

The logo for IGas Energy features two overlapping green triangles of different sizes and orientations. The larger triangle is positioned below and to the right of the smaller one, creating a sense of depth and movement.

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**IGas Energy Production Limited**

**Glentworth West Drilling and Testing Operation**

**Non-Technical Summary**



<b>Issue Number:</b>	<b>Details:</b>	<b>Prepared By:</b>	<b>Reviewed By:</b>	<b>Authorised By:</b>
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## 1. PURPOSE AND CONTEXT

This Non-Technical Summary forms part of an application to the Environment Agency to authorise the undertaking of specific 'permitted activities' at a proposed new wellsite, Glentworth West. With regards to onshore oil and gas operations a number of activities are considered applicable to the environmental permitting regime.

The site within which the 'permitted activities' are undertaken is considered a 'regulated facility' under The Environmental Permitting (England and Wales) Regulations 2016, as amended (EPR2016) [REF.1]. Throughout the life of the Glentworth West Wellsite this Non-Technical Summary shall be considered a live 'operating technique' and must be complied with as it forms part of the environmental permit.

The purpose of the Non-Technical Summary is to set out the operations to be conducted at the wellsite and how they are applicable under EPR2016. It also lays out the management plans and documentation of the application and how they satisfy the requirements of EPR2016.

IGas Energy Production Limited is the 'Operator' as defined under EPR2016 and shall herein be referred to as the 'Operator' within this Non-Technical Summary.

An application to the Environment Agency is being made under EPR2016 to apply for a 'mining waste operation' at the Glentworth West Wellsite for the drilling and testing of a single appraisal borehole (GLN12) which includes a sidetrack drilling campaign (GLN12z).

The proposal also includes the production testing phase which will require an 'installation activity' for the storage and handling of crude oil. Associated gas may also arise and will be managed in accordance with the identified Best Available Technique (BAT) which is incineration by a shrouded flare in first instance before being incinerated by an enclosed groundflare once the production volume stabilises.

For clarity, domestic legislation derived from European Union legislation such as the Mining Waste Directive [REF.2] and Industrial Emissions Directive [REF.3] continues to have an effect in domestic law following the UK's withdrawal from the European Union in accordance with the European Union (Withdrawal) Act 2018 [REF.4]. European Directives are therefore still applicable to this Non-Technical Summary and activities performed by the 'Operator'.



## 2. SCOPE

This Non-Technical Summary is applicable to the Glentworth West Wellsite and all operations conducted therein. It is applicable to the 'Operator', its contractors and subcontractors and may be used in support of an application to the Environment Agency for an environmental permit under EPR2016.

Whilst the 'Operator' currently holds an environmental permit for its Glentworth K Wellsite (EPR/RP3437YQ) located 900 m to the east of the proposed Glentworth West Wellsite. It is not believed that the new wellsite could be covered under the existing permit when assessed against the Environmental Permitting Core Guidance [REF.5] which outlines when a single permit may be granted. This is possible only where:

- the Regulator is the same (Environment Agency);
- the 'Operator' is the same; and
- all the facilities are on the same site (not withstanding certain exceptions such as standard facilities and flood risk activities).

On the basis that the application is for a number of bespoke activities and will be undertaken on a neighbouring site, without any interconnectivity i.e. pipeline, it is the opinion of the 'Operator' that the application will be for a new standalone regulated facility.



### 3. ABBREVIATIONS AND DEFINITIONS

<b>“:</b>	Imperial Inch
<b>Active Area:</b>	The area of the regulated facility whereby permitted activities are undertaken
<b>BAT:</b>	Best Available Technique
<b>EPR2016:</b>	The Environmental Permitting (England and Wales) Regulations 2016
<b>GLN12:</b>	Glentworth 12 Well
<b>GLN12z:</b>	Glentworth 12z Sidetrack
<b>Installation Activity:</b>	Has the meaning given within Regulation 2 of EPR2016
<b>HDPE:</b>	High Density Polyethylene
<b>m:</b>	Metres
<b>MD:</b>	Measured Depth
<b>Mining Waste Operation:</b>	Has the meaning given within Regulation 2 of EPR2016
<b>Non-active Area:</b>	The area of the regulated facility whereby permitted activities are not undertaken
<b>NORM:</b>	Naturally Occurring Radioactive Material
<b>Operating Technique:</b>	Documents approved by the regulator to ensure compliance with the issued permit
<b>Operator:</b>	Has the meaning given within Regulation 7 of EPR2016
<b>Permitted Activities:</b>	Any activity or operation defined within Schedule 1 to 29 of EPR2016
<b>Regulated Facility:</b>	Has the meaning given within Regulation 8 of EPR2016
<b>TVD:</b>	True Vertical Depth
<b>TVDSS:</b>	True Vertical Depth below Sea Level (sub sea)

**Table 1: Abbreviations and Definitions**

#### 4. REGULATED FACILITY

The boundary of the 'regulated facility' (Glentworth West Wellsite) has been provided in Appendix 1. The Glentworth West Wellsite has an area of approximately two and a half hectares and is centred on grid reference SK 92000 87900 and located at the following address:

Glentworth West Wellsite  
Off Northlands Road  
Glentworth  
Gainsborough  
DN21 5DN



Figure 1: Regulated Facility Boundary (Source: Google Earth 18/08/2022)



## 5. ENVIRONMENTAL PERMIT AND GENERAL DESCRIPTION

The proposed Glentworth West Wellsite has yet to be constructed and does not currently hold an environmental permit. No permitted activities are authorised under EPR2016.

### 5.1 Development Description

The 'Operator' is proposing to construct a new site to be known as the Glentworth West Wellsite. The purpose of the new wellsite is to accommodate future drilling, testing and production operations to further develop the Glentworth oil field. In brief, the site construction will be designed to house a drilling rig, well test spread, storage tanks, production equipment and any other ancillary equipment as necessary.

Site construction works will include the upgrading of the current access track, excavation of topsoil and subsoil and relocating it to the western boundary stored separately as part of the bunding to mitigate visual impact. An impermeable liner will be installed to mitigate against any spillages or onsite pollution events with a concrete well cellar, well pad and associated drainage also installed. The Glentworth West Wellsite will have security fencing installed around the perimeter. Whilst the construction of the wellsite is not covered under EPR2016, the embedded mitigation such as the impermeable liner forms part of the 'Operators' obligation to protect the environment.

