

## Technical Note

<b>Project:</b>	P17-480 Indurent Park, Newport
<b>Subject:</b>	Drain 5 Permit – Schedule 5 Response Technical Note
<b>Date:</b>	December 2024
<b>Document Reference:</b>	17480-RLL-24-XX-RP-O-1287-P01
<b>Prepared by</b>	Chris Wilson – Principal Geo-Environmental Consultant
<b>Checked &amp; Approved by</b>	Howel Morris – Director
<b>3<sup>rd</sup> Party Review by</b>	Joe Gomme – Associate Director, Hannah Fraser Consulting

### Introduction

Rodgers Leask Ltd (RLL) have been commissioned by Indurent Management Limited to prepare this Technical Note to provide further information in response to a Schedule 5 Notice from the Natural Resources Wales Permitting Team (NRW) to support the Permit Application referenced PAN-025330 for the discharge of surface waters from Indurent Park, Newport (Business Park Reen) into Monks Ditch.

A plan showing the location and routing of the Business Park Reen is shown on PJA Drawing 02554-E-120-C7, monitoring positions are shown on RLL Drawing 17480-RLL-24-XX-DR-O-1261-P01.

### Background to Permit and Schedule 5

In June 2024 RLL submitted a discharge permit application relating to the discharge of surface waters into Monks Ditch (PAN-025330), the information presented within this application and following correspondence should be read in conjunction with this Technical Note.

The Schedule 5 request for further information from NRW, dated 5<sup>th</sup> November 2024 is presented in **Appendix A**. The requirements of the schedule were as follows:

1. *Provided a revised management plan/operating technique that details how treatment of the discharge will be achieved. This should include (but not limited to):*
  - a. *a map showing the location of the treatment system, type of treatment to be used, ongoing maintenance of the treatment system, contingency plan for failure (if applicable) and long term expectation of the system and the discharge quality*
  - b. *The limits that are required to be achieved in the discharge are:*
    - i. *Ammonia 0.8 mg/l as a maximum*
    - ii. *and BOD 11 mg/l as a maximum.*

2. Provide any sampling data that has been collected since submitting the application. If possible match to the sampling locations used (upstream, downstream and the discharge effluent) for the sample data initially provided with application.

To address the requirements of the Schedule 5 notice, Indurent and RLL have begun dialogue with a 3<sup>rd</sup> party Reviewer (Hannah Fraser Consulting (HFC)) and a Specialist Contractor (John F Hunt Water Tech (JFH)).

Following a design brief period between Indurent, RLL, HFC and JFH, outline proposals to manage the above criteria on the site were presented to NRW during a Teams meeting conducted on the 29<sup>th</sup> of November 2024. The teams meeting was aimed to present these proposals and a technical background behind the data and treatment, the following was recommended in response to the Section 5 notice:

- **Operation Management Plan**, a straightforward management plan showing details relating to the proposed treatment facility and waterway management to be used by operators on the site.
- **Treatment Proposal Technical Note**, to present up to date testing, detailed analysis of recent data and technical details relating to the surface waters treatment proposals for the Site.

## Updated Surface Waters Information

As a part of the permit application, surface water quality information was submitted to NRW in June 2024 which included a full dataset from the Drain 5 – central position (D5-C), the proposed discharge position, dating back to May 2021. The monitoring position is shown on Drawing 17480-RLL-24-XX-DR-O-1261-P01

Sampling is undertaken at the D5-C position every two weeks and since the initial discharge permit application in June 2024 a further thirteen rounds of monitoring have been undertaken, the most recent being the 20<sup>th</sup> November 2024. As requested in the Section 5 Notice the updated surface water sampling from positions D5-C, Monks Ditch Upstream (MD-U) and Monks Ditch Downstream (MD-D) is presented in **Appendix B**.

In **Appendix B** the results have been screened against WFD EQS (AA unless only MAC) or the Gwent Levels SSSI WQS, bioavailable concentrations have been calculated where appropriate.

For discussion purposes, for ammoniacal nitrogen and biochemical oxygen demand (BOD) where discharge limits were applied in the Section 5 Notice results have been presented in graph form on the following page. Earthworks and construction timelines and rainfall from a local weather station has also been presented.

