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00

s5HRA2

Time(years)	Species1	Species2	Species3	Species4	Species5	Species6	Species7	Species8
	Arsenic	**Copper**	**Mercury**	**Nickel**	**Zinc**	**Chloride**	**Sulphate**	**Ammonical Nitrogen**
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.449E-08	2.328E+00	1.746E+01	2.557E-05
5	2.636E-28	0.000E+00	0.000E+00	2.067E-23	3.820E-03	8.106E+00	6.080E+01	1.389E-02
10	9.816E-16	1.214E-22	0.000E+00	2.566E-13	1.319E-02	5.440E+00	4.080E+01	2.365E-02
25	3.652E-08	1.366E-10	0.000E+00	3.013E-07	1.311E-02	9.005E-01	6.754E+00	1.237E-02
100	9.228E-05	7.779E-05	1.871E-27	1.190E-04	3.574E-04	6.287E-05	4.715E-04	5.654E-05
1000	1.550E-05	1.015E-04	2.965E-08	8.832E-06	1.314E-15	0.000E+00	0.000E+00	4.488E-24
10000	1.806E-11	6.866E-09	5.428E-08	7.292E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00

s6HRA2

Time(years)	Species1	Species2	Species3	Species4	Species5	Species6	Species7	Species8
	Arsenic	**Copper**	**Mercury**	**Nickel**	**Zinc**	**Chloride**	**Sulphate**	**Ammonical Nitrogen**
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.053E-05	2.326E+00	1.745E+01	3.277E-04
5	1.530E-17	2.916E-25	0.000E+00	7.485E-15	5.496E-03	4.968E+00	3.726E+01	1.208E-02
10	1.595E-10	4.034E-14	0.000E+00	3.276E-09	9.968E-03	4.152E+00	3.114E+01	1.391E-02
25	2.543E-06	2.065E-07	0.000E+00	7.476E-06	6.719E-03	4.531E-01	3.398E+00	6.467E-03
100	1.033E-04	1.910E-04	6.515E-18	1.029E-04	2.794E-04	9.001E-05	6.751E-04	8.777E-05
1000	7.882E-06	4.598E-05	8.157E-08	4.972E-06	2.593E-11	0.000E+00	0.000E+00	4.640E-16
10000	8.638E-10	4.790E-08	2.437E-08	1.256E-10	0.000E+00	0.000E+00	0.000E+00	0.000E+00

s7HRA2

Time(years)	Species1	Species2	Species3	Species4	Species5	Species6	Species7	Species8
	Arsenic	**Copper**	**Mercury**	**Nickel**	**Zinc**	**Chloride**	**Sulphate**	**Ammonical Nitrogen**
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.150E-23	3.715E-01	2.787E+00	2.141E-13
5	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.093E-05	2.497E+01	1.873E+02	4.641E-03
10	0.000E+00	0.000E+00	0.000E+00	0.000E+00	7.728E-03	1.508E+01	1.131E+02	5.299E-02
25	2.004E-21	9.230E-33	0.000E+00	1.547E-17	5.042E-02	2.223E+00	1.667E+01	4.276E-02
100	1.256E-06	6.221E-09	0.000E+00	8.749E-06	7.908E-05	1.522E-04	1.141E-03	4.547E-06
1000	3.445E-05	4.894E-04	7.704E-13	9.891E-06	0.000E+00	0.000E+00	0.000E+00	0.000E+00
10000	2.091E-24	3.372E-16	2.791E-07	1.519E-29	0.000E+00	0.000E+00	0.000E+00	0.000E+00

s8HRA2

Time(years)	Species1	Species2	Species3	Species4	Species5	Species6	Species7	Species8
	Arsenic	**Copper**	**Mercury**	**Nickel**	**Zinc**	**Chloride**	**Sulphate**	**Ammonical Nitrogen**
1	4.903E-06	3.044E-06	2.791E-29	7.394E-06	7.460E-04	1.475E-01	1.106E+00	7.835E-04
5	5.105E-05	1.478E-04	3.632E-11	4.519E-05	4.537E-04	8.845E-02	6.634E-01	4.703E-04
10	4.558E-05	1.687E-04	7.227E-09	3.428E-05	2.394E-04	4.667E-02	3.500E-01	2.482E-04
25	1.169E-05	4.953E-05	1.274E-07	6.441E-06	3.517E-05	6.857E-03	5.143E-02	3.646E-05
100	5.667E-10	3.247E-08	7.526E-08	4.944E-10	2.408E-09	4.694E-07	3.521E-06	2.496E-09
1000	0.000E+00	2.288E-38	1.014E-11	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00
10000	0.000E+00	0.000E+00	1.392E-38	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00

s9HRA2

Time(years)	Species1	Species2	Species3	Species4	Species5	Species6	Species7	Species8
	Arsenic	**Copper**	**Mercury**	**Nickel**	**Zinc**	**Chloride**	**Sulphate**	**Ammonical Nitrogen**
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	3.615E-08	2.210E+00	1.657E+01	1.859E-05
5	1.981E-29	0.000E+00	0.000E+00	2.607E-24	3.481E-03	8.330E+00	6.248E+01	1.339E-02
10	2.716E-16	1.545E-23	0.000E+00	9.203E-14	1.289E-02	5.688E+00	4.266E+01	2.385E-02
25	2.223E-08	6.077E-11	0.000E+00	2.038E-07	1.357E-02	9.567E-01	7.176E+00	1.305E-02
100	8.546E-05	6.630E-05	1.863E-28	1.134E-04	4.149E-04	6.724E-05	5.043E-04	7.030E-05
1000	1.706E-05	1.087E-04	2.493E-08	9.868E-06	4.153E-15	0.000E+00	0.000E+00	3.268E-23
10000	3.169E-11	9.970E-09	5.785E-08	1.451E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00

s10HRA2

Time(years)	Species1	Species2	Species3	Species4	Species5	Species6	Species7	Species8
	Arsenic	**Copper**	**Mercury**	**Nickel**	**Zinc**	**Chloride**	**Sulphate**	**Ammonical Nitrogen**
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.232E-06	2.944E+00	2.208E+01	1.280E-04
5	1.524E-22	2.058E-33	0.000E+00	8.369E-19	5.944E-03	6.718E+00	5.038E+01	1.617E-02
10	7.020E-13	4.706E-18	0.000E+00	4.841E-11	1.421E-02	4.119E+00	3.090E+01	2.164E-02
25	4.515E-07	8.474E-09	0.000E+00	2.167E-06	1.027E-02	6.365E-01	4.774E+00	8.538E-03
100	1.287E-04	1.669E-04	2.518E-22	1.430E-04	1.319E-04	4.370E-05	3.278E-04	1.360E-05
1000	8.167E-06	6.344E-05	6.789E-08	4.209E-06	4.409E-19	0.000E+00	0.000E+00	4.444E-30
10000	3.712E-13	5.306E-10	3.513E-08	6.230E-15	0.000E+00	0.000E+00	0.000E+00	0.000E+00