Following site construction, the 'Operator' is proposing to drill a new appraisal borehole with the purpose of investigating the Mexborough Rock reservoir.

The well will then be the subject of an extended period of testing comprising of two phases. In total the testing phase will take place over a period of 12 months within which time produced fluid (a mixture of oil and water) will be flowed to surface and stored in dedicated storage tanks pending collection by road tanker to the Welton Gathering Centre for processing. Small volumes of associated gas will be produced alongside the produced fluids. In the first instance the flowrate will be unstable and suitable mitigation in the form of a shrouded flare will need to be deployed to facilitate efficient combustion across a wide scope of flowrate and pressures. Once the production rates have settled down it is proposed to substitute the shrouded flare for a higher efficiency enclosed flare, designed to operate within a specific flowrate range. The two-phase approach provides the 'Operator' with confidence that the waste gas can be safely managed and disposed of for the 12 month period.

The well may also be the subject of an acid wash to increase near wellbore permeability, cleaning out any blocked channels within the near wellbore area that may have been caused by the initial drilling operation. This activity may be undertaken a number of times throughout the lifetime of the development following well construction.

Following the 12 month well test the well will be the subject of a suspension period in which the 'Operator' will make a decision over the future of the GLN12 well with one of two options being considered.

- The well shall be the subject of an abandonment and decommissioning programme and the site restored.
- The wellsite shall be developed further with the drilling of additional wells (subject to future regulatory consents).

For clarity well abandonment and decommissioning is being considered as part of this permit application, though timescale for which this activity could be undertaken cannot be confirmed as it is contingent on the outcome of the well testing phase.

### 5.2 Proposed Permitted Activities

To facilitate the proposed development a number of activities will need to be permitted under EPR2016. As no permit currently exists for the Glentworth West Wellsite the following activities are required as outlined in the following subsections.

#### 5.2.1 Mining Waste Operation

Schedule 20 of EPR2016 defines a mining waste operation as being the management of extractive waste, whether or not it involves a waste facility. The drilling of the GLN12 borehole and GLN12z sidetrack is considered a mining waste operation as it results in the production, and therefore management of extractive waste in the form of drilling cuttings, muds and other extractive waste streams. Furthermore, the testing phase will also result in extractive waste in the form of associated natural gas, as will the proposed acid wash which may result in spent acid being produced.



For clarity the volume of gas to be incinerated is anticipated to be significantly below 10 tonnes per day and as such the flaring of natural gas is considered to fall within Schedule 20 of EPR2016 as opposed to a Schedule 1, Section 5.1 Installation.

### **5.2.2 Installation**

Schedule 1, Part 2 of EPR2016 details a number of activities that are classified as an Industrial Emissions Activity including 'Energy Activities' (Chapter 1). Energy Activities include the storage of crude oil and the specific activity is cited under EPR2016, Schedule 1, Part 2, Chapter 1, Section 1.2, Part A(1) (e)(i).

*'The loading, unloading, handling or storage of, or the physical, chemical or thermal treatment of crude oil.'*

The proposed operation has the potential to involve the handling and storage of crude oil within the site, and as such a permit will need to be in place to permit the loading, unloading, handling or storage of, or the physical, chemical or thermal treatment of crude oil.

### **5.2.3 Radioactive Substances Activity**

Schedule 23 of EPR2016 provides for the control of Naturally Occurring Radioactive Material (NORM). Schedule 23 defines the production of oil and gas as a NORM industrial activity and therefore any accumulation of radioactive waste, which exceeds concentrations set out in Table 1 of Schedule 23 of EPR2016.

Due to the potential production of oil and gas as part of the well testing phase a standard rules permit is being applied for.

## **6. DEVELOPMENT PROPOSAL**

### **6.1 Glentworth West Wellsite Construction**

To facilitate the drilling of the GLN12 appraisal borehole and the well test spread a new site known as the Glentworth West Wellsite is being constructed. Whilst the surface construction activities are not considered 'permitted activities' under EPR2016, it is important to outline how the site has been designed to ensure environmental containment should an onsite pollution event occur.

The wellsite will be constructed by initially removing topsoil and subsoil and relocating it to the western boundary in separate soil bunds. The purpose of creating soil bunds is twofold, it is stored onsite to enable the wellsite remediation phase to utilise the previously excavated soils and whilst stored provides mitigation against visual impact to any nearby receptors. This method prevents the accumulation of waste. If required, the subsoil may be the subject of a 'cut to fill' method which involves the excavation of top soil from the higher areas of the site and relocating it to the lower areas of the site to create a level plateau.

Once the wellsite is level a ditch will be excavated around the perimeter of the 'active area' of the wellsite. The perimeter ditch will form part of the wellsites containment measures ensuring that any rainwater and surface spillages are contained to the wellsite. Following the excavation of the perimeter ditch the 'active area' will be overlaid with a High Density Polyethylene (HDPE) membrane to provide integrity and ensure any surface water and spillages flow to the perimeter ditch for subsequent collection by road tanker. The HDPE will be protected by two layers of non-woven geo-textile matting which will be placed above and below the HDPE membrane to provide protection from the underlying ground and from the site surface, reinforcing the site integrity. The HDPE membrane will be integrity tested during its installation.

Stone aggregate will be used for the surface of both the 'active' and 'non active' area of the wellsite. For clarity the 'non active' area of the wellsite whilst within the 'regulated facility' boundary is to house a car parking area, fire water tanks and potentially offices.

A drilling cellar will be constructed in the centre of the 'active area' of wellsite for housing the wellhead. Typically well cellars are constructed around the large diameter casings using precast concrete rings encased in a concrete jacket surround or building a concrete cellar. The impermeable membrane is incorporated into the cellar construction to maintain environmental integrity of the active area of the wellsite. The exact design of the well cellar has yet to be confirmed. A concrete drilling pad will be constructed at surface, immediately surrounding the drilling cellars. The concrete pad will be sized and constructed to take the ground loading of the drilling rig.