Figure 1 - D5-C Ammoniacal Nitrogen & Construction Phases

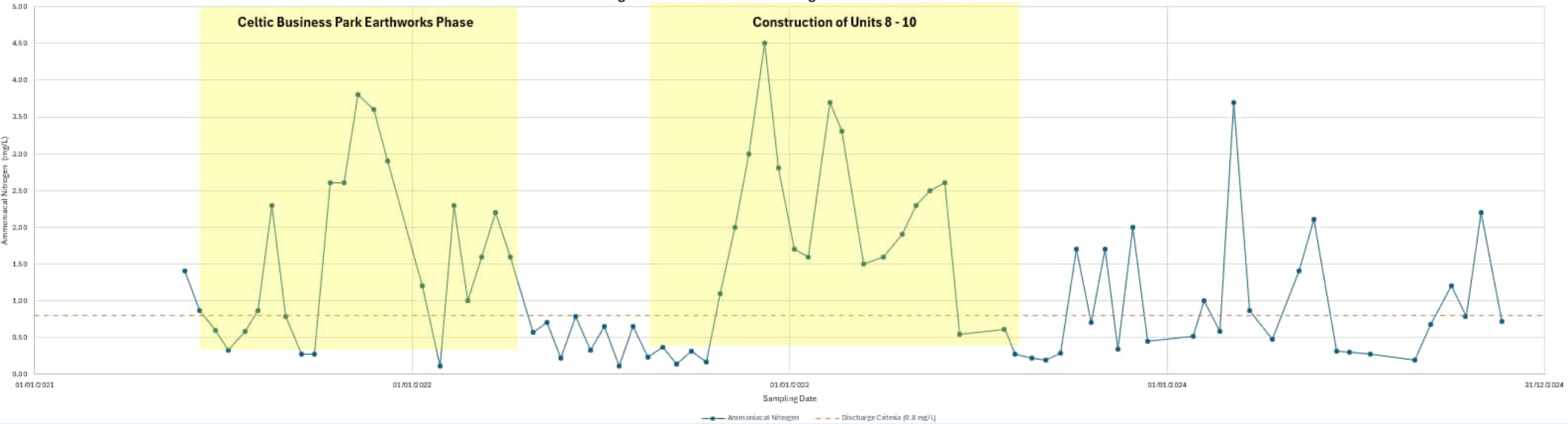


Figure 2 D5-C Ammoniacal Nitrogen & Daily Precipitation

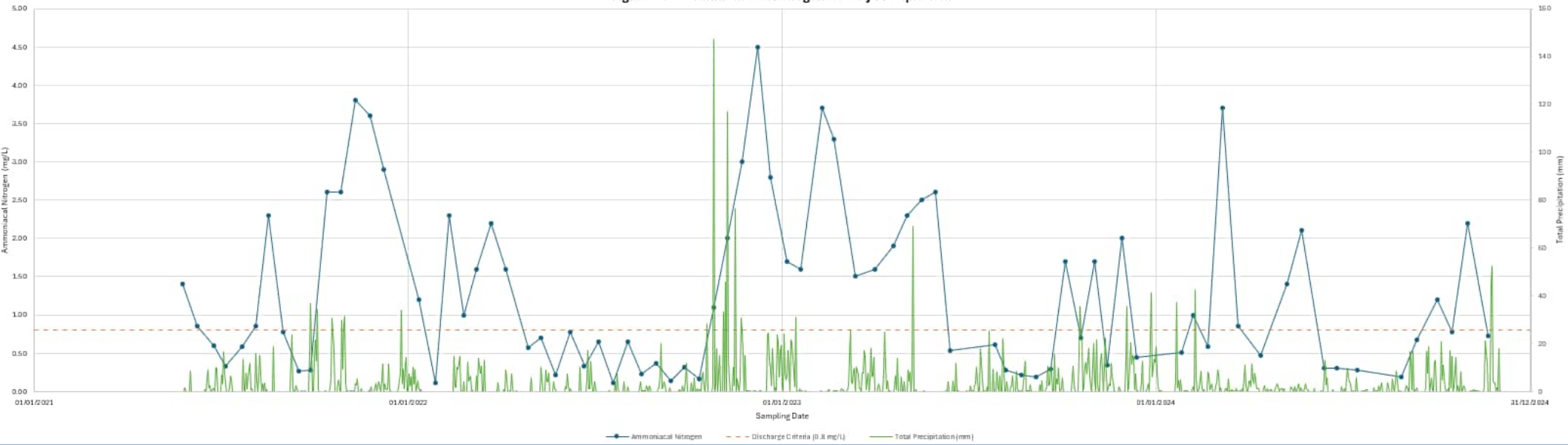


Figure 3: D5-C- BOD & Construction Phases

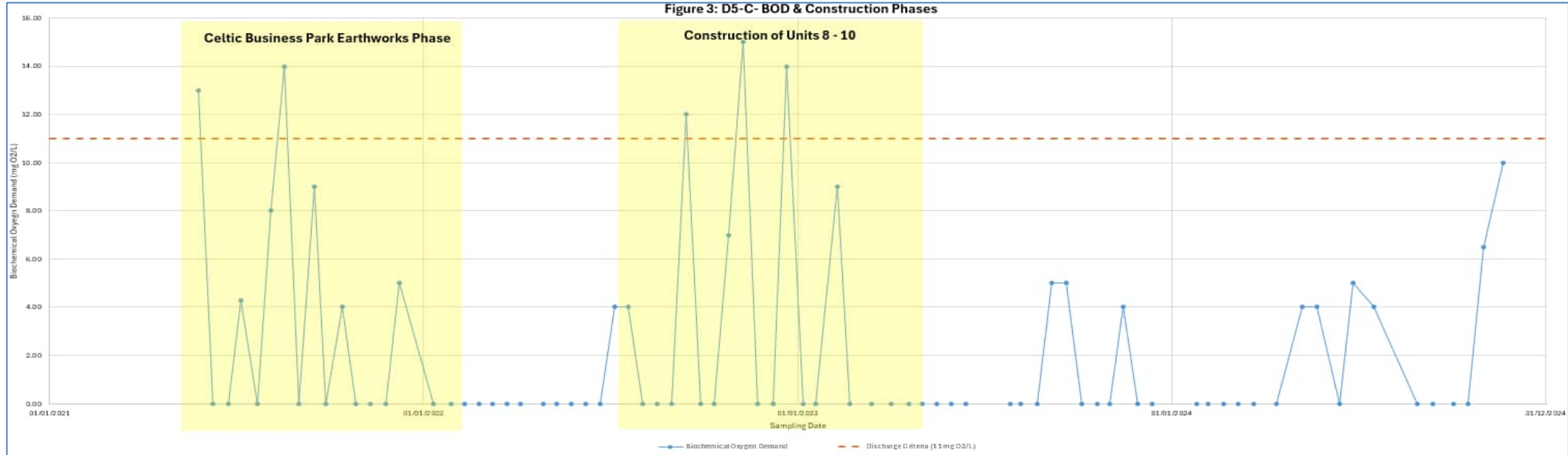
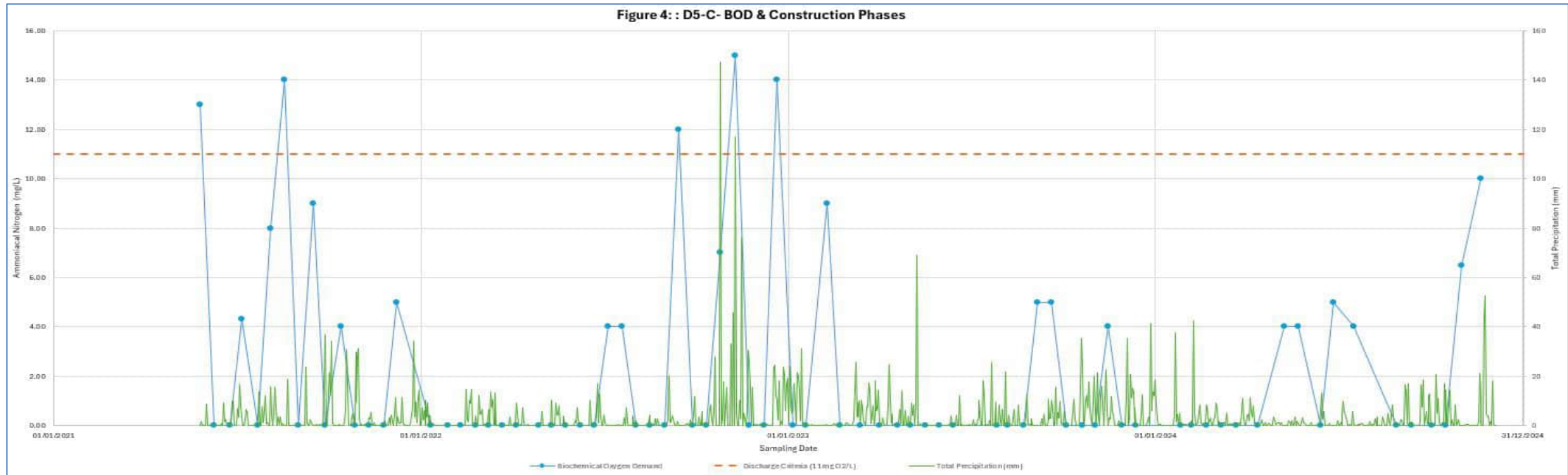


Figure 4 : D5-C- BOD & Construction Phases



## Treatment Requirements

### Ammoniacal Nitrogen

Ammoniacal nitrogen (ammonia) was highlighted in the Section 5 Notice as a determinant of concern where a discharge concentration maximum of 0.8 mg/l would apply. Based on the data provided in Figure 1 for the past 3.5 years, surface water within the business park reën occasionally exceeds the 0.8mg/l concentration, although waters appear to have improved over time.

It is considered that the reason behind the exceedances is multifactorial.

The dates where earthworks or construction works were underway have been added to Figure 1. It is evident that the two prolonged periods of elevated ammoniacal nitrogen concentrations aligned well with when works were being undertaken on site, potentially impacting the watercourse. It is for this reason that ammoniacal nitrogen treatment for all construction waters is recommended for future development phases.

Earthworks or construction works do not provide a reason for all exceedances of the proposed criteria and for this reason rainfall has been added to Figure 2. Figure 2 shows a trend of elevated ammoniacal nitrogen following prolonged periods of rainfall which may be a result of increased surface run off from exposed Made Ground on the undeveloped part of the site or influent from off site. It is thought that as the site is built out and interception increases the amount of surface run-off will reduce and likely lead to a reduction in ammoniacal nitrogen entering the reën network. To mitigate intermittent exceedances of the ammonium discharge criteria the implementation of a telemetrically controlled part-time ammoniacal nitrogen treatment system for the water in the reën is recommended.