s11HRA2

Time(years)	Species1	Species2	Species3	Species4	Species5	Species6	Species7	Species8
	Arsenic	**Copper**	**Mercury**	**Nickel**	**Zinc**	**Chloride**	**Sulphate**	**Ammonical Nitrogen**
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	9.038E-07	2.328E+00	1.746E+01	9.838E-05
5	1.007E-22	9.759E-34	0.000E+00	6.172E-19	6.652E-03	8.106E+00	6.080E+01	1.833E-02
10	6.366E-13	3.615E-18	0.000E+00	4.640E-11	1.694E-02	5.440E+00	4.080E+01	2.618E-02
25	4.963E-07	8.711E-09	0.000E+00	2.436E-06	1.295E-02	9.005E-01	6.754E+00	1.126E-02
100	1.570E-04	2.000E-04	1.904E-22	1.757E-04	1.934E-04	6.287E-05	4.715E-04	2.459E-05
1000	1.049E-05	8.058E-05	8.139E-08	5.440E-06	2.774E-18	0.000E+00	0.000E+00	4.244E-28
10000	5.800E-13	7.601E-10	4.450E-08	1.035E-14	0.000E+00	0.000E+00	0.000E+00	0.000E+00

s12HRA2

Time(years)	Species1	Species2	Species3	Species4	Species5	Species6	Species7	Species8
	Arsenic	**Copper**	**Mercury**	**Nickel**	**Zinc**	**Chloride**	**Sulphate**	**Ammonical Nitrogen**
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	6.449E-08	2.328E+00	1.746E+01	2.557E-05
5	2.636E-28	0.000E+00	0.000E+00	2.067E-23	3.820E-03	8.106E+00	6.080E+01	1.389E-02
10	9.816E-16	1.214E-22	0.000E+00	2.566E-13	1.319E-02	5.440E+00	4.080E+01	2.365E-02
25	3.652E-08	1.366E-10	0.000E+00	3.013E-07	1.311E-02	9.005E-01	6.754E+00	1.237E-02
100	9.228E-05	7.779E-05	1.871E-27	1.190E-04	3.574E-04	6.287E-05	4.715E-04	5.654E-05
1000	1.550E-05	1.015E-04	2.965E-08	8.832E-06	1.314E-15	0.000E+00	0.000E+00	4.488E-24
10000	1.806E-11	6.866E-09	5.428E-08	7.292E-13	0.000E+00	0.000E+00	0.000E+00	0.000E+00

s13HRA2

Time(years)	Species1	Species2	Species3	Species4	Species5	Species6	Species7	Species8
	Arsenic	**Copper**	**Mercury**	**Nickel**	**Zinc**	**Chloride**	**Sulphate**	**Ammonical Nitrogen**
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	2.328E+00	1.746E+01	5.782E-13
5	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	8.106E+00	6.080E+01	3.469E-04
10	1.838E-34	0.000E+00	0.000E+00	0.000E+00	0.000E+00	5.440E+00	4.080E+01	4.241E-03
25	1.029E-15	0.000E+00	0.000E+00	0.000E+00	2.793E-32	9.005E-01	6.754E+00	1.118E-02
100	1.643E-06	0.000E+00	0.000E+00	2.077E-13	6.368E-10	6.287E-05	4.715E-04	1.287E-03
1000	3.172E-05	2.637E-37	1.302E-10	1.286E-05	1.884E-04	0.000E+00	0.000E+00	2.217E-10
10000	2.848E-08	5.138E-08	6.259E-08	8.561E-07	4.829E-06	0.000E+00	0.000E+00	0.000E+00

rHRA2

Time(years)	Species1	Species2	Species3	Species4	Species5	Species6	Species7	Species8
	Arsenic	**Copper**	**Mercury**	**Nickel**	**Zinc**	**Chloride**	**Sulphate**	**Ammonical Nitrogen**
1	0.000E+00	0.000E+00	0.000E+00	0.000E+00	1.935E-07	1.339E+01	4.366E+01	3.835E-05
5	3.163E-28	0.000E+00	0.000E+00	6.202E-23	1.146E-02	4.661E+01	1.520E+02	2.084E-02
10	1.178E-15	3.643E-22	0.000E+00	7.698E-13	3.958E-02	3.128E+01	1.020E+02	3.548E-02
25	4.383E-08	4.098E-10	0.000E+00	9.039E-07	3.933E-02	5.178E+00	1.688E+01	1.856E-02
100	1.107E-04	2.334E-04	3.741E-27	3.571E-04	1.072E-03	3.615E-04	1.179E-03	8.481E-05
1000	1.860E-05	3.044E-04	5.930E-08	2.650E-05	3.941E-15	0.000E+00	0.000E+00	6.732E-24
10000	2.167E-11	2.060E-08	1.086E-07	2.188E-12	0.000E+00	0.000E+00	0.000E+00	0.000E+00

H.H. & D.E. Drew Limited

Hurn Court Farm Quarry

Hurn, Dorset

Application for Waste Recovery Permit
Site Restoration Using Imported Inert Infill

Hydrogeological Risk Assessment

Version 3
27th May 2020

Appendix 10 Statistical Analysis of Baseline Groundwater Quality

BCL HYDRO
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D'Agostino's Test for Normal / Log-Normal Distribution
From: "Techniques for the Interpretation of Landfill Monitoring Data" (Guidance Notes), EA Final technical report P1-471, 2002.

Chloride
Concentrations <LOD excluded.