### **6.2 Drilling of the Glentworth 12 Borehole and Glentworth 12 Sidetrack**

The exact well design will be contingent on the actual conditions encountered during drilling, however an indication of how the well will be constructed is provided in Figure 2 and Figure 3.

In order to drill the well several drilling fluid additives will be required. All drilling fluid additives shall be the subject of approval by the Environment Agency prior to the undertaking of any drilling activities. The 'Operator' is proposing to use several drilling additives, details of which have been provided within a Chemical Inventory together with the location on where these additives shall be used within the well. The drilling fluids will be selected and matched to underground conditions.

Age	Formation Tops	TVDSS (m)	MDGL (m)	Glentworth 12 Pilot Hole Casing and Cementing		Hole Size	Casing Size	Mud System	Cemented
Quaternary	Drift								
Jurassic	Lower Lias	28	0			17.5"	13.375"	WBM	Cemented
	Hydraulic Lst	-97	127						
Triassic	Lilstock Fm	-108	138						
	Westbury Fm	-115	144						
	Blue Anchor Fm	-121	150						
	Mercia Mudstone	-136	165						
	Glenparva Fm	-142	172						
	Sherwood Sandstone Fm	-386	415					WBM	Cemented
Permian	Upper Marl	-669	699						
	Anhydrite Marker	-702	733						
	Base Anhydrite Marker	-707	738						
	Upper Magnesian Limestone	-717	748						
	Middle Marl	-746	778						
	Lower Magnesian Limestone	-785	820						
	Lower Marl	-875	926			12.25"	9.625"		
	Base Permian Unconformity	-894	950						
Westphalian 'C'	Ravenfield Rock	-924	993						
	Wickersley Rock	-935	1009						
	Wickersley Rock Base	-952	1036						
	Ackworth Rock	-978	1082					OBM	Cemented
	Ackworth Rock Base	-1009	1144						
	Top MB	-1012	1150			8.5"	7"		
	Shafton Coal	-1032	1195						
	Top Mexborough Sandstone (Seismic Pick)	-1042	1220						
	Base Mexborough Sandstone	-1061	1276			6"	5"	WBM or OBM	Open Hole
Westphalian 'B'	Sharlston Top Coal	-1088	1345			4.125"	2.875"		
	TD	-1119	1411			<b>Not To Scale</b>			

Note: All formations and casing setting depths +/- 150 meters.

Figure 2: GLN12 Indicative Well Montage

Age	Formation Tops	TVDSS (m)	MDGL (m)	Glentworth 12z Sidetrack Casing and Cementing		Hole Size	Casing Size	Drilling Mud	Cemented
Quaternary	Superficial Drift								
Jurassic	Lower Lias	28	0			17.5"	13.375"	WBM	Cemented
	Hydraulic Limestone	-97	127						
Triassic	Lilstock Formation	-108	138						
	Westbury Formation	-115	144						
	Blue Anchor Formation	-121	150						
	Mercia Mudstone Group	-136	165						
	Glenparva Formation	-142	172						
Permian	Sherwood Sandstone Formation	-386	415						
	Upper Marl	-669	699					WBM	Cemented
	Anhydrite Marker	-702	733						
	Base Anhydrite Marker	-707	738						
	Upper Magnesian Limestone	-717	748						
	Middle Marl	-746	778						
	Lower Magnesian Limestone	-785	820						
	Lower Marl	-875	926			12.25"	9.625"		
Base Permian Unconformity	-894	950							
Westphalian 'C'	Ravenfield Rock	-924	993						
	Wickersley Rock	-935	1009						
	Wickersley Rock Base	-952	1036						
	Ackworth Rock	-978	1082						
	Ackworth Rock Base	-1009	1144			8.5" 6"	7" 5"	OBM	Cemented
	Top MB	-1012	1150			4.125	2.875"		
	Shafton Coal	-1032	1195						
	Top Mexborough Sandstone (Seismic Pick)	-1042	1220			4.125"	2.875"	WBM or OBM	Open Hole / Slotted
TD		-1052	1815					<b>Not To Scale</b>	

Figure 3: GLN12z Indicative Well Montage

### 6.3 Well Testing

The well testing phase can be split into two phases commonly referred to as a well clean up phase and an extended well testing phase. The entire well testing phases will take no longer than 12 months. It is anticipated based on data from the neighbouring wells that oil is the primary commodity and natural gas has the potential to be associated.

#### 6.3.1 Well Clean Up

A well clean up is conducted when trying to bring the reservoir fluids to surface for the first time following a drilling campaign, after a maintenance shutdown or after a period of non-operation or well testing. The aim of the well clean up is to get the reservoir fluids to surface and flowing at a consistent rate for onward extended well testing.

A well clean up will involve the use of a well testing spread, typically consisting of at least a choke manifold, surface safety valve, three-phase separator, a heater unit, fluid storage tanks, a vent line and a combustion unit.

Once at surface, gas and produced fluids will be diverted by temporary pipework to a separator, which will separate out the produced fluids and gas. The mixed fluids (oil and water), will be diverted via temporary pipework to dedicated storage tanks onsite for subsequent offsite removal to the Welton Gathering Centre which is also operated by the 'Operator'. Waste gas produced as a result of the well clean-up operations shall be managed in accordance with the approved BAT as demonstrated by the Waste Gas Management Plan. It is considered that a shrouded flare unit will be considered BAT due to its capability to operate over a wide ranging flowrate.

#### 6.3.2 Extended Well Testing

Should the well clean up phase indicate that hydrocarbons are present then testing operations will continue with the extended well testing stage. An extended well testing stage is a longer duration test, which is carried out to assess the commercial viability of the well and establish detailed gas and oil composition.

Once at surface, gas and produced fluids will be diverted by temporary pipework to a separator, which will separate out the produced fluids and gas. The mixed fluids (oil and water), will be diverted via temporary pipework to dedicated storage tanks onsite for subsequent offsite removal to the Welton Gathering Centre which is also operated by the 'Operator'. Waste gas produced as a result of the well clean-up operations shall be managed in accordance with the approved BAT as demonstrated by the Waste Gas Management Plan. It is considered that an enclosed flare unit will be considered BAT due to its capability to incinerate highly efficiently within its designed operating capabilities.

