From: Chris Bartlett
To: [redacted]
Cc: [redacted]
Subject: FW: Broadford Bridge - Condition 22 (Foul & Surface Water) & Condition 23 (Construction Method Statement)
Date: 20 August 2014 16:35:00
Attachments: [redacted]

Hi Alex,

Planning Permission No: WSCC/052/12/WC
Description of Development: The siting and development of a temporary borehole, well site compound and access road including all ancillary infrastructure and equipment, on land at Wood Barn Farm, Broadford Bridge, for the exploration, testing and evaluation of hydrocarbons in the willow prospect.
Location of Development: Wood Barn Farm, Adversane Lane, Broadford Bridge, Billingshurst, West Sussex
District/Borough: Horsham District Council

With regards to the submitted information for the foul and surface water drainage schemes and the construction method statement, I am now able to discharge conditions 22 and 23.

Kind regards,
Chris

Chris Bartlett | Planner, County Planning, West Sussex County Council | Location: 2nd Floor Northleigh, County Hall, Chichester, PO19 1QT
Internal: 26946 | External: 0330 222 6946 | E-mail: chris.bartlett@westsussex.gov.uk

Information for Condition 23

GROUNDWATER PROTECTION/DRAINAGE

1) **Storage of plant and materials used in constructing the development**

1.0 The main source of contamination during construction will be from the equipment used to construct the site, such as excavators and bulldozers. Highway vehicles should not be on the site long enough to pose a threat but private vehicles used by the workforce should be checked for signs of oil drips, and all equipment stored overnight on the partly constructed site should have drip trays placed under the engine sumps to intercept any fuel or oil drips.

1.1 Any temporary fuel bowser will be contained either within a bunded area of 110% of its total capacity, or be double-skinned and with a drip tray under the hose end.

1.2 The construction process does not use liquids other than freshly batched concrete that would be placed in the bottom of the cellar and there is no significant free water associated with fresh concrete. Consequently, the risk of contaminated liquids flowing from the partly constructed site is non-existent.

2) **Storage of fuels, oils and additives** (Construction and Testing Phases)

2.1 Refuelling activity will be in accordance with industry standard operating practices (e.g. NPPF). Refuelling activities from the delivery tanker to the main diesel container shall be a supervised operation to prevent overfilling, poor connections and to respond to leaks in a timely manner. To prevent a pathway for diesel spills or leaks, secondary containment shall be located underneath connections and pipes to capture drips or leaks. In addition, spill kits will be provided by Celtique and will be kept available on location to deal with any small spills. The site layout shall be constructed to minimise the length of refuelling pipe from the tanker to the container. In the event of a spill the operations shall respond as per Pollution Incident Plan.

2.2 Any bunded areas would have a retention capacity of 110% of the tanks within the bund.

2.3 The rig is supplied by a double skinned diesel storage tank of up to 50,000 litres. The design of this double skinned (to provide secondary containment) diesel tank is in compliance with the Control of Pollution (Oil Storage) Regulations 2011. The diesel fuel tanks are located inside of the containment area. Inspection of this diesel storage container shall form part of the daily HSE inspection tour. There may be smaller tanks for the daily operation of the generators, situated on the generators themselves and provided with drip trays. Requirements for deliveries of diesel fuel and prevention of any leakage are covered by operational procedures and training.

2.4 There are also lubricants and hydraulic oils associated with the maintenance of the drill rig and associated equipment. They are anticipated to be mineral based and non-chlorinated. Separate storage areas with drip trays or secondary containment will be provided for all items and spill kits will be available to deal with any spillage. As per the previous section all containers need clear labelling to identify contents, toxicity and capacity of the storage containers. Daily inspections are required by the site HSE Advisor to ensure any tanks used are not being overfilled.

3) Scheme for recycling/disposing of waste resulting from construction works/storage

3.0 Four sources of waste would require to be removed from the site:

a) drilling mud/fluids* and cuttings located in the mud tanks,
b) surface water collected in the perimeter ditches around the well pad area,
c) cement, general dry waste-paper, timber, scrap metal - collected in skips,
d) sanitary waste collected in sealed tanks located under each cabin.

* Drilling fluids are also known as drilling muds and are hereafter referred to as drilling muds.

a) <u>Drilling Mud and Cuttings</u>

3.1 Mud cuttings produced from drilling and testing operations would be removed by licensed operators and disposed of at authorised locations. Oil-based mud (OBM) would be removed by its supply company for recycling and any oil residue will be tankered off site at the completion of the well for disposal at a registered disposal site. Water-based mud (WBM) will be transferred to tankers for disposal at a registered disposal site.