Seasonal change is also shown in Figures 1 and 2 to impact the ammoniacal nitrogen levels within the Business Park Reën. Ammoniacal nitrogen is an important source of nitrogen for plants and during the growing season (spring/ summer) and a reduction in concentration is evident in the reën, reeds also act as a natural filter for the waters when mature. In winter we have the converse of this where plants die back and decay, releasing ammoniacal nitrogen back into the watercourse whilst also not growing and therefore not taking up nitrogen. It is for this reason that an annual vegetation management strategy is proposed.

### Biochemical Oxygen Demand

Biochemical Oxygen Demand (BOD) was highlighted in the Section 5 notice as a determinant of concern where a discharge concentration maximum of 11.0mg/l would apply. Based on the data provided in Figures 3 & 4 for the past 3.5 years, surface water within the business park only rarely exceeds the proposed screening criteria, an exceedance has not been recorded since 2022.

Given the only rare exceedances of BOD, direct treatment of the reëns on site is not proposed at this time, however some treatments that are proposed will positively impact BOD and it should be monitored.

### **Review of potential pollutant impact**

This section provides a review of the impact of potential pollutants in the proposed discharge water. To determine which chemical species are potential pollutants in this case, we compared all analysed determinands for monitoring point D5-C against EQS. Those that have been recorded in re-en water between August 2023 and December 2024 form the shortlist that has been assessed. This period was chosen since it covers the period since the last significant on-site earth movements (during which runoff of disturbed soils may have impacted re-en water quality temporarily). D5-C was selected as the appropriate sample point because it is located at the proposed discharge pumping point. The shortlisted species are shown in the table below.

Determinand	Units	LOD	EQS	Count	Detections	Min	Mean	Max	EQS exceedances	Comments
Ammoniacal Nitrogen	mg/l	0.05	0.3	28	28	0.19	0.92	3.70	21	See H1 assessment
Cyanide (Total)	mg/l	0.05	0.001	28	4	0.03	0.03	0.09	4	See H1 assessment
Copper (Dissolved)	µg/l	0.50	1	28	28	1.20	2.89	5.10	28	See note 1
Lead (Dissolved)	µg/l	0.50	1.2	28	9	0.25	0.53	2.60	2	See note 1
Vanadium (Dissolved)	µg/l	0.50	20	28	28	4.40	19.35	43.00	9	Requires H1 assessment
Zinc (Dissolved)	µg/l	2.50	10.9	28	25	1.25	9.87	49.00	11	See note 3
Cadmium (Total)	µg/l	0.11	0.25	28	8	0.06	0.10	0.45	2	See note 2
Chromium (Total)	µg/l	0.50	4.7	28	25	0.25	3.82	24.00	7	See note 2
Copper (Total)	µg/l	0.50	1	28	28	2.30	5.35	15.00	28	See note 2
Iron (Total)	µg/l	5.00	1000	28	28	37.00	393.1	1500	3	See note 2
Nickel (Total)	µg/l	0.50	4	28	26	0.25	4.12	18.00	10	See notes 1 and 2
Lead (Total)	µg/l	0.50	1.2	28	28	1.10	5.40	22.00	25	See note 2
Vanadium (Total)	µg/l	0.50	20	28	28	6.60	24.99	63.00	14	See note 2
Zinc (Total)	µg/l	2.50	10.9	28	28	6.30	40.99	240	25	See note 2

Note 1: Application of the mBAT tools provided by UKTAG indicates that even the maximum recorded concentrations of these metals do not produce an excessive bioavailable concentration.

Note 2: Given that all metals were analysed as both total and dissolved species, we assume that we can discount exceedances of the total metal concentrations since only the dissolved concentrations will be mobile and bioavailable. (Where the dissolved concentrations do not appear in the table above – e.g. for iron – this indicates that they were always below EQS.)

Note 3: The mBAT tool indicates that all analytical results with the exception of the highest recorded concentration of zinc produce acceptable bioavailable concentrations. (The second highest concentration gives a risk characterisation ratio of 0.73 in the mBAT tool.) The highest concentration is worth assessing through the H1 tool.



From 28 sample sets, PAH concentrations have not been detected in the reens in the period covered, with the sole exception of one naphthalene value. However, given that EQS values for some PAH are very low, they are significantly smaller than the limits of detection achieved by standard laboratory methods. It is therefore appropriate that representative PAH species, including naphthalene, are assessed using the H1 tool.

### H1 tool review

Review of the previously presented H1 assessment (PAN-025330) shows that three PAH were included. These are shown in the table below, with the applied concentrations in the assessment tool and the relevant analytical concentration values.

Determinand	Units	LOD	EQS	Analytical data since July 2023					H1 assessment	
				Count	Detections	Min	Mean	Max	Release conc	Max release conc
Naphthalene	µg/l	0.1	0.1	28	1	<0.1	<0.1	0.65	0.33	13
Fluoranthene	µg/l	0.1	0.00017	28	0	<0.1	<0.1	<0.1	0.11	0.84
Anthracene	µg/l	0.1	0.1	28	0	<0.1	<0.1	<0.1	0.11	0.66

The table indicates that three relatively mobile PAH were selected as representatives for modelling. All three were modelled at concentrations exceeding what has been found in recent data, and in all three cases the H1 assessment indicated that they would not present an environmental risk at these concentrations. We therefore consider that no additional PAH assessment is required.

Cyanide and ammoniacal nitrogen were also previously assessed in the previous H1 assessment and passed the screening tests.

Vanadium and zinc were not included in the previous H1 assessment.<sup>1</sup> We applied the v7 spreadsheet version, conservatively taking the concentrations of Va and Zn to be the mean of all analytical results to date from D5-C. With these values, both determinands fail screening tests 1 and 2; zinc passes screening test 3, but vanadium fails. However, vanadium passes screening test 4.

Chromium VI, like the PAH, has been analysed and is not detected, but has a detection limit above the EQS. If we run the H1 assessment on the assumption that Cr(VI) concentrations are at 10 µg/l (half the value of the limit of detection given), and with an assumed low background concentration (0.1 µg/l), this fails all tests. However, as shown in the table below, there are available results at a lower detection limit for dissolved chromium (undifferentiated). If we assume that the dissolved chromium concentrations are entirely composed of Cr(VI), with no Cr(III), the substance passes screening test 4. Since the Cr(VI) concentration cannot

<sup>1</sup> These two determinands are not available as possible selections in the H1 assessment tool v8 spreadsheet held by HFCL; we do however have a copy of the previous v7 version which does include them. We have requested but not yet received an updated v8 spreadsheet from the Environment Agency.

exceed the total concentration of chromium, this conservative assessment indicates that Cr(VI) does not present a significant risk.

Determinand	Units	LOD	EQS	Count	Detections	Min	Mean	Max	EQS exceedances
Chromium (Dissolved)	µg/l	0.50	4.7	28	17	<0.5	0.77	2.10	0
Chromium (Total)	µg/l	0.50	4.7	28	25	<0.5	3.82	24.00	7
Chromium (Hexavalent)	µg/l	20	3.4	28	0	<20	<20	<20	undetermined

In conclusion, we have reviewed the risks presented by contaminants currently found in the reen system, and find that all of them pass the H1 assessment.

### **Treatment Proposal**

As discussed in the previous sections, to achieve the requirements of the Section 5 Notice, treatment is required in the Business Park Reen to achieve the required discharge limits. It is thought that the reason behind elevated ammoniacal nitrogen in the watercourse is multifactorial and therefore required a combination of treatment techniques focussed at both water with the reen and water from construction.