The mixed fluids (oil and water) produced during the extended well test has the potential to contain low levels of Naturally Occurring Radioactive Material (NORM) and as such will require an RSR permit for the accumulation and disposal of radioactive waste associated with the onshore oil and gas industry. A Standard Rules 2014 No.4 permit will be applied for.

The purpose of an extended well test is to analyse the flow characteristics of a formation over an extended period.

## **6.4 Well Treatment - Acid Wash**

During drilling the geological formation nearest to the wellbore may become affected and the natural permeability of the target formation may be reduced by the fine particles created during drilling, along with some of the drilling muds. The fine particles and drilling muds block, or blind, the natural pore spaces in the rock. An acid wash is used to clean the well out following drilling in order to return the natural porosity and permeability of the damaged formation.

The acid is pumped, directly to the area of geological formation that requires cleaning. Only a small volume of dilute acid is applied. The pressures applied to pump the acid in to the well should be enough to counterbalance the down-hole pressure and slightly exceed the formation pressure. The pressure applied allows the acid to move down the well and a short distance in to the formation. This enables the rock and fine particles to be dissolved and creates narrow channels to enable flow between the near wellbore formation and the wellbore.

An acid wash activity requires low pressures, and the Environment Agency considers it to be a well treatment, rather than a geological formation treatment. With respect to the protection of the groundwater environment this is considered to be a very low risk activity.

## **6.5 Well Abandonment and Decommissioning**

If it is concluded by the 'Operator' that the well is not commercially viable then a decision will be made whether or not to abandon and decommission the well. Should the decision be taken to abandon the well it will be abandoned in accordance with industry guidance, in force at the time of well decommissioning. Currently this requires all distinct permeable zones penetrated by the well to be isolated from each other and from surface by a minimum of one permanent barrier.

The initial design and construction of the well takes into consideration the permeable zones encountered during the drilling operation and whether any of these zones are hydrocarbon-bearing or over-pressured and water-bearing. Construction of the borehole has provided adequate sealing of these zones when cementing in the various steel casing strings.

If any permeable zone penetrated by the well is hydrocarbon-bearing or over-pressured and water-bearing then the requirement is for two permanent barriers from surface, the second barrier being a back-up to the first.

Once the well is abandoned, the casing strings will be mechanically cut off at 1.5 m below original ground level and a steel plate welded over the top. The pre-cast concrete drilling cellar would then be removed and the site restored to its former use.

In addition to industry guidance the well abandonment(s) will be undertaken in accordance with The Borehole Sites and Operations Regulations 1995 [REF.6] and The Offshore Installations and Wells (Design & Construction) Regulations 1996 [REF.7] and all other applicable industry guidance and standards and reviewed by an independent well examiner.



## 7. RISKS POSED TO THE ENVIRONMENT AND HUMAN HEALTH

The risks posed by the 'mining waste operation' has been addressed within an Environmental Risk Assessment which forms part of any application to the Environment Agency and is considered an 'operating technique'. The Environmental Risk Assessment (which is qualitative) considers activities which have the potential to cause harm to the environment and human health (pollution damage).

The Environmental Risk Assessment has concluded that the risk to the Environment and Human Health is 'insignificant' not least due to the type of activities being undertaken, the nature of the waste and the mitigation measures adopted by the 'Operator'.

The Environmental Risk Assessment follows the Environment Agency's source-pathway-receptor' model and includes the risks posed from the site operations in relation to:

- accidents and incidents;
- air Emissions;
- dust;
- noise;
- odour
- release to water;
- global warming potential; and
- waste.

## **8. OPERATING TECHNIQUE'S AND SUPPORTING DOCUMENTATION**

A number supporting documents (some of which are considered 'operating techniques') have been submitted to the Environment Agency for approval previously. Any future revision to an 'operating technique' requires approval from the Environment Agency prior to implementation.

### **8.1 Application Forms**

Application Forms accompany any application to the Environment Agency. The Application Forms provide details on the 'Operator', the 'regulated facility', the activities to be undertaken and the limits of those activities.

### **8.2 Environmental Risk Assessment**

The Environmental Risk Assessment is an 'operating technique' and principal document ensuring that the risk posed to the environment by site operations is reduced to as low as possible, so far as reasonably practicable. The Environmental Risk Assessment follows the Environment Agency guidance using the Source-Pathway-Receptor model. The mitigation provided within the Environmental Risk Assessment shall be implemented at the site.

### **8.3 Site Location and Site Layout Plans**

Site Plans are provided to illustrate the location of the 'regulated facility', together with an indicative layout plan of each phase. Emissions points and monitoring points may also be illustrated on the plans where relevant together with any additional information as requested by the Environment Agency.

### **8.4 Waste Management Plan (Mining Waste)**

The Waste Management Plan is an 'operating technique' and principal document ensuring that the 'Operator' complies with the conditions of the issued permit. It provides information on the 'mining waste operation' to be conducted and the waste management arrangements for the extractive waste streams.

### **8.5 Site Condition Report**

The Site Condition Report is an 'operating technique' and principal document ensuring that the 'Operator' has provided a record of the site condition prior to the commencement of 'permitted activities'. It will continue to be updated as the development progresses and record any changes to the environment upon permit surrender. A Site Condition Report is required for applications concerning 'installation activities' in accordance with EPR2016.

### **8.6 Chemical Inventory**

The Chemical Inventory (together with Safety Data Sheets) is an 'operating technique' detailing the chemicals proposed as part of the development i.e. down the wellbore or within the installation process. It outlines the volume and concentration of products (i.e. drilling fluid and treatment additives) and details the location they are to be used.

### **8.7 Waste Gas Management Plan**

The Waste Gas Management Plan is an 'operating technique' and principal document ensuring that the 'Operator' complies with the waste gas management arrangements for the site. The Waste Gas Management Plan demonstrates to the Environment Agency that the 'Operator' has considered the Best Available Techniques for the management of waste gas. It also provides a drawing highlighting the point source emissions to air.