3.2 Cuttings only arise from the drilling of the borehole to its target depth. The drill bit size is reduced with depth to reduce hole size and therefore reduce cuttings volume. The volume of cuttings is conservatively estimated based on simple geometric considerations (70% greater than well volume). Where possible, these surface waste solids are recycled into compost/soil improver and eventually for land reclamation/improver. Estimated waste quantities, classification and management controls are summarised in Table 3.2 (EWC Classification refers to the European Waste Catalogue)

Table 3.2: Drill Cuttings: Estimated surface waste quantities, classification and controls

Activity	Waste Type	EWC 2002 Code	Classification	Waste Estimate (m^3)	Management Route
Cuttings from WBM	Waste gravel and crushed rocks other than those mentioned in 01 04 07	01 04 08 & 01 04 09	Non Hazardous	140	Collected and transported offsite for reclamation / treatment
Cuttings from OBM	Waste gravel and crushed rocks but containing dangerous substances from physical / chemical processing on metalliferous minerals	01 04 07 (mirror hazardous entry)	Hazardous	233	Transferred offsite for treatment and disposal

3.3 Drill cuttings that are separated at the surface from the drilling muds, as described above, are stored in steel rectangular open skips with a capacity of up to 40m³. The rectangular containers are subject to annual thickness inspections and daily visual integrity inspections. The waste is removed to one of several facilities that are appropriately permitted to receive, keep, store and treat industrial wastes of this

nature (or exempt from the requirement to hold a permit) and are typically graded into recycled aggregate.

b) Surface water

3.4 For most of the time surface water collected in the site drainage is likely to be used in drilling-mud and make-up but otherwise, when conditions dictate, it would be collected for disposal at an authorised licensed site.

c) Cement, general waste, etc

3.5 Pumped volumes of cement are controlled to minimise returns at surface. Returning cement cannot be reused on site but, due to the small quantities involved, the cement can be sent for recycling to an offsite authorised waste facility.Estimated waste quantities, classification and management controls are summarised in Table 3.6 (EWC Classification refers to the European Waste Catalogue)

Table 3.6: Cement: Estimated waste quantities, classification and controls

Activity	Waste Type	EWC 2002 Code	Classification	Waste Estimate (m^3)	Management Route
Grouting Cement	Concrete	17 01 01	Non Hazardous	25 (to be confirmed)	Likely to be mixed in with drilling muds

3.6 There are a number of miscellaneous, minor waste streams associated with the drilling operation. These are described below and estimated waste quantities, classification and management controls are summarised in Table 3.10 (EWC Classification refers to the European Waste Catalogue)

3.7 Oil / Diesel wastes (rags/granules): Design, procedural controls, training and an effective monitoring regime minimise the frequency and consequence of spillages. Response plans and training ensure effective clean-up of any minor spills using rags / granules. Equipment impacted includes: diesel tank and rotating rig equipment.

3.8 Packaging: There is very little packaging on the site other than plastic additive wrappings. Wooden pallets are stacked for collection and recycling

3.9 Office & Canteen Wastes: The operation of the site requires on-site operatives for whom welfare provisions must be installed. No practical reduction measures. However, separate bins (or enclosed skips) will be provided onsite for these wastes. The bins/skips will be collected by a private waste contractor, most probably on a weekly basis. It may be possible to recover paper or cardboard materials, and separate containers will be provided to collect these materials.

Table 3.10: Other: Estimated waste quantities, classification and controls

Activity	Waste Type	EWC 2002 Code	Classification	Waste Estimate (m^3)	Management Route
Diesel spills	Fuel oil and diesel	13 07 01*	Hazardous	0.25 / week	Collected by contractor for offsite recovery / disposal
Gear/lubricating oils for site/rig	Mineral based engine, gear and lubricating oils (non-chlorinated)	13 02 05*	Hazardous	0.2 / week (incl. absorbent material)	
Hydraulic oil for site/rig	Mineral based hydraulic oils (non-chlorinated)	13 01 10*	Hazardous	0.2 / week (incl absorbent material)	
Office waste	Paper and cardboard	20 01 01	Non Hazardous	1/ week	
Canteen waste	Biodegradable kitchen and canteen waste	20 01 08	Non Hazardous	1/ week	

d) Sanitary waste

3.10 The operation of the site requires on-site operatives for whom welfare provisions must be installed. No practical reduction measures. Foul drainage from the cabins would be collected in sealed tanks and emptied by a registered contractor at an approved treatment works.