Time-series plot does not suggest there is a clear trend in the data over time

Baseline Data (mg/l)

Date	Up Gradient			
18/12/2017	70.2			
15/12/2017	70.8			
22/12/2017	38.4			
29/12/2017	58.6			
05/01/2018	57.8			
12/01/2018	55.4			
19/01/2018	57.5			
26/01/2018	62.4			
02/02/2018	52			
09/02/2018	61.3			
16/02/2018	55.8			
23/02/2018	49.9			
05/03/2018	55.4			
09/03/2018	50.8			
16/03/2018	55.8			
23/03/2018	52.9			
30/03/2018	53.8			
06/04/2018	58.8			
23/01/2019	83.1			
14/02/2019	67.5			
27/02/2019	24.90			
11/04/2019	81.1			
01/07/2019	89.4			
11/04/2019	16.9			
01/07/2019	20.1			

Natural Logs of Baseline Data

Date	Up Gradient			
18/12/2017	4.25135			
15/12/2017	4.25986			
22/12/2017	3.64806			
29/12/2017	4.07073			
05/01/2018	4.05699			
12/01/2018	4.01458			
19/01/2018	4.05178			
26/01/2018	4.13357			
02/02/2018	3.95124			
09/02/2018	4.11578			
16/02/2018	4.02177			
23/02/2018	3.91002			
05/03/2018	4.01458			
09/03/2018	3.9279			
16/03/2018	4.02177			
23/03/2018	3.9684			
30/03/2018	3.98527			
06/04/2018	4.07414			
23/01/2019	4.42004			
14/02/2019	4.21213			
27/02/2019	3.21487			
11/04/2019	4.39568			
01/07/2019	4.49312			
11/04/2019	2.82731			
01/07/2019	3.00072			

D'Agostino's Test for Normal Distribution, P1

Count [x]	Sorted Data [A]	x-(n+1)/2 [B]	Product of A & B
1	16.9	-12	-202.8
2	20.1	-11	-221.1
3	24.90	-10	-249
4	38.4	-9	-345.6
5	49.9	-8	-399.2
6	50.8	-7	-355.6
7	52	-6	-312
8	52.9	-5	-264.5
9	53.8	-4	-215.2
10	55.4	-3	-166.2
11	55.4	-2	-110.8
12	55.8	-1	-55.8
13	55.8	0	0
14	57.5	1	57.5
15	57.8	2	115.6
16	58.6	3	175.8
17	58.8	4	235.2
18	61.3	5	306.5
19	62.4	6	374.4
20	67.5	7	472.5
21	70.2	8	561.6
22	70.8	9	637.2
23	81.1	10	811
24	83.1	11	914.1
25	89.4	12	1072.8

NORMALITY DISTRIBUTION TEST		
n	25	
Mean	56.02	
Standard Deviatio	17.45	
T	2836.40	
D	0.260	
Y	-3.685	
Y 1% value	-3.73	
Y 99% value	0.81	
Y in range? (& therefore Data is Normally Distributed)	Yes	
Parameter level and percentile (assuming normal distribution)		
μ + 2σ	91	mg/l
Percentile	97.725%	
μ + 3σ	108	mg/l
Percentile	99.865%	

LOG-NORMALITY DISTRIBUTION TEST		
n	25	
Mean	3.96	
Standard Deviatio	0.40	
T	60.11	
D	0.239	
Y	-7.233	
Y 1% value	-3.73	
Y 99% value	0.81	
Y in range? (& therefore Data is Log-Normally Distributed)	No	
Parameter level and percentile (assuming log-normal distribution)		
μ + 2σ	N/A	mg/l
Percentile	N/A	
μ + 3σ	N/A	mg/l
Percentile	N/A	

D'Agostino's Test for Log-Normal Distribution, P1

Count [x]	Sorted Data [A]	x-(n+1)/2 [B]	Product of A & B
1	2.82731	-12	-33.9
2	3.00072	-11	-33.0
3	3.21487	-10	-32.1
4	3.64806	-9	-32.8
5	3.91002	-8	-31.3
6	3.9279	-7	-27.5
7	3.95124	-6	-23.7
8	3.9684	-5	-19.8
9	3.98527	-4	-15.9
10	4.01458	-3	-12.0
11	4.01458	-2	-8.0
12	4.02177	-1	-4.0
13	4.02177	0	0.0
14	4.05178	1	4.1
15	4.05699	2	8.1
16	4.07073	3	12.2
17	4.07414	4	16.3
18	4.11578	5	20.6
19	4.13357	6	24.8
20	4.21213	7	29.5
21	4.25135	8	34.0
22	4.25986	9	38.3
23	4.39568	10	44.0
24	4.42004	11	48.6
25	4.49312	12	53.9

D'Agostino's Test for Normal / Log-Normal Distribution
From: "Techniques for the Interpretation of Landfill Monitoring Data" (Guidance Notes), EA Final technical report P1-471, 2002.

Chloride
Concentrations <LOD excluded.

Time-series plot does not suggest there is a clear trend in the data over time

Baseline Data (mg/l)

Date	Down Gradient			
18/12/2017	14.1			
15/12/2017	14			
22/12/2017	13.2			
29/12/2017	13.1			
05/01/2018	14.1			
12/01/2018	14.2			
19/01/2018	13.2			
26/01/2018	18.9			
02/02/2018	13.3			
09/02/2018	13.5			
16/02/2018	13.9			
23/02/2018	14			
05/03/2018	17.4			
09/03/2018	14.9			
16/03/2018	16.6			
23/03/2018	13.8			
30/03/2018	13.3			
06/04/2018	15.9			
23/01/2019	18.3			
14/02/2019	31.1			
27/02/2019	38.4			
11/04/2019	18.9			
01/07/2019	20.7			
11/04/2019	25.6			
01/07/2019	30.5			

Natural Logs of Baseline Data

Date	Down Gradient			
18/12/2017	2.64617			
15/12/2017	2.63906			
22/12/2017	2.58022			
29/12/2017	2.57261			
05/01/2018	2.64617			
12/01/2018	2.65324			
19/01/2018	2.58022			
26/01/2018	2.93916			
02/02/2018	2.58776			
09/02/2018	2.60269			
16/02/2018	2.63189			
23/02/2018	2.63906			
05/03/2018	2.85647			
09/03/2018	2.70136			
16/03/2018	2.8094			
23/03/2018	2.62467			
30/03/2018	2.58776			
06/04/2018	2.76632			
23/01/2019	2.9069			
14/02/2019	3.43721			
27/02/2019	3.64806			
11/04/2019	2.93916			
01/07/2019	3.03013			
11/04/2019	3.24259			
01/07/2019	3.41773			