## REFERENCES

1. The Environmental Permitting (England and Wales) Regulations 2016  
Available at: <https://www.legislation.gov.uk/uksi/2016/1154/contents/made>
2. Council Directive 2006/21/EC on the management of waste from extractive industries and amending Directive 2004/35/EC  
Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02006L0021-20090807&from=EN>
3. Council Directive 2010/75/EU on the industrial emissions (integrated pollution prevention and control)  
Available at <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010L0075&from=EN>
4. European Union (Withdrawal) Act 2018  
Available at: <https://www.legislation.gov.uk/ukpga/2018/16/contents/enacted>
5. Department for Environment Food & Rural Affairs (2020) Environmental permitting: Core guidance: For the Environmental Permitting (England and Wales) Regulations 2016 (SI 2016 No 1154)  
Available at:  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/935917/environmental-permitting-core-guidance.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/935917/environmental-permitting-core-guidance.pdf)
6. The Borehole Sites and Operations Regulations 1995  
Available at: <https://www.legislation.gov.uk/uksi/1995/2038/contents/made>
7. The Offshore Installations and Wells (Design & Construction, etc) Regulations 1996  
Available at: <https://www.legislation.gov.uk/uksi/1996/913/contents>



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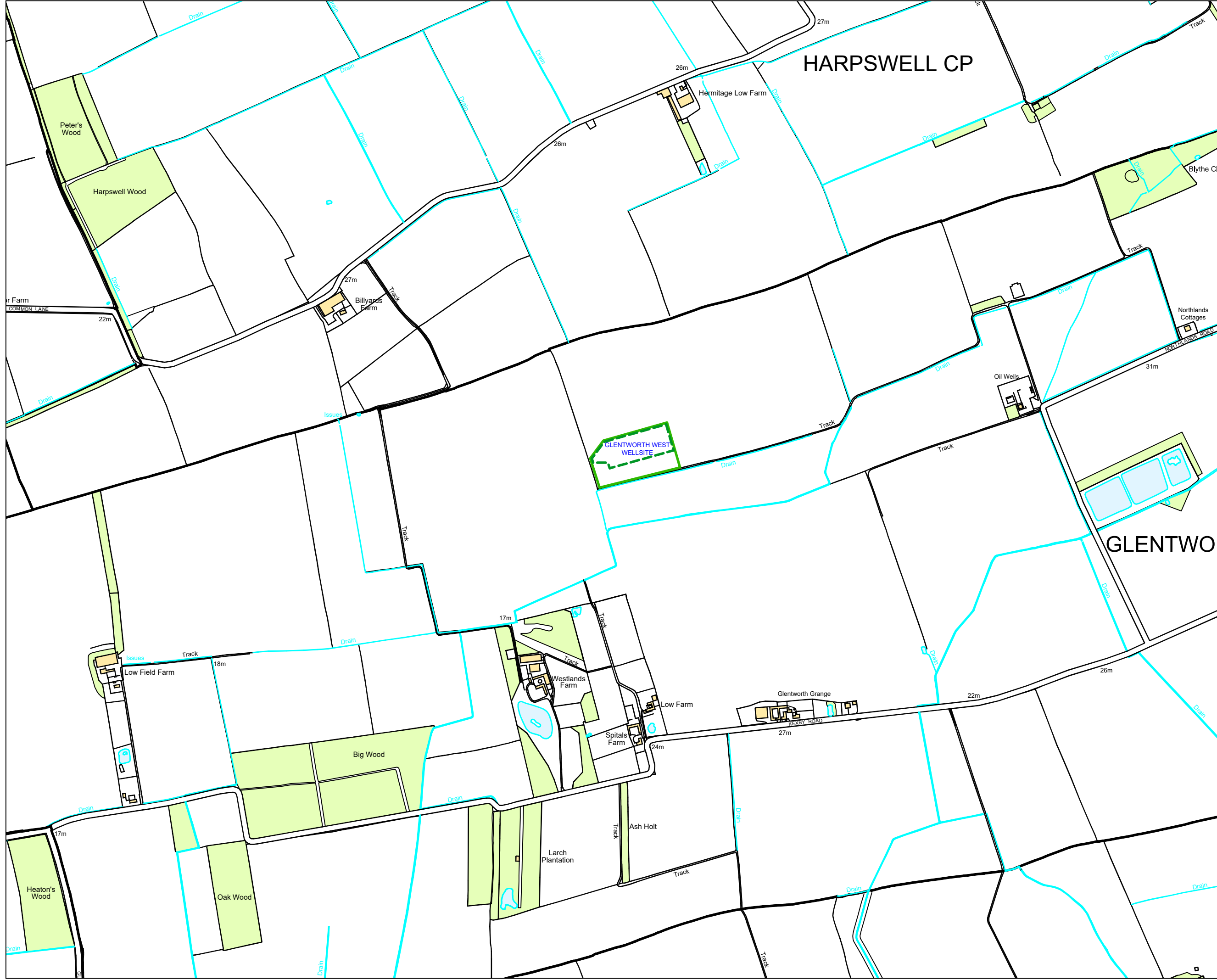


## **APPENDIX 1 - REGULATED FACILITY BOUNDARY PLAN**



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KEY:  
 PERMIT BOUNDARY (MINING WASTE & NORM)   
 PERMIT BOUNDARY (OIL STORAGE)   
 WATER FEATURE (PONDS, DRAINS)

NOTES:

REVISION HISTORY					
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
0	OCT22	JF	FIRST ISSUE	JF	
REV	DATE	BY	DETAILS	APR	