4) Details of the construction of the engineered site to prevent pollution

4.1 The site will be constructed as a bunded, sealed, site with sufficient containment capacity to avoid possible pollutants from discharging into the aquifer and any risk of pollution caused by water run-off can be mitigated by using standard techniques developed by exploration companies to prevent pollution.

4.2 The internal site surface would be formed with crushed stone compacted on top of an impermeable geotextile layer such as Bentomat or a HDPE membrane with a nominal fall to the perimeter interceptor ditch. The Bentomat membrane has been proved to prevent loss of liquids from similar sites, even when located on permeable ground. The lining extends into the ditches and up the outer bunds to provide full containment of contaminants and surface water landing on the site.

4.3 R Elliott Associates will be inspecting and signing off the installation of the membrane to certify that it has been laid in accordance with the manufacturer's instructions.

4.4 The compound is largely rectangular with a width (west to east) of approximately 58m and a length (north to south) of approximately 92m and is underlain by this impermeable geotextile membrane which drains into an interceptor ditch. This interceptor ditch and retaining bund will be constructed around the compound to collect rain water runoff and contain any potential contaminants such as fuel and oils used in operating the site preparation and drilling machinery. This interceptor ditch comprises several elements that serve to store water.

4.5 The first element is an interceptor ditch around 0.6 m deep and 1.5m wide and lined with the impermeable geotextile membrane. This has an overall length of 140m and has the ability to contain approximately 75.6m^3 of fluid. In the event of an

‘emergency’, e.g. a large spill or a significant amount of surface water from a storm, the capacity can increase on a temporary basis to approximately 270m³. Fluids within the emergency capacity would need to be removed as soon as is practicable to avoid destabilising the binding that holds the site stone together.

4.6 Water within the ditch will be tankered off site for disposal to a registered disposal site or recycled into the drilling muds. Any oil residue is tankered off site at the completion of the well for disposal at a registered disposal site.

4.7 A variation on the inceptor ditch is to be used where the water tanks bridge across the ditch. In other areas trackway will be used to support the units over an inceptor ditch as described above, but where the water tanks are, the use of concrete troughs will be used to provide ditch stability and prevent the potential for ditch collapse. Approximately 45 metres of ditch will be constructed in this fashion, giving a storage capacity of 20.25m³. Further temporary capacity increases the volume to 34.65m³.

4.8 To the south of the site and around part of the east and west sides there will be a buried pipe beneath the site construction. As the site area required to accommodate the HH220 drilling rig and associated structures has increased, so a pipe has been chosen to allow water storage under the site, but still permit vehicle movement over the top at site level. This concrete pipe accounts for 104 metres of the interceptor/perimeter drain and holds 45.76m³ of fluid.

4.9 The cellar will be constructed in such a way as to avoid leaks from the cellar into the ground, using a system developed for building cellars in other sensitive locations. The concrete slab on site is formed with a slight gradient sloping towards the cellar. The cellar is sealed and the slab is on top of the impermeable geotextile layer that runs under the site so it is part of the overall larger impermeable site area. The surface water directed into the cellar can be either recycled into the drilling muds or disposed of off-site via a suction tanker to an authorised waste disposal facility

4.10 All surface run-off within the site would fall to the surrounding ditch within the site and contained for removal.

4.11 The manner of dispersal for externally sourced surface water would be unchanged, with rainwater expected to soak into the ground and disperse in the same way as present.

4.12 Sand bags would be located near the site entrance to prevent any potential pollutant from flowing off the site. Spill kits designed for all materials and substances used on site would be available to deal with any emergencies that could arise. During testing any accidental spillage from the produced fluid storage tanks would be contained within purposely designed container bunds. **The natural drainage of the land would not be impeded.**

4.13 As rainwater falling on the proposed site during its operational stage will be retained on site, there will be a decrease in discharge being tinkered out from the site. **Provided good management is maintained on the site to contain any risk of contaminants escaping from the site there should not be any increase in the risk of pollution or flood risk arising from the presence of the site.**

4.14 It is concluded that if the normal industry–wide measures for control of pollution are implemented there will not be any risk of pollution to the surrounding area. The methods of containment will also prevent any risk of flooding at or around the site due to discharge of surface water.

5) Details of the drilling muds and how they are used and stored on site

5.1 Volumes are calculated in advance of the drilling operation - planned drill to target depth. The drilling process is monitored by the Drilling Muds Engineer, and along with the Pit Volume Totaliser (PVT) and mud logging process this enables monitoring of volumes of muds pumped and returned.