Drawing 17480-RLL-24-XX-DR-O-1288 shows an illustrative plan of the treatment area and its location within the proposed Park and Ride plot within Indurent Park, Newport which is sequenced to be constructed last. It will therefore be possible to manage water throughout all the construction phases within the central part of Indurent Park, Newport at this location. As construction develops and therefore interception of rainfall increases and vegetation and landscaping is planted the water quality within the Reen is anticipated to improve over time, eventually negating the requirement for treatment of the reen, this will be monitored in an ongoing sampling regime.

Drawing 17480-RLL-24-XX-DR-O-1289 shows a detailed illustrative plan of the treatment facility, it includes the following:

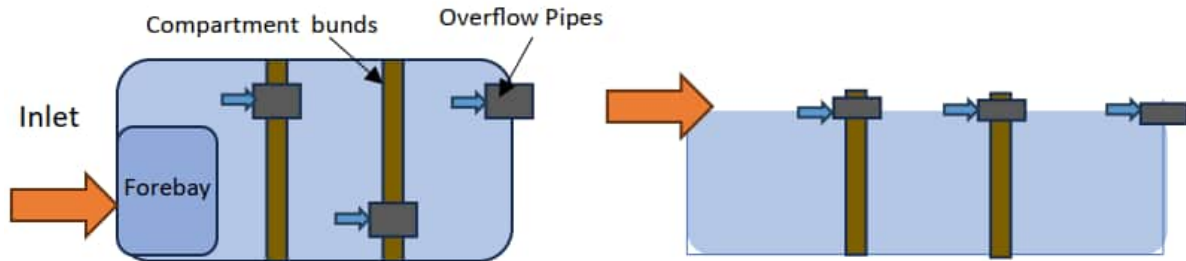
#### **Silt Management During Construction**

To manage silts during the construction a large, lined settlement lagoon and polishing channel is proposed on the north west corner of the Site (proposed Park and Ride plot). The location of this lagoon and proposed build sequence at Indurent Park, Newport will allow its retention through several build phases and water management through to completion of construction works.

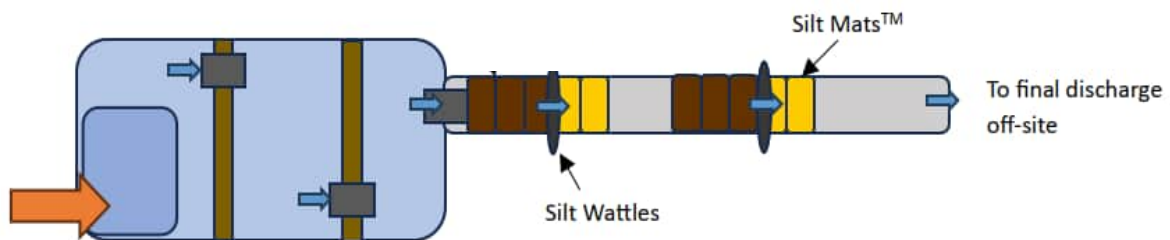
The settlement lagoon will aid in silt management and improve the quality of construction water during the earthworks and construction phases of the development before discharging into the Business Park Reen. The construction of a settlement lagoon will encourage the natural settlement of silt, with construction waters becoming less turbid as they flow through several compartments within the lagoon. After which, the overflow is proposed to enter into a polishing channel designed to remove any remaining solid fractions from the attenuated water ahead of the discharge point into the Business Park Reen.



The temporary settlement lagoon should be large and include a forebay (locally deepened area) where construction waters can be pumped, and the inclusion of compartments will prolong the duration in which surface water is spent in the attenuation; increasing the time sediment can drop out of suspension. The following figure presents a possible layout.



The construction of the Polishing Channel will be designed to receive the outfall of the settlement lagoon via gravity. The Polishing Channel will be lined with an impermeable liner to prevent silt ingress into the already attenuated water and clean stone to add another layer of friction. The channel will comprise various sections of silt mat and wattles to remove the potential for remaining solid fractions that may remain in suspension from the treated waters, before being discharged into the Business Park Reen at the discharge point.



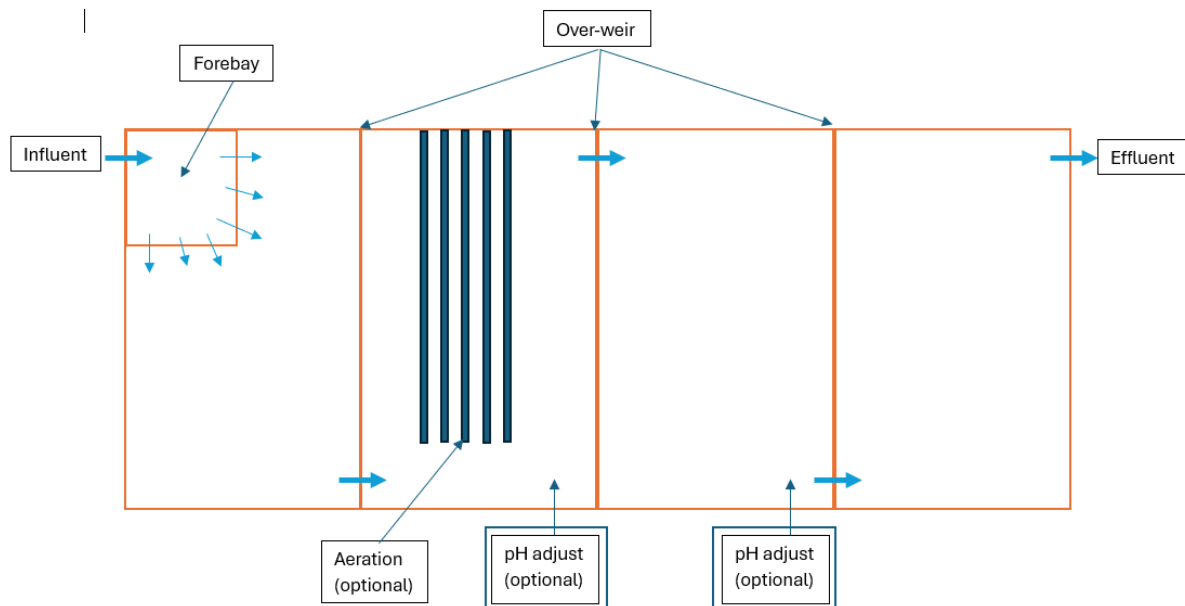
#### Settlement Lagoon retrofit for Ammoniacal Nitrogen During Construction

To further improve the ammoniacal removal in the settlement lagoon, it is proposed to retrofit the lagoon with the potential to add a flocculant/ coagulant polymer at the inlet stream via an in-line mixer. The use of a flocculant/ coagulant polymer will aid colloidal solids capture and precipitate metals which were outlined in the Section 5 notice. To ensure that an environmentally friendly polymer is used, an aquatics specialist has been consulted who are a provider of a gel polymer which is environmentally friendly and non-accumulative in aquatic species.

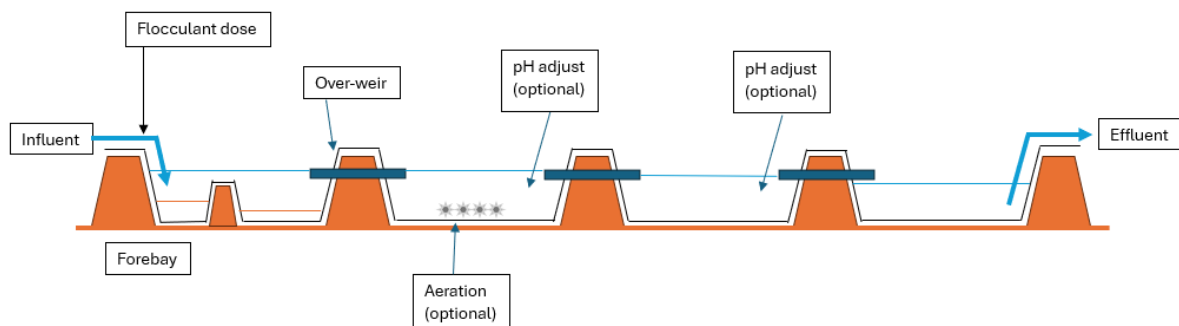
The settlement lagoon will also be retrofitted to remove ammoniacal nitrogen as a gas (ammonia) through aeration and pH adjustment. pH adjustment shall be controlled through the use of sustainably sourced sodium hydroxide (caustic soda) and an acid (likely hydrochloric acid) if required depending on pH criteria for discharge.