**ZETLAND GROUP**  
 FROM CONCEPTION TO COMPLETION

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SITE: GLENTWORTH WEST WELLSITE, LINCOLNSHIRE

PROJECT: DRILLING & TESTING OPERATIONS

TITLE: LOCATION PLAN


CLIENT: IGAS ENERGY PRODUCTION LIMITED


Scale: 1:10,000	DWG. No: ZG-IGAS-GLN-EPR-01
Size: A3	
Sheet: 1 of 1	


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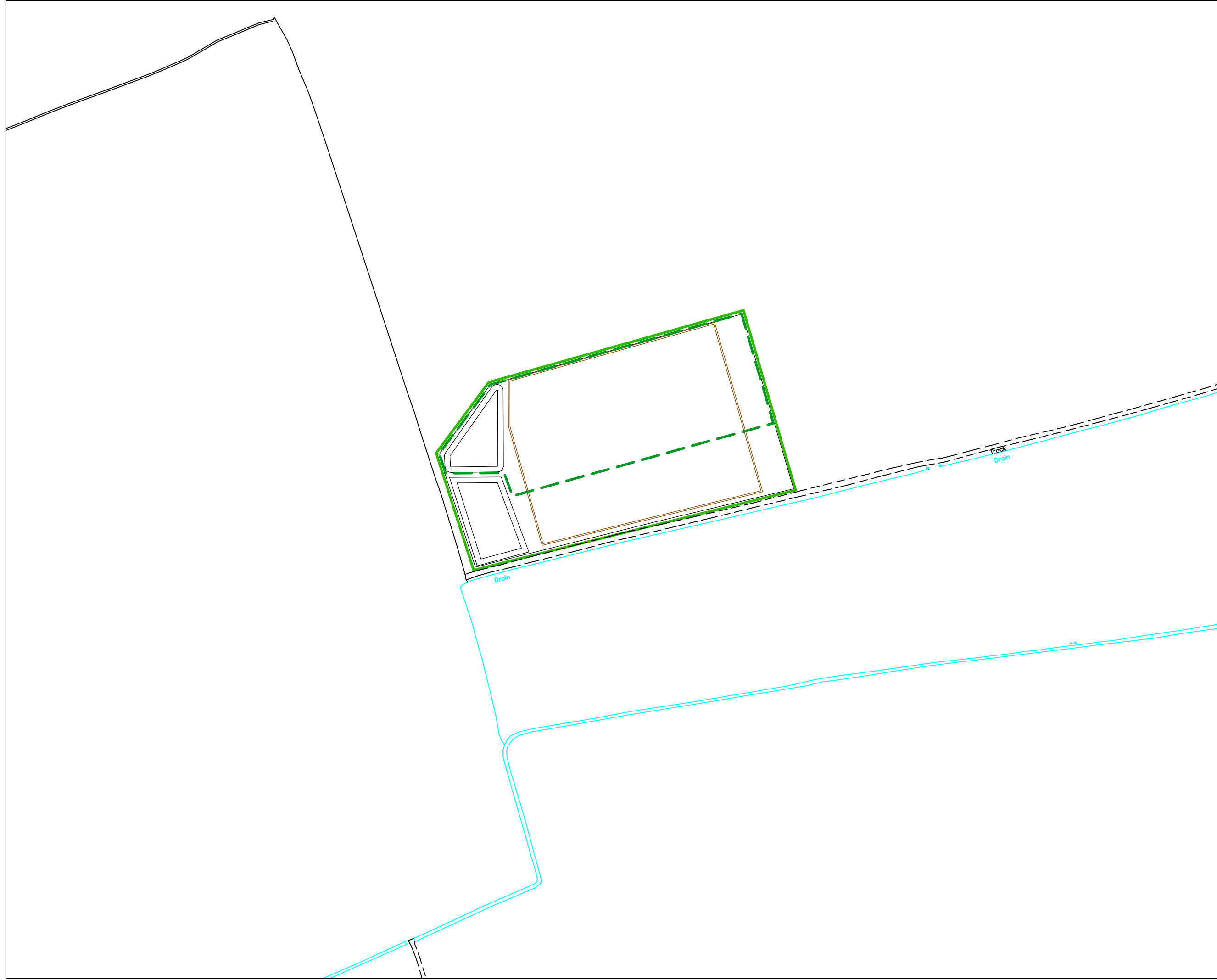


KEY:

PERMIT BOUNDARY (MINING WASTE & NORM) 

PERMIT BOUNDARY (OIL STORAGE) 

WATER FEATURE (PONDS, DRAINS) 



NOTES:

REVISION HISTORY				
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
0	OCT22	JF	FIRST ISSUE	JF
REV	DATE	BY	DETAILS	APR