5.2 Where the drill path may through aquifers, e.g. the Secondary Aquifers within the Weald Clay, the use of WBM will further reduce the risk of pollution due to the water-based, non-toxic properties of these drilling muds.

5.3 The OBM is treated for re-use during the drilling process by removal of solids (through the use of shale shakers and centrifuges) and the replenishment of the oil phase. Once drilling is completed, this repeat process enables the remaining oil based muds to be returned to the supplier for further conditioning and reuse.

5.4 Estimated waste quantities, classification and management controls are summarised in Table 3.1 (EWC Classification refers to the European Waste Catalogue) using the following logic:

- The drilling fluid used determines the total amount of waste. It is assumed that this results in a total waste volume of 390 m3 (factor 4 x volume of hole) when using WBM and 364 m3 (factor 2.5x volume of hole) when using OBM;
- The total anticipated volume of drill cuttings is very conservatively estimated to around 373m3 (based on around 70% greater than the hole volume), comprising approximately 140m3 inert (from WBM drilling) and 233m3 hazardous (from OBM drilling);
- This results in fluid waste volumes of WBM of 250 m3 (390 - 140) and for OBM of 131 m3 (364 – 233).

Table 5.4: Drilling muds: Estimated waste quantities, classification and controls

Activity	Waste Type	EWC 2002 Code	Classification	Waste Estimate (m^3)	Management Route
Drill to 2050 ft MD	WBM	01 05 04	Non Hazardous	250	Collected and transported offsite for reclamation / treatment
Drill from 2050 ft to target at 9793 ft MD	OBM	01 05 05	Hazardous	131	Transferred offsite for treatment and disposal

5.5 The drilling process involves the use of drilling muds that are circulated down the drill string and through the drill bit in order to remove the drilled formation cuttings, maintain hydraulic pressure and control the temperature of the drill bit.

5.6 Drilling muds used in Broadford Bridge-1 will fall into two categories:

a) Water based inhibitive drilling muds (WBM) containing salts such as potassium chloride (generally at a level of 3 to 7%) and / or sodium chloride (up to saturation) or other non-hazardous salts. They are typically used for drilling water sensitive formations. The additives reduce clay swelling or dispersion and the consequent borehole sloughing and colloidal solids retention in the mud;

b) Low toxicity oil based emulsion drilling muds (OBM) containing around 75% oil phase and the remainder a water phase of calcium chloride solution. These are typically used for drilling through highly water sensitive formations, particularly in deviated wellbores, in which otherwise clay dispersion and borehole sloughing are problematic to control.

5.7 Their applicability for the Broadford Bridge -1 well is shown in Table 5.7.

Table 5.7: Drilling Muds Used

Drilled section hole	Drilling fluid
$18^{5}/_{8}$"	Augured in – no drilling mud required
17.5"	WBM (Freshwater/polymer plus salt – type "a" above)
$12^{1}/_{4}$"	OBM (Oil Based Mud - type "b" above)
$8^{1}/_{2}$"	OBM (Oil Based Mud - type "b" above)

5.8 Both types of drilling fluid (WBM & OBM) contain additives to improve drilling performance or to address contingent impacts.

5.9 Drilling muds are stored on site in high volume storage tanks, circulated down through the drill bit and returned to surface via enclosed lines. The returned drilling muds are passed through mechanical separation devices which are used to extract solid drill cuttings. Further centrifugal treatment is used to remove finer drill cuttings from the muds. Continual sampling and analysis of the drilling muds monitors solids content within the circulated muds. Once the drilled solids content of the WBM mud reaches 6 to 10% by volume, it is considered degraded in terms of drilling performance and is pumped to open topped skips for off-site transfer via vacuum loading road tanker.

5.9 The waste drilling muds will be removed by vacuum loading road tanker to an authorised waste facility. The ultimate end waste management route for drilling muds will be dependent on the material composition and it is anticipated that:

- Water based muds will be transferred for disposal;
- Oil based muds will be transferred for conditioning, resale and reuse.

5.10 The mud storage tanks will subject to annual thickness inspections and weekly visual integrity inspections.

5.11 Drilling additives (which improve the properties of the drilling fluid) are supplied in dry powder and liquid form and are located inside of the drill site containment area.