All options shall be installed, but if through monitoring they are found to not all be required they can incrementally be switched off, or not used to make the system as sustainable as possible.

A plan view of the retrofitted settlement lagoon is presented below:



A cross section of the retrofitted lagoon is presented below:



### Automated Treatment - Reen Network

To manage ammoniacal nitrogen within the reen network to achieve the requirements of the Section 5 notice, it is proposed that an automated ion-exchange (IX) system is installed separate to the construction water management system, it is also considered that the deployment of a Reverse Osmosis (RO) system may also provide an effective solution. Ammoniacal nitrogen is proposed to be monitored telemetrically within the reen when levels are recorded to exceed the trigger value of 0.8mg/l (the upper trigger level) and will pump water into the treatment lagoon (17480-RLL-24-XX-DR-O-1288) and process water until a lower trigger level is achieved (0.6mg/l) and the water is returned to the reen network. This process is then repeated.

The automated system is proposed to comprise three resin filters and a brine tank. The ion-exchange (IX) system will remove ammoniacal nitrogen from water running through the resin filter before being discharged into the lagoon. Water within the lagoon can be cycled through the system several times before discharge and telemetric monitoring and management of

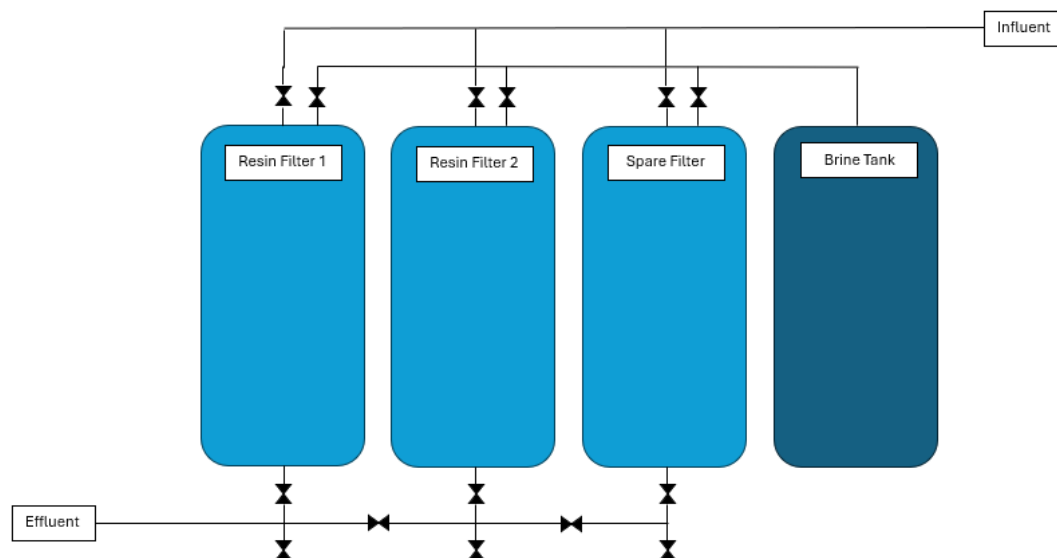
the lagoon will allow discharge of treated water once the lower trigger level has been achieved.

Two of the three resin filters shall be running at any one time, the third will be in place which can be used during regeneration cycles of the other resin filters to allow for 24 hour treatment, if required.

Brine, a saline solution, is used for the regeneration cycle of the resin filters and brine rinse effluent will be held on site and disposed of via waste carrier/ facility. No saline water will be discharged to the Reen network.

Ion exchange is largely indiscriminate so it is likely there will be a reduced in total minerals in any water that we treat, this will subsequently reduce conductivity and other determinands discussed in the Section 5 Notice.

A schematic of the system is presented below.



### Vegetation Management

Seasonal change is known to impact the ammoniacal nitrogen levels within the business park reen. Ammoniacal nitrogen is an important source of nitrogen for plants and during the growing season (spring/ summer), during summer reeds also act as a natural filter for the waters when mature. In winter the converse of this occurs where plants die back and decay, releasing ammoniacal nitrogen back into the watercourse whilst also not growing and therefore not taking up nitrogen.

On agreement with the Site Ecologist, annual vegetation clearance is recommended where reeds are trimmed to 330mm above ground or water level to reduce the amount of decay that occurs during the winter months. It is proposed that this is undertaken across the entire reen network.

In addition to this, in line with the water vole management plan for the site, full vegetation clearance shall be undertaken in 50m sections, every 3 years. The removal of this decaying material will reduce the amount of ammoniacal nitrogen being added to the reed bed and the BOD of the reed bed during the winter months.

### **Monitoring and Data Sharing**

The treatment systems on site will be managed and controlled through the use of in situ telemetric monitoring equipment for ammoniacal nitrogen, the monitoring positions are shown on Drawing 17480-RLL-24-XX-DR-O-1288.

Weekday sampling shall be undertaken at the location of discharge (D5-C) for ammoniacal nitrogen, BOD, cyanide, mercury, anthracene, fluoranthene and a suitable suite of contaminants including all determinands included in the Section 5 notice. It is proposed that a summary is presented quarterly to the Environmental Officer alongside results presented in excel format.

It is recommended that the sampling frequency is reviewed every three months based on the evolving dataset with the potential to drop the frequency to weekly, then monthly monitoring.

## Drawings



GENERAL NOTES

NO DIMENSIONS TO BE SCALED OFF THIS DRAWING.

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S AND ENGINEER'S DRAWINGS.

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

ALL LEVELS ARE IN METRES UNLESS NOTED OTHERWISE.

ANY DISCREPANCIES NOTED ON SITE ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.

KEY:

WATER SAMPLING POSITION

P01	02.05.24	FIRST DRAFT	ET CW
Rev	Date	Amendments	By Chk



Client  
St Modwen Logistics

Project  
P17-480 St.Modwen Park Newport

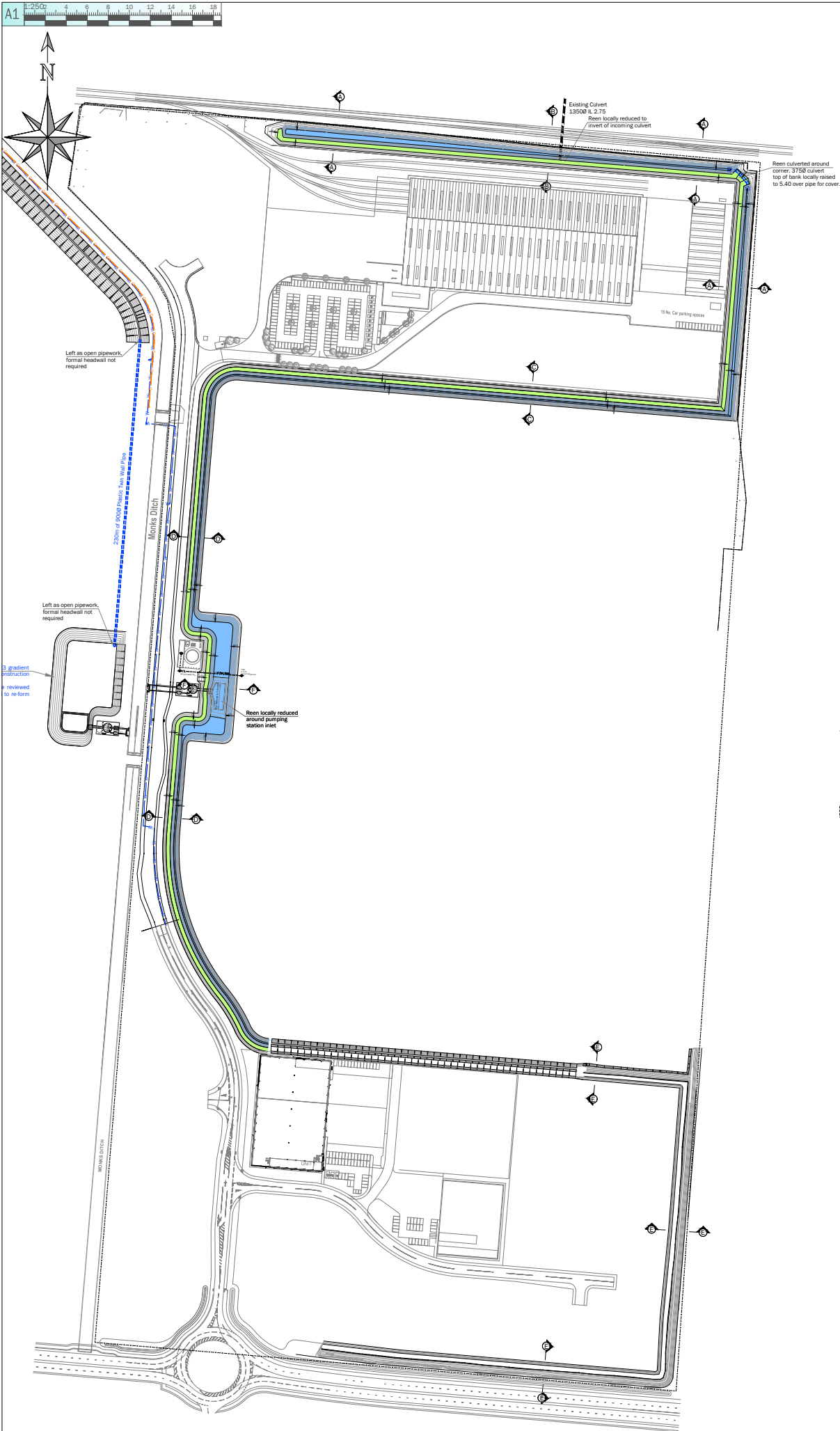
Drawing Title  
Site Surface Water Locations

INFORMATION

	Drawn	Checked	Date
NTS	ET	CW	02.05.24
Drawing No.	Rev.		
17480-RLL-24-XX-DR-O-1261-P01			
Copyright © Rodgers Leask Limited			







SITE PLAN 1:2000

Volume calculations, assuming SW Pumping Station not active due to offsite constraint

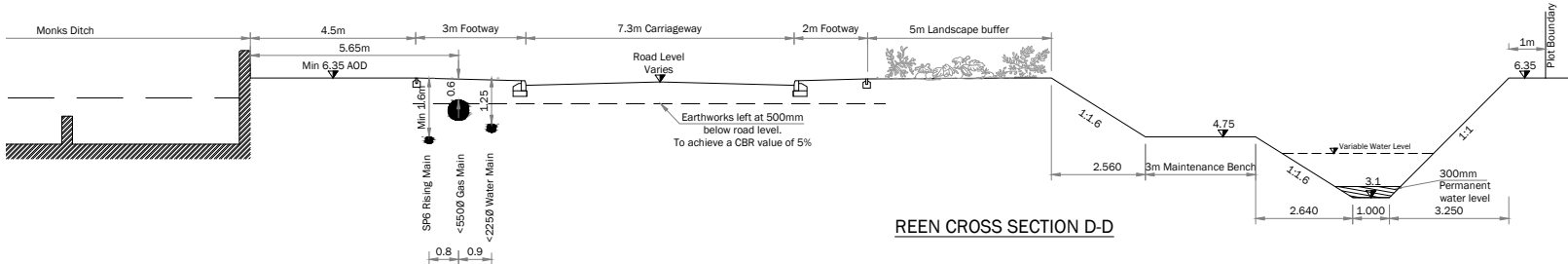
Design Criteria:

- Discharge rate based upon 3.5l/s per hectare
- Gross site area = 42ha
- Net employment land 34.4ha based on 95% impermeability at 32.65ha impermeable.
- Net infrastructure with 100% impermeability = 4.34ha
- Site discharge rate 147 l/s
- Design for rainfall event up to the 1 in 100 year (+ 40% climate change)
- Total site area: 45 hectares (gross)
- Assumed Business Park impermeable area 90%
- Reen typical cross section provides 25m<sup>2</sup>)
- Equates to min 1300m of reen network

Total developed site : 45 Hectares  
Net impermeable 40.5ha (90%)  
(Assuming no pumped discharge)

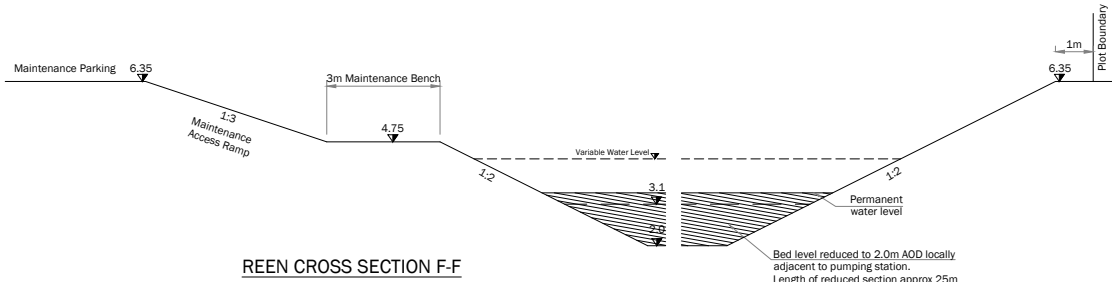
Volume available within Reen network  
Indicated at critical levels

Storm Event	Volume Req	Water Level	Reen Volume
1 in 1	10,450m <sup>3</sup>	6.50	62,200m <sup>3</sup>
1 in 2	11,970m <sup>3</sup>	6.25	54,200m <sup>3</sup>
1 in 5	14,080m <sup>3</sup>	6.00	46,700m <sup>3</sup>
1 in 10	15,800m <sup>3</sup>	5.75	39,700m <sup>3</sup>
1 in 20	17,700m <sup>3</sup>	5.50	33,000m <sup>3</sup>
1 in 30	19,010m <sup>3</sup>	5.25	26,800m <sup>3</sup>
1 in 60	21,550m <sup>3</sup>	5.00	21,000m <sup>3</sup>
1 in 100	23,850m <sup>3</sup>	4.75	15,500m <sup>3</sup>
1 in 100+20%	29,500m <sup>3</sup>	4.50	12,000m <sup>3</sup>
1 in 100+40%	35,610 m <sup>3</sup>	4.25	9,000m <sup>3</sup>
		4.00	6,800m <sup>3</sup>
		3.75	4,000m <sup>3</sup>
		3.50	2,100m <sup>3</sup>