FROM CONCEPTION TO COMPLETION

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SITE: GLENTWORTH WEST WELLSITE, LINCOLNSHIRE

PROJECT: DRILLING & TESTING OPERATIONS

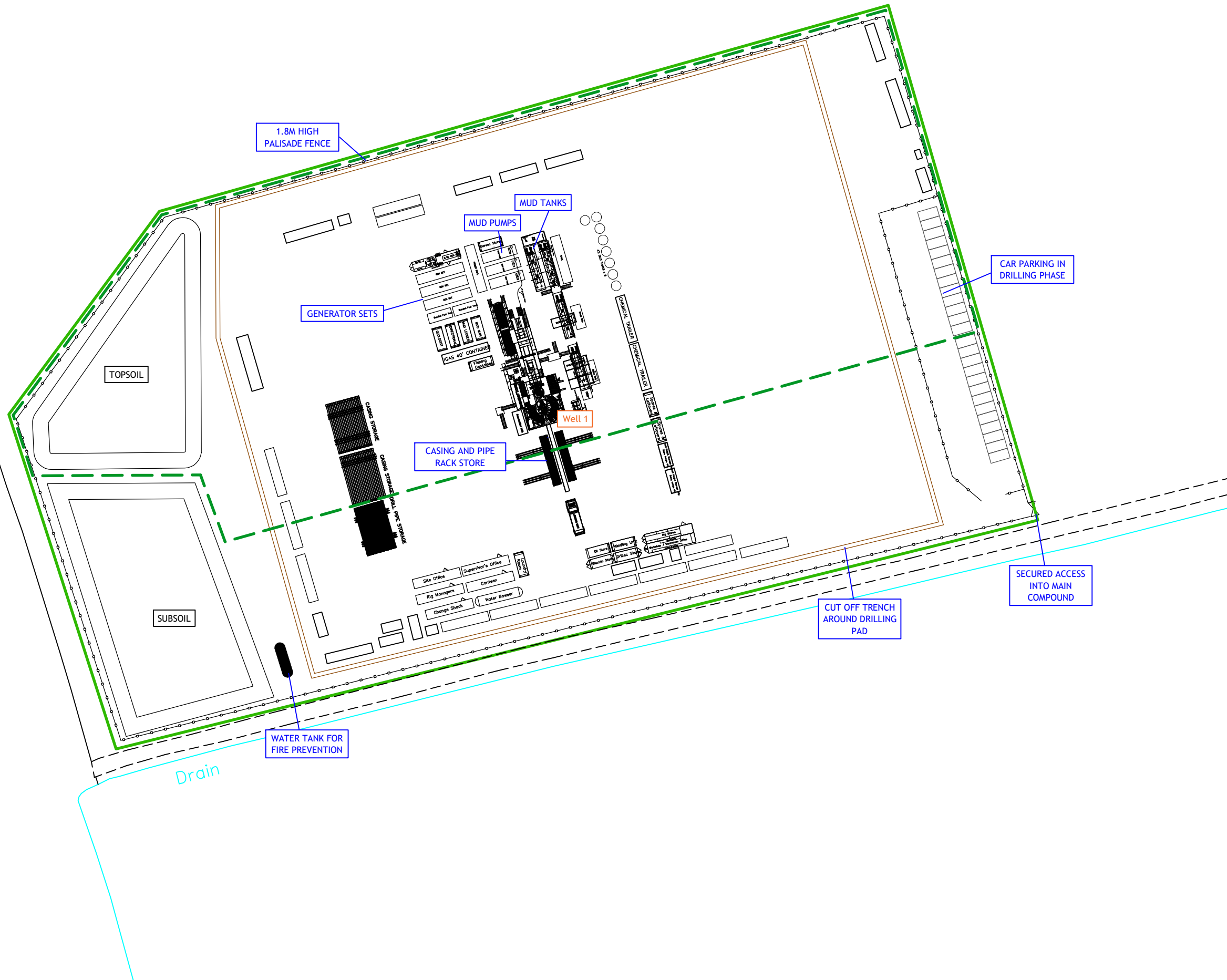
TITLE: LOCATION PLAN

CLIENT: IGAS ENERGY PRODUCTION LIMITED

Scale:	1:2,500	DWG. No:	ZG-IGAS-GLEN-EPR-02
Size:	A3		
Sheet:	1 of 1		



- KEY:
- PERMIT BOUNDARY (MINING WASTE & NORM)
  - PERMIT BOUNDARY (OIL STORAGE)
  - WATER FEATURE (PONDS, DRAINS)



EMISSIONS POINT:

NOTES:

REVISION HISTORY				
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
0	OCT22	JF	FIRST ISSUE	JF
REV	DATE	BY	DETAILS	APR



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SITE: GLENTWORTH WEST WELLSITE, LINCOLNSHIRE

PROJECT: DRILLING & TESTING OPERATIONS

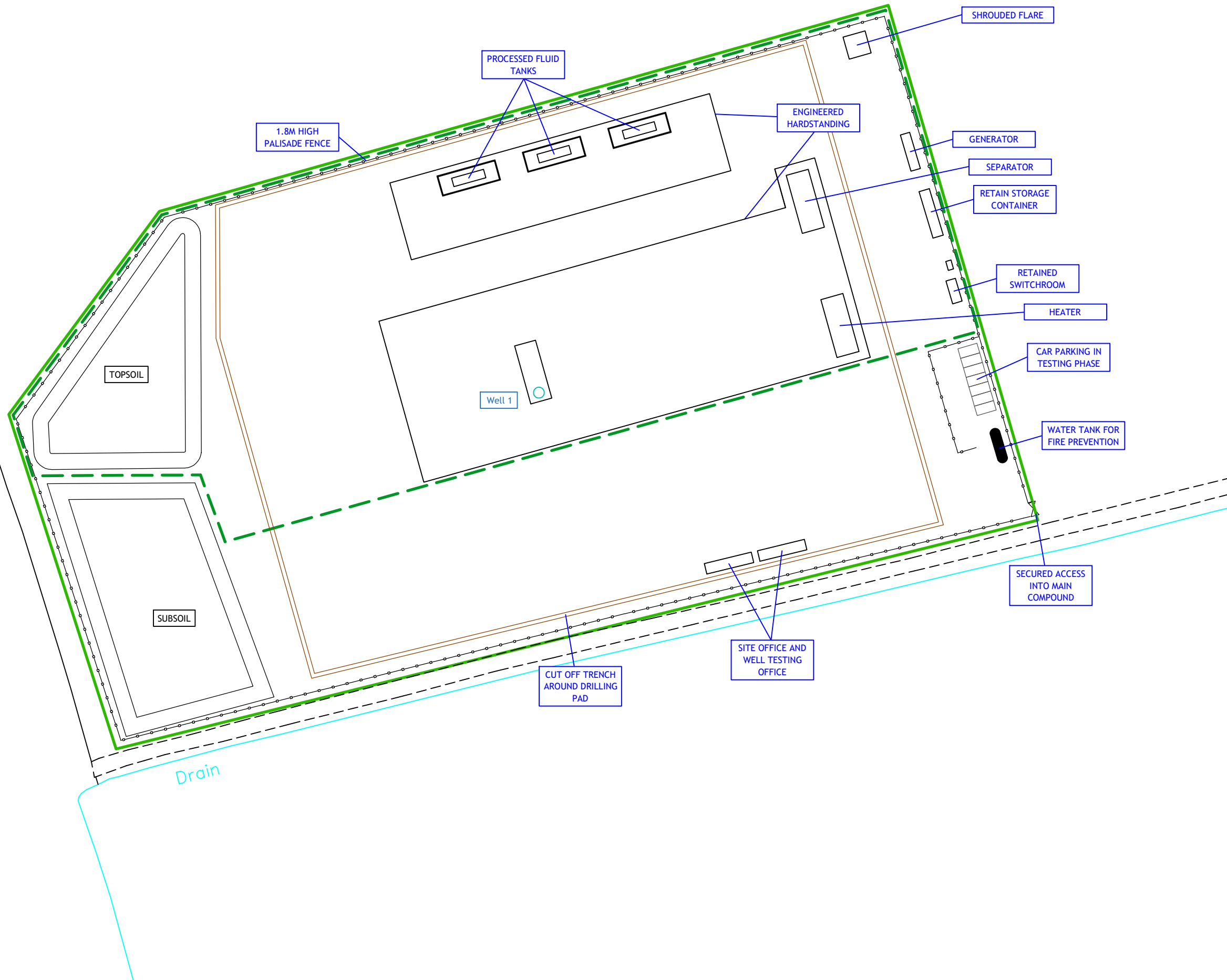
TITLE: SITE LAYOUT PLAN - DRILLING PHASE