Liquid additives are supplied in drums (typically holding either 25 litres or 208 litres) or intermediate bulk containers (IBC – typically holding around 1,000 litres) each with its own drip tray arrangement. A typical drilling operation may plan for around 10,000 litres of liquid additives. It is emphasised that not all additives will be on the site at any one time. In addition not all drilling additives will be used in the operation, some are on-site to address possible drilling contingencies which may not occur. However, even in the most conservative scenario where it is assumed that all liquid additives are on site at the same time, this maximum volume of around 10,000 litres of liquid drilling additive only equates to around 3% of the calculated volume of the interceptor ditch. Supplier's Material Safety Data Sheets (MSDS) are retained on site for each additive. Each container shall be labelled and stored in accordance with the suppliers' requirements and identified on the Pollution Incident Plan.

6) Emergency Preparedness & Response

6.1 To address the unlikely event of an emergency on site, Celtique Energie will develop emergency response plans in conjunction with the Drilling Contractor and utilising a Management Systems Bridging Document (reference HSEC-BB-OP-03) to ensure that all companies involved in an emergency response are aligned. These plans will cover safety and environmental responses to emergencies, all relevant personnel will be trained in their response roles and exercises will be held to verify competencies. They will include a Pollution Incident Plan which will be developed specifically for an environmental / pollution emergency and submitted to the Environmental Agency for inspection. This plan will identify the resources (people and equipment) in place to respond to and clean up pollution incidents. The Drilling Supervisor/ Site Supervisor will coordinate the response from a site perspective to implement this plan. It shall be tested within the first week of operations. Specific pollution issues addressed in the plan include:

a) **Fire Fighting Water:** The Drilling Supervisor is responsible for coordinating the site response to any fire in line with the site emergency response plan. The first priority is the health and safety of personnel. The Drilling Supervisor/ Site Supervisor, or an employee with the delegated authority, shall report the incident to Celtique Energie's Senior Management who will in turn notify the authorities (Environment Agency, Local Authority) of the incident, if required.

The safety of the site is effectively managed and fires are unlikely to occur. Any that do occur are likely to be small and capable of being extinguished by the site's portable fire

fighting equipment. The run off from the use of such extinguishers will remain within the rig containment area (in the bunds) and there will no pollution impact.
In the very unlikely event of a major fire, site firewater tanks are located near the main entrance to the well site compound (as required by West Sussex County Council Authority Planning Approval Condition 21) and external fire fighting resources will be requested to support the sites own fire team. These additional resources will have been identified in the response plan and contact made with the relevant fire brigade. While the use of such fire fighting water will initially be contained in the rig containment area, a 24 hour spill response contractor shall be contacted and deployed to support the continuing containment of such water (as required by PPG18). Contact details of contractor shall be located on the Pollution Incident Plan. Contractor shall also be briefed on the site Pollution Incident Plan.

b) Suspension of Operations: In the event of a safety incident on the rig or in the event of a breach of site security the drilling will be temporarily halted. In the event that such incidents require a short term suspension of operations the following controls will be implemented to prevent pollution:

- Stop drilling and pull bit back inside casing shoe;
- Continue to circulate while monitoring mud returns until incident is resolved;
- Monitor pit levels and address any losses/gains.

c) Spill Management: The use and transfer of liquids, e.g. additives, oils, fuels, shall be carried out with secondary containment (e.g. drip trays) in line with PPG7. The site will have a range of spill kits located around the site to provide rapid response to spillages. Before the start of operations, all personnel shall be briefed in the use and location of spill kits.

Each spill shall be cleaned up immediately and reported via the incident reporting system, regardless of size. As part of the daily HSE tour, each spill kit shall be examined to ensure it is still fit for purpose. In the very unlikely event of a large scale spill the impermeable membrane shall provide the principal source of containment. If further support is required for such an unlikely incident, the Drilling Supervisor shall coordinate the spill response, which includes notifying the 24 hour spill response contractor to support the clean-up of the spill. Details of the spill response contractor will be located on the Pollution Incident Plan. When contacting the spill response contractor, key information will include the estimated quantity and the contents (oil,

muds, chemis) of the spill. Celtique Energie shall respond to a spill as summarised below and as detailed in the oil spill response plans:

- **STOP / CONTAIN:** Site personnel to utilise spill mats and sandbags to contain spill;
- **NOTIFY:** Site personnel contact Emergency Response contractor for spill management and clean up if required;
- **NOTIFY:** Site personnel contact Celtique Energie senior management who will in turn contact EA;
- **REPORT:** Celetique Energie complete incident report form (with investigation from HSE team if required).