REEN CROSS SECTION D-D

REEN CROSS SECTION E-E



REEN CROSS SECTION F-F

REEN CROSS SECTION A-A

REEN CROSS SECTION B-B

REEN CROSS SECTION C-C

REV	DATE	REVISION NOTE	BY
C7	14.05.21	Attenuation volumes added for full development areas	DMcC
C6	27.11.18	Reen sump adjusted for foul sewer	AT
C5	05.11.18	Cross Section F-F revised to 1:2	DMcC
C4	23.03.18	Cross Section E-E bank level note adjusted	DMcC
C3	22.03.18	Cross Section E-E amended	DMcC
C2	28.07.17	Reen bank to future plots set to 1:1	DMcC
C1	18-07-17	Reen banks set to 1:1.6 grade	DMcC

**RJA ENGINEERING**  
Seven House - 19 High Street - Longbridge - Birmingham B31 2UG - Tel: 0121 516 5184  
CLIENT

**St. Modwen Developments**

PROJECT

**Llanwern  
Newport  
Celtic Business Park**

DRAWING TITLE  
**Reen Design**

DRAWING ISSUE STATUS  
**Construction**

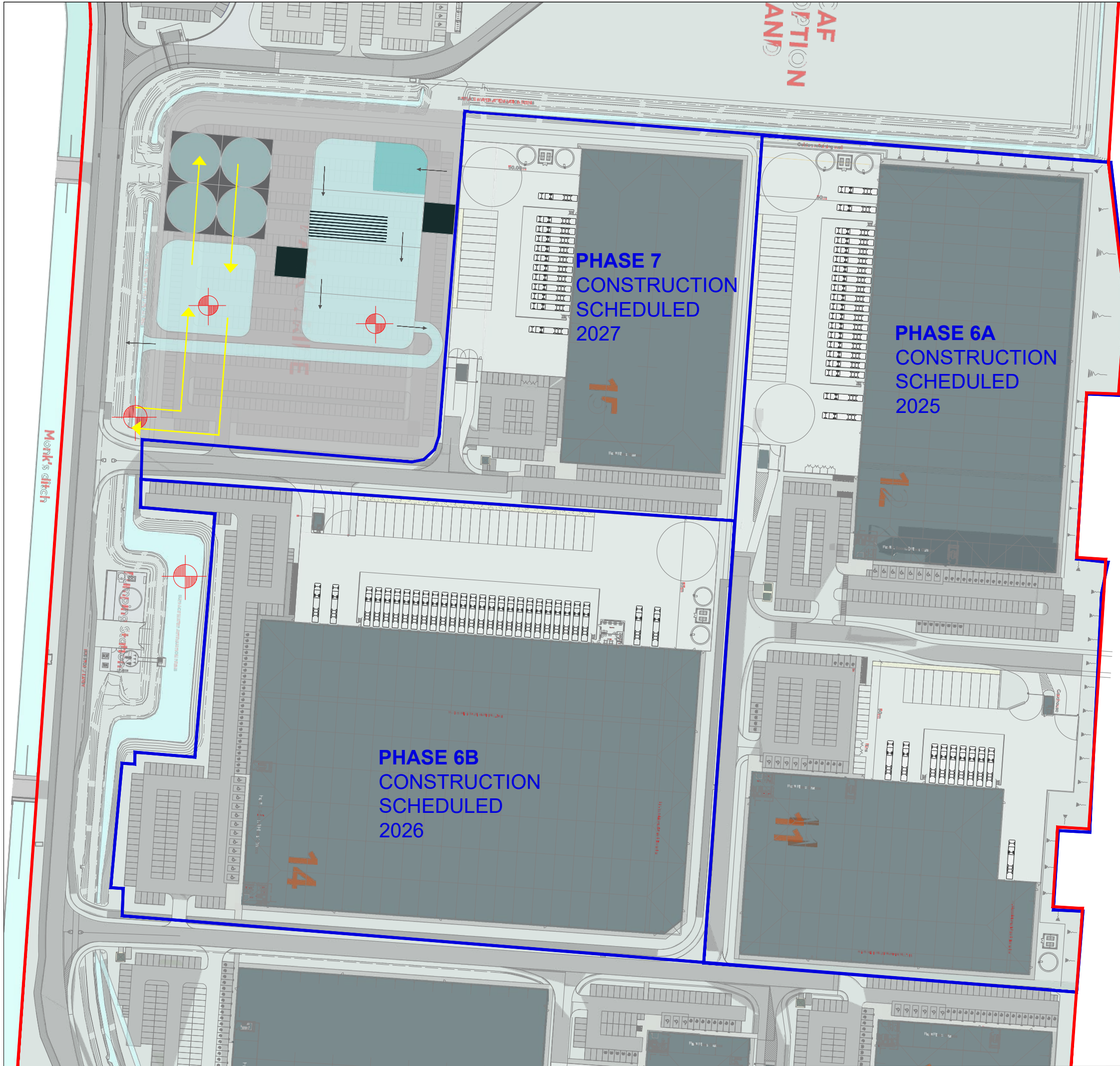
JOB CODE STAGE DRAWING NO. REVISION

**02554 - E - 120 - C7**

Revision State : P - Prelim / T - Tender / C - Construction

CLIENT REF

SCALE DESIGNED CHECKED DATE  
A1@ 1:100 DMcC AC 10.05.17



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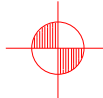
## Key