D'Agostino's Test for Normal Distribution, P1

Count [x]	Sorted Data [A]	x-(n+1)/2 [B]	Product of A & B
1	13.1	-12	-157.2
2	13.2	-11	-145.2
3	13.2	-10	-132
4	13.3	-9	-119.7
5	13.3	-8	-106.4
6	13.5	-7	-94.5
7	13.8	-6	-82.8
8	13.9	-5	-69.5
9	14	-4	-56
10	14	-3	-42
11	14.1	-2	-28.2
12	14.1	-1	-14.1
13	14.2	0	0
14	14.9	1	14.9
15	15.9	2	31.8
16	16.6	3	49.8
17	17.4	4	69.6
18	18.3	5	91.5
19	18.9	6	113.4
20	18.9	7	132.3
21	20.7	8	165.6
22	25.6	9	230.4
23	30.5	10	305
24	31.1	11	342.1
25	38.4	12	460.8

NORMALITY DISTRIBUTION TEST		
n	25	
Mean	17.80	
Standard Deviatio	6.68	
T	959.60	
D	0.230	
Y	-8.730	
Y 1% value	-3.73	
Y 99% value	0.81	
Y in range? (& therefore Data is Normally Distributed)	No	
Parameter level and percentile (assuming normal distribution)		
μ + 2σ	N/A	mg/l
Percentile	N/A	
μ + 3σ	N/A	mg/l
Percentile	N/A	

LOG-NORMALITY DISTRIBUTION TEST		
n	25	
Mean	2.83	
Standard Deviatio	0.31	
T	47.43	
D	0.247	
Y	-5.782	
Y 1% value	-3.73	
Y 99% value	0.81	
Y in range? (& therefore Data is Log-Normally Distributed)	No	
Parameter level and percentile (assuming log-normal distribution)		
μ + 2σ	N/A	mg/l
Percentile	N/A	
μ + 3σ	N/A	mg/l
Percentile	N/A	

D'Agostino's Test for Log-Normal Distribution, P1

Count [x]	Sorted Data [A]	x-(n+1)/2 [B]	Product of A & B
1	2.57261	-12	-30.9
2	2.58022	-11	-28.4
3	2.58022	-10	-25.8
4	2.58776	-9	-23.3
5	2.58776	-8	-20.7
6	2.60269	-7	-18.2
7	2.62467	-6	-15.7
8	2.63189	-5	-13.2
9	2.63906	-4	-10.6
10	2.63906	-3	-7.9
11	2.64617	-2	-5.3
12	2.64617	-1	-2.6
13	2.65324	0	0.0
14	2.70136	1	2.7
15	2.76632	2	5.5
16	2.8094	3	8.4
17	2.85647	4	11.4
18	2.9069	5	14.5
19	2.93916	6	17.6
20	2.93916	7	20.6
21	3.03013	8	24.2
22	3.24259	9	29.2
23	3.41773	10	34.2
24	3.43721	11	37.8
25	3.64806	12	43.8

D'Agostino's Test for Normal / Log-Normal Distribution
From: "Techniques for the Interpretation of Landfill Monitoring Data" (Guidance Notes), EA Final technical report P1-471, 2002.

Copper
Concentrations <LOD excluded.

Time-series plot does not suggest there is a clear trend in the data over time

Baseline Data (mg/l)

Date	Up Gradient			
18/12/2017	0.025			
15/12/2017	0.022			
22/12/2017	0.037			
29/12/2017	0.001			
05/01/2018	0.003			
12/01/2018	0.01			
19/01/2018	0.014			
26/01/2018	0.01			
02/02/2018	0.003			
09/02/2018	0.003			
16/02/2018	0.008			
23/02/2018	0.047			
05/03/2018	0.042			
09/03/2018	0.003			
16/03/2018	0.021			
23/03/2018	0.025			
30/03/2018				
06/04/2018				
23/01/2019				
14/02/2019				
27/02/2019				
11/04/2019				
01/07/2019				
11/04/2019				
01/07/2019				

Natural Logs of Baseline Data

Date	Up Gradient			
18/12/2017	-3.68888			
15/12/2017	-3.81671			
22/12/2017	-3.29684			
29/12/2017	-6.90776			
05/01/2018	-5.80914			
12/01/2018	-4.60517			
19/01/2018	-4.2687			
26/01/2018	-4.60517			
02/02/2018	-5.80914			
09/02/2018	-5.80914			
16/02/2018	-4.82831			
23/02/2018	-3.05761			
05/03/2018	-3.17009			
09/03/2018	-5.80914			
16/03/2018	-3.86323			
23/03/2018	-3.68888			
30/03/2018				
06/04/2018				
23/01/2019				
14/02/2019				
27/02/2019				
11/04/2019				
01/07/2019				
11/04/2019				
01/07/2019				

D'Agostino's Test for Normal Distribution, P1

Count [x]	Sorted Data [A]	x-(n+1)/2 [B]	Product of A & B
1	0.001	-7.5	-0.0075
2	0.003	-6.5	-0.0195
3	0.003	-5.5	-0.0165
4	0.003	-4.5	-0.0135
5	0.003	-3.5	-0.0105
6	0.008	-2.5	-0.02
7	0.01	-1.5	-0.015
8	0.01	-0.5	-0.005
9	0.014	0.5	0.007
10	0.021	1.5	0.0315
11	0.022	2.5	0.055
12	0.025	3.5	0.0875
13	0.025	4.5	0.1125
14	0.037	5.5	0.2035
15	0.042	6.5	0.273
16	0.047	7.5	0.3525

NORMALITY DISTRIBUTION TEST		
n	16	
Mean	0.02	
Standard Deviatio	0.01	
T	1.02	
D	0.266	
Y	-2.090	
Y 1% value	-3.92	
Y 99% value	0.59	
Y in range? (& therefore Data is Normally Distributed)	Yes	
Parameter level and percentile (assuming normal distribution)		
μ + 2σ	0.047	mg/l
Percentile	97.725%	
μ + 3σ	0.062	mg/l
Percentile	99.865%	

LOG-NORMALITY DISTRIBUTION TEST		
n	16	
Mean	-4.56	
Standard Deviatio	1.16	
T	80.62	
D	0.271	
Y	-1.479	
Y 1% value	-3.92	
Y 99% value	0.59	
Y in range? (& therefore Data is Log-Normally Distributed)	Yes	
Parameter level and percentile (assuming log-normal distribution)		
μ + 2σ	0.106	mg/l
Percentile	97.725%	
μ + 3σ	0.340	mg/l
Percentile	99.865%	

D'Agostino's Test for Log-Normal Distribution, P1

Count [x]	Sorted Data [A]	x-(n+1)/2 [B]	Product of A & B
1	-6.90776	-8	51.8
2	-5.80914	-7	37.8
3	-5.80914	-6	32.0
4	-5.80914	-5	26.1
5	-5.80914	-4	20.3
6	-4.82831	-3	12.1
7	-4.60517	-2	6.9
8	-4.60517	-1	2.3
9	-4.2687	1	-2.1
10	-3.86323	2	-5.8
11	-3.81671	3	-9.5
12	-3.68888	4	-12.9
13	-3.68888	5	-16.6
14	-3.29684	6	-18.1
15	-3.17009	7	-20.6
16	-3.05761	8	-22.9

D'Agostino's Test for Normal / Log-Normal Distribution
From: "Techniques for the Interpretation of Landfill Monitoring Data" (Guidance Notes), EA Final technical report P1-471, 2002.