In the unlikely event of a large scale spill which requires the deployment of a spill response contractor, sampling of the local surface water shall be carried out for a minimum of 1 week after the spill or until agreed with the Environment Agency.

d) Spill on Access or Egress Road/Off Site: As a minimum, all liquid transfer of fuels, wastes or additives are expected to be transferred with spill kits. The 24 hour spill response contractor will be available to manage spillages off site as well as on site and also has the capability of supplying and utilising booms for use on land and water.

The Site HSE Advisor will carry out recorded spot checks on vehicles entering and leaving the site for spill kits.

Supplementary Information for Condition 22

GROUNDWATER PROTECTION/DRAINAGE

1) Prevention of surface water running on to the public highway

1.1 The existing situation regarding surface water around the proposed site entrance is that the water naturally drains to the lowest point in the field, which locally is to the south-east. A drain runs along the side of the road (B2133 Adversane Lane) to collect any water that has not drained into the ground by this point (in addition to the primary role of collecting surface water from the road). Consequently no surface water from the field reaches the public highway.

1.2 The proposed access track will be constructed with a raised area at the entrance for the protection of tree roots. This raised area also serves to restrict the passage of surface water towards the road, with only the water on the small incline ramp leading from the highway to the raised area possibly falling towards the road.

1.3 The remainder of the surface water will drain naturally as at present or be collected by the drain that runs alongside the road.

2) Disposal of surface water and foul water from site

2.1 The site will be constructed as a bunded, sealed, site with sufficient containment capacity to avoid possible pollutants from discharging into the aquifer and any risk of pollution caused by water run-off can be mitigated by using standard techniques developed by exploration companies to prevent pollution.

2.2 The internal site surface would be formed with crushed stone compacted on top of an impermeable geotextile layer such as Bentomat or a HDPE membrane with a nominal fall to the perimeter interceptor ditch. The Bentomat membrane has been proved to prevent loss of liquids from similar sites, even when located on permeable ground. The lining extends into the ditches and up the outer bunds to provide full containment of contaminants and surface water landing on the site.

2.3 The compound is largely rectangular with a width (west to east) of approximately 58m and a length (north to south) of approximately 92m and is underlain by this

impermeable geotextile membrane which drains into an interceptor ditch. This interceptor ditch and retaining bund will be constructed around the compound to collect rain water runoff and contain any potential contaminants such as fuel and oils used in operating the site preparation and drilling machinery. This interceptor ditch comprises several elements that serve to store water.

2.4 The first element is an interceptor ditch around 0.6 m deep and 1.5m wide and lined with the impermeable geotextile membrane. This has an overall length of 140m and has the ability to contain approximately 75.6m^3 of fluid. In the event of an 'emergency', e.g. a large spill or a significant amount of surface water from a storm, the capacity can increase on a temporary basis to approximately 270m^3. Fluids within the emergency capacity would need to be removed as soon as is practicable to avoid destabilising the binding that holds the site stone together.

2.5 Water within the ditch will be tankered off site for disposal to a registered disposal site or recycled into the drilling muds. Any oil residue is tankered off site at the completion of the well for disposal at a registered disposal site.

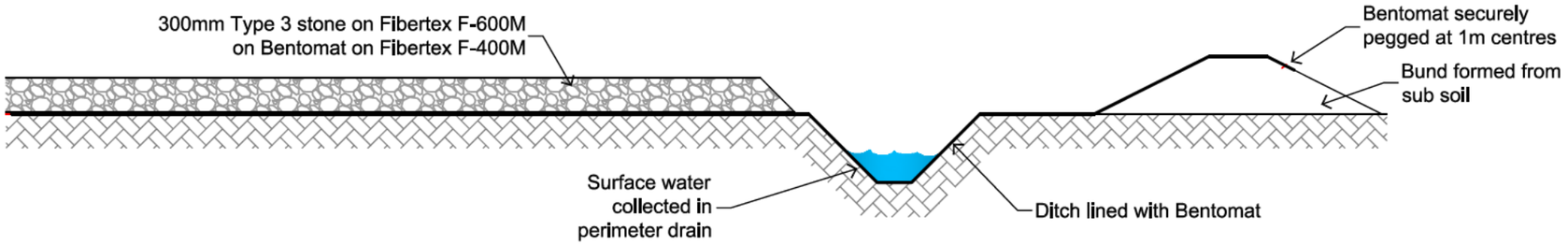
2.6 A variation on the inceptor ditch is to be used where the water tanks bridge across the ditch. In other areas trackway will be used to support the units over an inceptor ditch as described above, but where the water tanks are, the use of concrete troughs will be used to provide ditch stability and prevent the potential for ditch collapse. Approximately 45 metres of ditch will be constructed in this fashion, giving a storage capacity of 20.25m^3. Further temporary capacity increases the volume to 34.65m^3.