SITE BOUNDARY



PHASE BOUNDARY



WATER QUALITY SAMPLE MONITORING POINT



PH ALTERATION



AERATION TUBES



SETTLEMENT LAGOON



TANKS

Rev	Date	Amendments	By	Chk



Client

Indurent

Project

P17-480 Indurent  
Park Newport  
Phase 6a, 6b & 7

Drawing Title

Proposed Water Treatment  
System

## INFORMATION

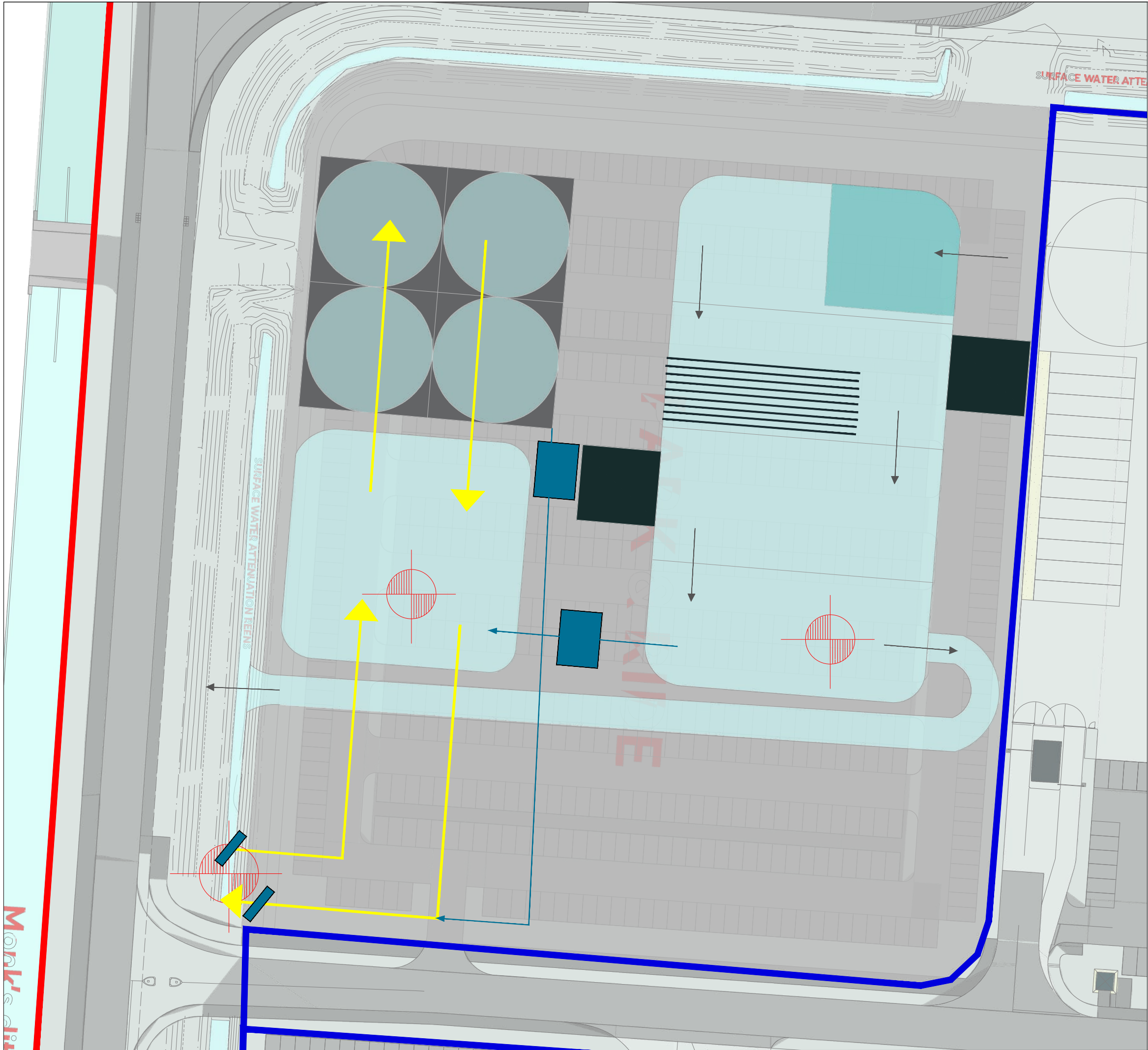
	Drawn	Checked	Date
NTS	AMS	CW	10/12/24

Drawing No. Rev.

I7480-RLL-24-XX-DR-O-1288 P01

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## GENERAL NOTES

NO DIMENSIONS TO BE SCALED OFF THIS DRAWING.

THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S AND ENGINEER'S DRAWINGS.

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

ALL LEVELS ARE IN METRES UNLESS NOTED OTHERWISE.

ANY DISCREPANCIES NOTED ON SITE ARE TO BE REPORTED TO THE ENGINEER IMMEDIATELY.

## Key



SITE BOUNDARY



PHASE BOUNDARY



WATER QUALITY SAMPLE MONITORING POINT



PH ALTERATION



AERATION TUBES



SETTLEMENT LAGOON



RESIN FILTRATION (RF) OR REVERSE OSMOSIS (RO) UNIT (TBC)



BYPASS VALVE



REAL-TIME MONITORING

P02	17/12/2024	Updated to include bypass valves / routes and real time monitoring.	AMS	CW
P01	12/12/2024	First Issue	AMS	CW
Rev	Date	Amendments	By	Chk



Client

Indurent

Project

P17-480 Indurent Park,  
Newport

Drawing Title

Provisional WTP Layout

## INFORMATION

	Drawn	Checked	Date
NTS	AMS	CW	12/12/24
Drawing No.	Rev.		

I7480-RLL-24-XX-DR-O-1289 P02

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## Appendix A

**Notice of request for more information**

Environmental Permitting (England and Wales)  
Regulations 2016

**Notice requiring further information**

To: Indurent Logistics Propco A14 Ltd

C/O Jamie Payne via email

Application number: PAN-025330

Natural Resources Wales, in exercise of its powers under paragraph 4 of Part 1 of Schedule 5 of the above Regulations, requires you to provide the information detailed in the attached schedule. The information is required in order to determine your application for a permit, dated 23/07/2024. The information requested should be sent to the following address by 30/12/2024.

Information should be sent either by email to :

[James.wakeford@naturalresourceswales.gov.uk](mailto:James.wakeford@naturalresourceswales.gov.uk)

Or by post:

Permitting Centre  
Welsh Government Offices  
Cathays Park 2  
King Edward VII Avenue  
Cardiff  
CF10 3NQ

Name	Date
<b>Emma Jones</b>	<b>05/11/2024</b>

Authorised on behalf of Natural Resources Wales

Cyfoeth Naturiol Cymru' Swyddfeydd Llywodraeth Cymru, Parc Cathays, Rhodfa'r Brenin Edward VII, Caerdydd, CF10 3NQ

Permitting Centre, Natural Resources Wales, Cathays Park 2, King Edward VII Avenue, CARDIFF CF10 3NQ

Ebost/Email      [james.wakeford@cyfoethnaturiolcymru.gov.uk](mailto:james.wakeford@cyfoethnaturiolcymru.gov.uk)  
[james.wakeford@naturalresourceswales.gov.uk](mailto:james.wakeford@naturalresourceswales.gov.uk)

Gwefan/Website    [www.cyfoethnaturiolcymru.gov.uk](http://www.cyfoethnaturiolcymru.gov.uk)  
[www.naturalresourceswales.gov.uk](http://www.naturalresourceswales.gov.uk)

Croesewir gohebiaeth yn y Gymraeg a'r Saesneg  
Correspondence welcomed in Welsh and English

## Schedule

1. Provided a revised management plan/operating technique that details how treatment of the discharge will be achieved. This should include (but not limited to)
  - a. a map showing the location of the treatment system, type of treatment to be used, ongoing maintenance of the treatment system, contingency plan for failure (if applicable) and long term expectation of the system and the discharge quality.
  - b. The limits that are required to be achieved in the discharge are:  
Ammonia 0.8 mg/l as a maximum  
and  
BOD 11 mg/l as a maximum
  - c. Details of the ongoing sampling regime to be used to monitor the following chemicals identified as requiring further monitoring after assessment:  
Cyanide  
Mercury  
Anthracene  
Fluoranthene
2. Provide any sampling data that has been collected since submitting the application. If possible match to the sampling locations used (upstream, downstream and the discharge effluent) for the sample data initially provided with application.

Cyfoeth Naturiol Cymru' Swyddfeydd Llywodraeth Cymru, Parc Cathays, Rhodfa'r Brenin Edward VII, Caerdydd, CF10 3NQ

Permitting Centre, Natural Resources Wales, Cathays Park 2, King Edward VII Avenue, CARDIFF CF10 3NQ

Ebost/Email      james.wakeford@cyfoethnaturiolcymru.gov.uk  
james.wakeford@naturalresourceswales.gov.uk

Gwefan/Website    [www.cyfoethnaturiolcymru.gov.uk](http://www.cyfoethnaturiolcymru.gov.uk)  
[www.naturalresourceswales.gov.uk](http://www.naturalresourceswales.gov.uk)

Croesewir gohebiaeth yn y Gymraeg a'r Saesneg  
Correspondence welcomed in Welsh and English



## **Appendix B**

### Results - Water

[illegible]

### Results - Water

[illegible]

### Results - Water

[illegible]

### Results - Water

[illegible]

### Results - Water

[illegible]



### Results - Water

[illegible]

### Results - Water

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### Results - Water

[illegible]

## Results - Water

Project P17-681

Client: Rodgers Leash Environmental

Question No. 321-30508

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