Copper
Concentrations <LOD excluded.

Time-series plot does not suggest there is a clear trend in the data over time

Baseline Data (mg/l)

Date	Down Gradient			
18/12/2017	0.033			
15/12/2017	0.019			
22/12/2017	0.018			
29/12/2017	0.021			
05/01/2018	0.004			
12/01/2018	0.012			
19/01/2018	0.021			
26/01/2018	0.012			
02/02/2018	0.004			
09/02/2018	0.008			
16/02/2018				
23/02/2018	0.041			
05/03/2018	0.017			
09/03/2018	0.029			
16/03/2018	0.004			
23/03/2018	0.012			
30/03/2018				
06/04/2018				
23/01/2019				
14/02/2019				
27/02/2019				
11/04/2019				
01/07/2019				
11/04/2019				
01/07/2019				

Natural Logs of Baseline Data

Date	Down Gradient			
18/12/2017	-3.41125			
15/12/2017	-3.96332			
22/12/2017	-4.01738			
29/12/2017	-3.86323			
05/01/2018	-5.52146			
12/01/2018	-4.42285			
19/01/2018	-3.86323			
26/01/2018	-4.42285			
02/02/2018	-5.52146			
09/02/2018	-4.82831			
16/02/2018				
23/02/2018	-3.19418			
05/03/2018	-4.07454			
09/03/2018	-3.54046			
16/03/2018	-5.52146			
23/03/2018	-4.42285			
30/03/2018				
06/04/2018				
23/01/2019				
14/02/2019				
27/02/2019				
11/04/2019				
01/07/2019				
11/04/2019				
01/07/2019				

D'Agostino's Test for Normal Distribution, P1

Count [x]	Sorted Data [A]	x-(n+1)/2 [B]	Product of A & B
1	0.004	-7	-0.028
2	0.004	-6	-0.024
3	0.004	-5	-0.02
4	0.008	-4	-0.032
5	0.012	-3	-0.036
6	0.012	-2	-0.024
7	0.012	-1	-0.012
8	0.017	0	0
9	0.018	1	0.018
10	0.019	2	0.038
11	0.021	3	0.063
12	0.021	4	0.084
13	0.029	5	0.145
14	0.033	6	0.198
15	0.041	7	0.287

NORMALITY DISTRIBUTION TEST		
n	15	
Mean	0.02	
Standard Deviatio	0.01	
T	0.66	
D	0.267	
Y	-1.966	
Y 1% value	-3.94	
Y 99% value	0.56	
Y in range? (& therefore Data is Normally Distributed)	Yes	
Parameter level and percentile (assuming normal distribution)		
μ + 2σ	0.039	mg/l
Percentile	97.725%	
μ + 3σ	0.050	mg/l
Percentile	99.865%	

LOG-NORMALITY DISTRIBUTION TEST		
n	15	
Mean	-4.31	
Standard Deviatio	0.76	
T	45.72	
D	0.269	
Y	-1.748	
Y 1% value	-3.94	
Y 99% value	0.56	
Y in range? (& therefore Data is Log-Normally Distributed)	Yes	
Parameter level and percentile (assuming log-normal distribution)		
μ + 2σ	0.061	mg/l
Percentile	97.725%	
μ + 3σ	0.13	mg/l
Percentile	99.865%	

D'Agostino's Test for Log-Normal Distribution, P1

Count [x]	Sorted Data [A]	x-(n+1)/2 [B]	Product of A & B
1	-5.52146	-7	38.7
2	-5.52146	-6	33.1
3	-5.52146	-5	27.6
4	-4.82831	-4	19.3
5	-4.42285	-3	13.3
6	-4.42285	-2	8.8
7	-4.42285	-1	4.4
8	-4.07454	0	0.0
9	-4.01738	1	-4.0
10	-3.96332	2	-7.9
11	-3.86323	3	-11.6
12	-3.86323	4	-15.5
13	-3.54046	5	-17.7
14	-3.41125	6	-20.5
15	-3.19418	7	-22.4

D'Agostino's Test for Normal / Log-Normal Distribution
From: "Techniques for the Interpretation of Landfill Monitoring Data" (Guidance Notes), EA Final technical report P1-471, 2002.

Sulphate
Concentrations <LOD excluded.

Time-series plot does not suggest there is a clear trend in the data over time

Baseline Data (mg/l)

Date	Up Gradient			
18/12/2017	58.3			
15/12/2017	59.5			
22/12/2017	36.1			
29/12/2017	58			
05/01/2018	57.3			
12/01/2018	58.2			
19/01/2018	57.3			
26/01/2018	70.6			
02/02/2018	56.6			
09/02/2018	69.9			
16/02/2018	61.3			
23/02/2018	59.2			
05/03/2018	61.2			
09/03/2018	74			
16/03/2018	64.8			
23/03/2018	65.3			
30/03/2018	64.1			
06/04/2018	61.4			
23/01/2019	62.6			
14/02/2019	30.5			
27/02/2019	32.5			
11/04/2019	74.5			
01/07/2019	59.1			
11/04/2019	28.2			
01/07/2019	21.2			

Natural Logs of Baseline Data

Date	Up Gradient			
18/12/2017	4.0656			
15/12/2017	4.08598			
22/12/2017	3.58629			
29/12/2017	4.06044			
05/01/2018	4.0483			
12/01/2018	4.06389			
19/01/2018	4.0483			
26/01/2018	4.25703			
02/02/2018	4.03601			
09/02/2018	4.24707			
16/02/2018	4.11578			
23/02/2018	4.08092			
05/03/2018	4.11415			
09/03/2018	4.30407			
16/03/2018	4.17131			
23/03/2018	4.17899			
30/03/2018	4.16044			
06/04/2018	4.11741			
23/01/2019	4.13677			
14/02/2019	3.41773			
27/02/2019	3.48124			
11/04/2019	4.3108			
01/07/2019	4.07923			
11/04/2019	3.33932			
01/07/2019	3.054			