CLIENT: IGAS ENERGY PRODUCTION LIMITED

Scale:	1:1,000	DWG. No:	
Size:	A3		
Sheet:	1 of 1		ZG-IGAS-GLEN-EPR-03



KEY:  
 PERMIT BOUNDARY (MINING WASTE & NORM)   
 PERMIT BOUNDARY (OIL STORAGE)   
 WATER FEATURE (PONDS, DRAINS)



EMISSIONS POINT:

NOTES:

REVISION HISTORY					
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SITE: GLENTWORTH WEST WELLSITE, LINCOLNSHIRE

PROJECT: DRILLING & TESTING OPERATIONS

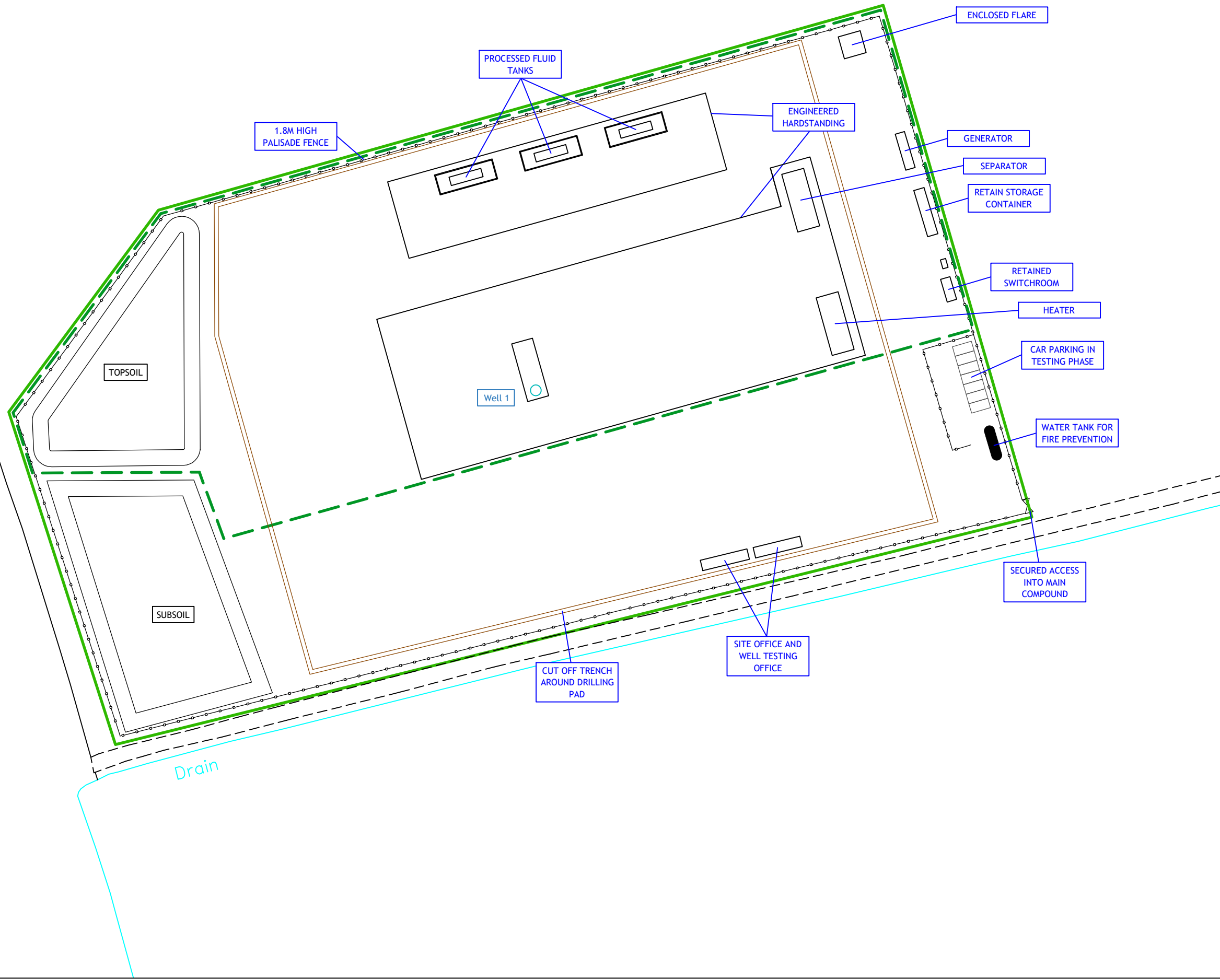
TITLE: SITE LAYOUT PLAN - INITIAL WELL TESTING PHASE

CLIENT: IGAS ENERGY PRODUCTION LIMITED





- KEY:
- PERMIT BOUNDARY (MINING WASTE & NORM)
  - PERMIT BOUNDARY (OIL STORAGE)
  - WATER FEATURE (PONDS, DRAINS)



EMISSIONS POINT:

NOTES:

REVISION HISTORY				
REV	DATE	BY	DETAILS	APR
0	OCT22	JF	FIRST ISSUE	JF

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SITE: GLENTWORTH WEST WELLSITE, LINCOLNSHIRE

PROJECT: DRILLING & TESTING OPERATIONS

TITLE: SITE LAYOUT PLAN - EXTENDED WELL TESTING PHASE

CLIENT: IGAS ENERGY PRODUCTION LIMITED

Scale:	1:1,000	DWG. No:	
Size:	A3		ZG-IGAS-GLEN-EPR-05
Sheet:	1 of 1		