2.7 To the south of the site and around part of the east and west sides there will be a buried pipe beneath the site construction. As the site area required to accommodate the HH220 drilling rig and associated structures has increased, so a pipe has been chosen to allow water storage under the site, but still permit vehicle movement over the top at site level. This concrete pipe accounts for 104 metres of the interceptor/perimeter drain and holds 45.76m^3 of fluid.

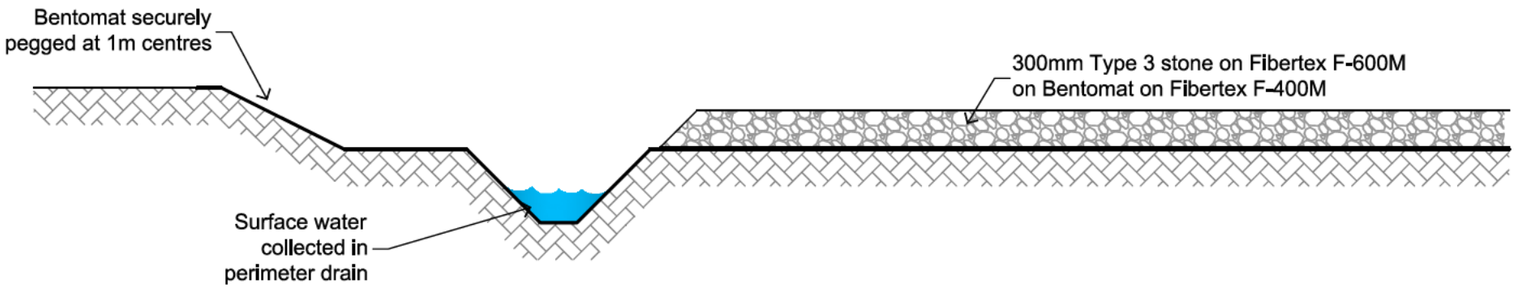
2.8 Where surface water falls onto the drilling site, it will be collected by the perimeter ditch that runs around the site. This water could then be used in drilling-mud and make-up but otherwise, when conditions dictate, it would be collected for disposal at an authorised licensed site.

2.8 The only foul water that will be generated from the proposed development will be that from the site accommodation. The operation of the site requires on-site operatives for whom welfare provisions must be installed. Foul drainage from the cabins would be collected in sealed tanks and emptied by a registered contractor at an approved treatment works.

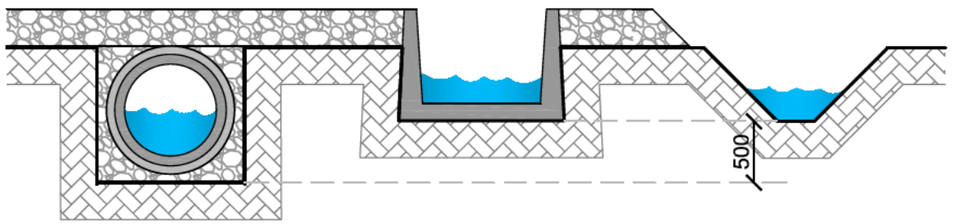
2.9 This information is supplementary to Chapter 6 – Construction Programme of the Environmental Statement.