D'Agostino's Test for Normal Distribution, P1

Count [x]	Sorted Data [A]	x-(n+1)/2 [B]	Product of A & B
1	21.2	-12	-254.4
2	28.2	-11	-310.2
3	30.5	-10	-305
4	32.5	-9	-292.5
5	36.1	-8	-288.8
6	56.6	-7	-396.2
7	57.3	-6	-343.8
8	57.3	-5	-286.5
9	58	-4	-232
10	58.2	-3	-174.6
11	58.3	-2	-116.6
12	59.1	-1	-59.1
13	59.2	0	0
14	59.5	1	59.5
15	61.2	2	122.4
16	61.3	3	183.9
17	61.4	4	245.6
18	62.6	5	313
19	64.1	6	384.6
20	64.8	7	453.6
21	65.3	8	522.4
22	69.9	9	629.1
23	70.6	10	706
24	74	11	814
25	74.5	12	894

NORMALITY DISTRIBUTION TEST		
n	25	
Mean	56.07	
Standard Deviatio	14.52	
T	2268.40	
D	0.250	
Y	-5.368	
Y 1% value	-3.73	
Y 99% value	0.81	
Y in range? (& therefore Data is Normally Distributed)	No	
Parameter level and percentile (assuming normal distribution)		
μ + 2σ	N/A	mg/l
Percentile	N/A	
μ + 3σ	N/A	mg/l
Percentile	N/A	

LOG-NORMALITY DISTRIBUTION TEST		
n	25	
Mean	3.98	
Standard Deviatio	0.33	
T	48.27	
D	0.234	
Y	-7.937	
Y 1% value	-3.73	
Y 99% value	0.81	
Y in range? (& therefore Data is Log-Normally Distributed)	No	
Parameter level and percentile (assuming log-normal distribution)		
μ + 2σ	N/A	mg/l
Percentile	N/A	
μ + 3σ	N/A	mg/l
Percentile	N/A	

D'Agostino's Test for Log-Normal Distribution, P1

Count [x]	Sorted Data [A]	x-(n+1)/2 [B]	Product of A & B
1	3.054	-12	-36.6
2	3.33932	-11	-36.7
3	3.41773	-10	-34.2
4	3.48124	-9	-31.3
5	3.58629	-8	-28.7
6	4.03601	-7	-28.3
7	4.0483	-6	-24.3
8	4.0483	-5	-20.2
9	4.06044	-4	-16.2
10	4.06389	-3	-12.2
11	4.0656	-2	-8.1
12	4.07923	-1	-4.1
13	4.08092	0	0.0
14	4.08598	1	4.1
15	4.11415	2	8.2
16	4.11578	3	12.3
17	4.11741	4	16.5
18	4.13677	5	20.7
19	4.16044	6	25.0
20	4.17131	7	29.2
21	4.17899	8	33.4
22	4.24707	9	38.2
23	4.25703	10	42.6
24	4.30407	11	47.3
25	4.3108	12	51.7

D'Agostino's Test for Normal / Log-Normal Distribution
From: "Techniques for the Interpretation of Landfill Monitoring Data" (Guidance Notes), EA Final technical report P1-471, 2002.

Sulphate
Concentrations <LOD excluded.

Time-series plot does not suggest there is a clear trend in the data over time

Baseline Data (mg/l)

Date	Down Gradient			
18/12/2017	38.1			
15/12/2017	39.2			
22/12/2017	38.8			
29/12/2017	37.8			
05/01/2018	36.9			
12/01/2018	42.8			
19/01/2018	39.8			
26/01/2018	49.6			
02/02/2018	37.5			
09/02/2018	38.1			
16/02/2018	40			
23/02/2018	36.1			
05/03/2018	41.8			
09/03/2018	61.3			
16/03/2018	36.4			
23/03/2018	39.7			
30/03/2018	39.2			
06/04/2018	37.1			
23/01/2019	39.6			
14/02/2019	18.5			
27/02/2019	23.2			
11/04/2019	52.4			
01/07/2019	34.2			
11/04/2019	43.9			
01/07/2019	51.6			

Natural Logs of Baseline Data

Date	Down Gradient			
18/12/2017	3.64021			
15/12/2017	3.66868			
22/12/2017	3.65842			
29/12/2017	3.63231			
05/01/2018	3.60821			
12/01/2018	3.75654			
19/01/2018	3.68387			
26/01/2018	3.90399			
02/02/2018	3.62434			
09/02/2018	3.64021			
16/02/2018	3.68888			
23/02/2018	3.58629			
05/03/2018	3.7329			
09/03/2018	4.11578			
16/03/2018	3.59457			
23/03/2018	3.68135			
30/03/2018	3.66868			
06/04/2018	3.61362			
23/01/2019	3.67883			
14/02/2019	2.91777			
27/02/2019	3.14415			
11/04/2019	3.95891			
01/07/2019	3.53223			
11/04/2019	3.78191			
01/07/2019	3.94352			

D'Agostino's Test for Normal Distribution, P1

Count [x]	Sorted Data [A]	x-(n+1)/2 [B]	Product of A & B
1	18.5	-12	-222
2	23.2	-11	-255.2
3	34.2	-10	-342
4	36.1	-9	-324.9
5	36.4	-8	-291.2
6	36.9	-7	-258.3
7	37.1	-6	-222.6
8	37.5	-5	-187.5
9	37.8	-4	-151.2
10	38.1	-3	-114.3
11	38.1	-2	-76.2
12	38.8	-1	-38.8
13	39.2	0	0
14	39.2	1	39.2
15	39.6	2	79.2
16	39.7	3	119.1
17	39.8	4	159.2
18	40	5	200
19	41.8	6	250.8
20	42.8	7	299.6
21	43.9	8	351.2
22	49.6	9	446.4
23	51.6	10	516
24	52.4	11	576.4
25	61.3	12	735.6

NORMALITY DISTRIBUTION TEST		
n	25	
Mean	39.74	
Standard Deviatio	8.43	
T	1288.50	
D	0.245	
Y	-6.246	
Y 1% value	-3.73	
Y 99% value	0.81	
Y in range? (& therefore Data is Normally Distributed)	No	
Parameter level and percentile (assuming normal distribution)		
μ + 2σ	N/A	mg/l
Percentile	N/A	
μ + 3σ	N/A	mg/l
Percentile	N/A	

LOG-NORMALITY DISTRIBUTION TEST		
n	25	
Mean	3.66	
Standard Deviatio	0.23	
T	34.30	
D	0.234	
Y	-8.007	
Y 1% value	-3.73	
Y 99% value	0.81	
Y in range? (& therefore Data is Log-Normally Distributed)	No	
Parameter level and percentile (assuming log-normal distribution)		
μ + 2σ	N/A	mg/l
Percentile	N/A	
μ + 3σ	N/A	mg/l
Percentile	N/A	

D'Agostino's Test for Log-Normal Distribution, P1

Count [x]	Sorted Data [A]	x-(n+1)/2 [B]	Product of A & B
1	2.91777	-12	-35.0
2	3.14415	-11	-34.6
3	3.53223	-10	-35.3
4	3.58629	-9	-32.3
5	3.59457	-8	-28.8
6	3.60821	-7	-25.3
7	3.61362	-6	-21.7
8	3.62434	-5	-18.1
9	3.63231	-4	-14.5
10	3.64021	-3	-10.9
11	3.64021	-2	-7.3
12	3.65842	-1	-3.7
13	3.66868	0	0.0
14	3.66868	1	3.7
15	3.67883	2	7.4
16	3.68135	3	11.0
17	3.68387	4	14.7
18	3.68888	5	18.4
19	3.7329	6	22.4
20	3.75654	7	26.3
21	3.78191	8	30.3
22	3.90399	9	35.1
23	3.94352	10	39.4
24	3.95891	11	43.5
25	4.11578	12	49.4

D'Agostino's Test for Normal / Log-Normal Distribution
From: "Techniques for the Interpretation of Landfill Monitoring Data" (Guidance Notes), EA Final technical report P1-471, 2002.

Zinc
Concentrations <LOD excluded.

Time-series plot does not suggest there is a clear trend in the data over time

Baseline Data (mg/l)

Date	Up Gradient			
18/12/2017				
15/12/2017				
22/12/2017				
29/12/2017	0.052			
05/01/2018				
12/01/2018				
19/01/2018				
26/01/2018	0.111			
02/02/2018				
09/02/2018				
16/02/2018				
23/02/2018	0.47			
05/03/2018				
09/03/2018				
16/03/2018				
23/03/2018	0.246			
30/03/2018				
06/04/2018				
23/01/2019	0.003			
14/02/2019	0.01			
27/02/2019	0.007			
11/04/2019	0.007			
01/07/2019	0.024			
11/04/2019				
01/07/2019				

Natural Logs of Baseline Data

Date	Up Gradient			
18/12/2017				
15/12/2017				
22/12/2017				
29/12/2017	-2.95651			
05/01/2018				
12/01/2018				
19/01/2018				
26/01/2018	-2.19823			
02/02/2018				
09/02/2018				
16/02/2018				
23/02/2018	-0.75502			
05/03/2018				
09/03/2018				
16/03/2018				
23/03/2018	-1.40242			
30/03/2018				
06/04/2018				
23/01/2019	-5.80914			
14/02/2019	-4.60517			
27/02/2019	-4.96185			
11/04/2019	-4.96185			
01/07/2019	-3.7297			
11/04/2019	-6.21461			
01/07/2019	-6.21461			

D'Agostino's Test for Normal Distribution, P1

Count [x]	Sorted Data [A]	x-(n+1)/2 [B]	Product of A & B
1	0.002	-5	-0.01
2	0.002	-4	-0.008
3	0.003	-3	-0.009
4	0.007	-2	-0.014
5	0.007	-1	-0.007
6	0.01	0	0
7	0.024	1	0.024
8	0.052	2	0.104
9	0.111	3	0.333
10	0.246	4	0.984
11	0.47	5	2.35

NORMALITY DISTRIBUTION TEST		
n	11	
Mean	0.08	
Standard Deviatio	0.15	
T	3.75	
D	0.210	
Y	-7.999	
Y 1% value	-4.07	
Y 99% value	0.41	
Y in range? (& therefore Data is Normally Distributed)	No	
Parameter level and percentile (assuming normal distribution)		
μ + 2σ	N/A	mg/l
Percentile	N/A	
μ + 3σ	N/A	mg/l
Percentile	N/A	

LOG-NORMALITY DISTRIBUTION TEST		
n	11	
Mean	-3.98	
Standard Deviatio	1.92	
T	62.62	
D	0.269	
Y	-1.435	
Y 1% value	-4.07	
Y 99% value	0.41	
Y in range? (& therefore Data is Log-Normally Distributed)	Yes	
Parameter level and percentile (assuming log-normal distribution)		
μ + 2σ	0.87	mg/l
Percentile	97.725%	
μ + 3σ	5.97	mg/l
Percentile	99.865%	

D'Agostino's Test for Log-Normal Distribution, P1

Count [x]	Sorted Data [A]	x-(n+1)/2 [B]	Product of A & B
1	-6.21461	-5	31.1
2	-6.21461	-4	24.9
3	-5.80914	-3	17.4
4	-4.96185	-2	9.9
5	-4.96185	-1	5.0
6	-4.60517	0	0.0
7	-3.7297	1	-3.7
8	-2.95651	2	-5.9
9	-2.19823	3	-6.6
10	-1.40242	4	-5.6
11	-0.75502	5	-3.8

D'Agostino's Test for Normal / Log-Normal Distribution
From: "Techniques for the Interpretation of Landfill Monitoring Data" (Guidance Notes), EA Final technical report P1-471, 2002.

Zinc
Concentrations <LOD excluded.

Time-series plot does not suggest there is a clear trend in the data over time

Baseline Data (mg/l)

Date	Down Gradient			
18/12/2017				
15/12/2017				
22/12/2017				
29/12/2017	0.246			
05/01/2018				
12/01/2018				
19/01/2018				
26/01/2018	0.129			
02/02/2018				
09/02/2018				
16/02/2018				
23/02/2018	0.301			
05/03/2018				
09/03/2018				
16/03/2018				
23/03/2018	0.088			
30/03/2018				
06/04/2018				
23/01/2019	0.023			
14/02/2019	0.01			
27/02/2019	0.004			
11/04/2019	0.01			
01/07/2019				
11/04/2019				
01/07/2019				

Natural Logs of Baseline Data

Date	Down Gradient			
18/12/2017				
15/12/2017				
22/12/2017				
29/12/2017	-1.40242			
05/01/2018				
12/01/2018				
19/01/2018				
26/01/2018	-2.04794			
02/02/2018				
09/02/2018				
16/02/2018				
23/02/2018	-1.20065			
05/03/2018				
09/03/2018				
16/03/2018				
23/03/2018	-2.43042			
30/03/2018				
06/04/2018				
23/01/2019	-3.77226			
14/02/2019	-4.60517			
27/02/2019	-5.52146			
11/04/2019	-4.60517			
01/07/2019				
11/04/2019				
01/07/2019				

D'Agostino's Test for Normal Distribution, P1

Count [x]	Sorted Data [A]	x-(n+1)/2 [B]	Product of A & B
1	0.004	-3.5	-0.014
2	0.01	-2.5	-0.025
3	0.01	-1.5	-0.015
4	0.023	-0.5	-0.0115
5	0.088	0.5	0.044
6	0.129	1.5	0.1935
7	0.246	2.5	0.615
8	0.301	3.5	1.0535

NORMALITY DISTRIBUTION TEST

n	8	
Mean	0.10	
Standard Deviatio	0.12	
T	1.84	
D	0.248	
Y	-3.204	
Y 1% value	-4.21	
Y 99% value	0.25	
Y in range? (& therefore Data is Normally Distributed)	Yes	
Parameter level and percentile (assuming normal distribution)		
μ + 2σ	0.33	mg/l
Percentile	97.725%	
μ + 3σ	0.45	mg/l
Percentile	99.865%	

LOG-NORMALITY DISTRIBUTION TEST

n	8	
Mean	-3.20	
Standard Deviatio	1.64	
T	27.64	
D	0.263	
Y	-1.764	
Y 1% value	-4.21	
Y 99% value	0.25	
Y in range? (& therefore Data is Log-Normally Distributed)	Yes	
Parameter level and percentile (assuming log-normal distribution)		
μ + 2σ	1.08	mg/l
Percentile	97.725%	
μ + 3σ	5.58	mg/l
Percentile	99.865%	

D'Agostino's Test for Log-Normal Distribution, P1

Count [x]	Sorted Data [A]	x-(n+1)/2 [B]	Product of A & B
1	-5.52146	-4	19.3
2	-4.60517	-3	11.5
3	-4.60517	-2	6.9
4	-3.77226	-1	1.9
5	-2.43042	1	-1.2
6	-2.04794	2	-3.1
7	-1.40242	3	-3.5
8	-1.20065	4	-4.2

D'Agostino's Test for Normal / Log-Normal Distribution
From: "Techniques for the Interpretation of Landfill Monitoring Data" (Guidance Notes), EA Final technical report P1-471, 2002.

Ammonical Nitrogen
Concentrations <LOD excluded.

Time-series plot does not suggest there is a clear trend in the data over time

Baseline Data (mg/l)

Date	Down Gradient			
18/12/2017				
15/12/2017				
22/12/2017				
29/12/2017	0.16			
05/01/2018	0.1			
12/01/2018				
19/01/2018				
26/01/2018				
02/02/2018				
09/02/2018				
16/02/2018				
23/02/2018				
05/03/2018				
09/03/2018	0.18			
16/03/2018				
23/03/2018				
30/03/2018				
06/04/2018				
23/01/2019	0.17			
14/02/2019	0.03			
27/02/2019	0.06			
11/04/2019	0.05			
01/07/2019	0.42			
11/04/2019	0.02			
01/07/2019	0.02			

Natural Logs of Baseline Data

Date	Down Gradient			
18/12/2017				
15/12/2017				
22/12/2017				
29/12/2017	-1.83258			
05/01/2018	-2.30259			
12/01/2018				
19/01/2018				
26/01/2018				
02/02/2018				
09/02/2018				
16/02/2018				
23/02/2018				
05/03/2018				
09/03/2018	-1.7148			
16/03/2018				
23/03/2018				
30/03/2018				
06/04/2018				
23/01/2019	-1.77196			
14/02/2019	-3.50656			
27/02/2019	-2.81341			
11/04/2019	-2.99573			
01/07/2019	-0.8675			
11/04/2019	-3.91202			
01/07/2019	-3.91202			

D'Agostino's Test for Normal Distribution, P1

Count [x]	Sorted Data [A]	x-(n+1)/2 [B]	Product of A & B
1	0.02	-4.5	-0.09
2	0.02	-3.5	-0.07
3	0.03	-2.5	-0.075
4	0.05	-1.5	-0.075
5	0.06	-0.5	-0.03
6	0.1	0.5	0.05
7	0.16	1.5	0.24
8	0.17	2.5	0.425
9	0.18	3.5	0.63
10	0.42	4.5	1.89

NORMALITY DISTRIBUTION TEST		
n	10	
Mean	0.12	
Standard Deviatio	0.12	
T	2.90	
D	0.237	
Y	-4.793	
Y 1% value	-4.11	
Y 99% value	0.36	
Y in range? (& therefore Data is Normally Distributed)	No	
Parameter level and percentile (assuming normal distribution)		
μ + 2σ	N/A	mg/l
Percentile	N/A	
μ + 3σ	N/A	mg/l
Percentile	N/A	

LOG-NORMALITY DISTRIBUTION TEST		
n	10	
Mean	-2.56	
Standard Deviatio	1.03	
T	27.73	
D	0.268	
Y	-1.439	
Y 1% value	-4.11	
Y 99% value	0.36	
Y in range? (& therefore Data is Log-Normally Distributed)	Yes	
Parameter level and percentile (assuming log-normal distribution)		
μ + 2σ	0.61	mg/l
Percentile	97.725%	
μ + 3σ	1.71	mg/l
Percentile	99.865%	

D'Agostino's Test for Log-Normal Distribution, P1

Count [x]	Sorted Data [A]	x-(n+1)/2 [B]	Product of A & B
1	-3.91202	-5	17.6
2	-3.91202	-4	13.7
3	-3.50656	-3	8.8
4	-2.99573	-2	4.5
5	-2.81341	-1	1.4
6	-2.30259	1	-1.2
7	-1.83258	2	-2.7
8	-1.77196	3	-4.4
9	-1.7148	4	-6.0
10	-0.8675	5	-3.9