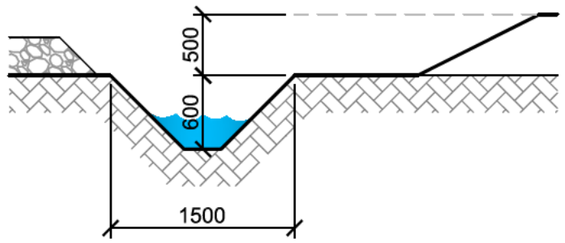


TYPICAL DITCH CONSTRUCTION IN FILL

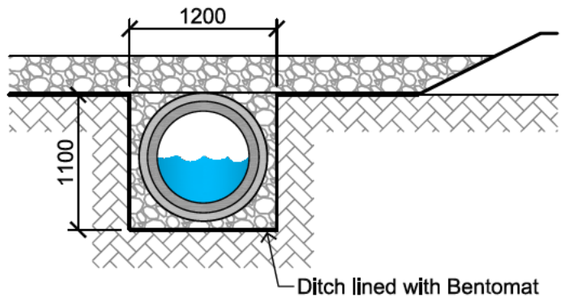


TYPICAL DITCH CONSTRUCTION IN CUT



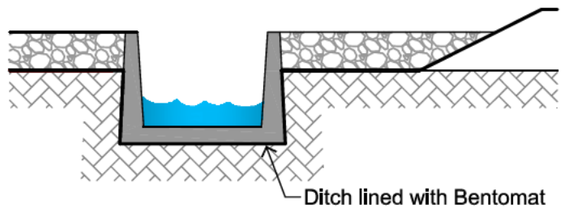


STANDARD 'V' DITCH



750mm ID concrete pipe covered
with 300mm site stone

COVERED PIPE DITCH



1350 x 910mm channel/trough
(e.g. Elite Precast channel 1075)

TROUGH/CHANNEL DITCH

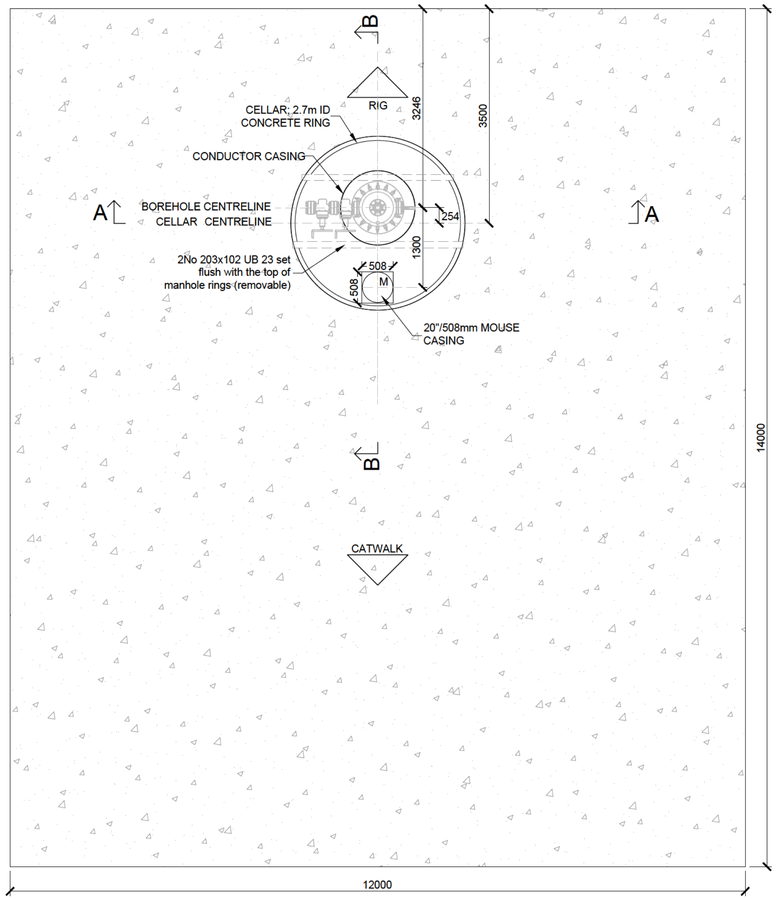
Site Ditch Construction Details

Scale 1:50

0 0.5m 1.0m

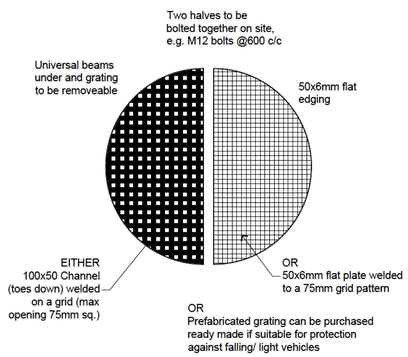
R ELLIOTT ASSOCIATES LTD
CONSULTING STRUCTURAL & CIVIL ENGINEERS
t: (01590) 683176 f: (01590) 683533 Info@rea-ltd.co.uk www.rea-ltd.co.uk
Dennett House
Brighton Road
Sway
Lymington
Hampshire
SO41 6EB

Client: Celtique Energie Petroleum Broadford Bridge West Sussex	Drawn By: AJNE	Date: June 2014	Sheet Size: A3
	Drawing Title: Site Ditch Construction Details (1:50)		
Job Title: Broadford Bridge Site	Drawing Number: 3261/BB/C/10		Revision: A



Cellar Plan

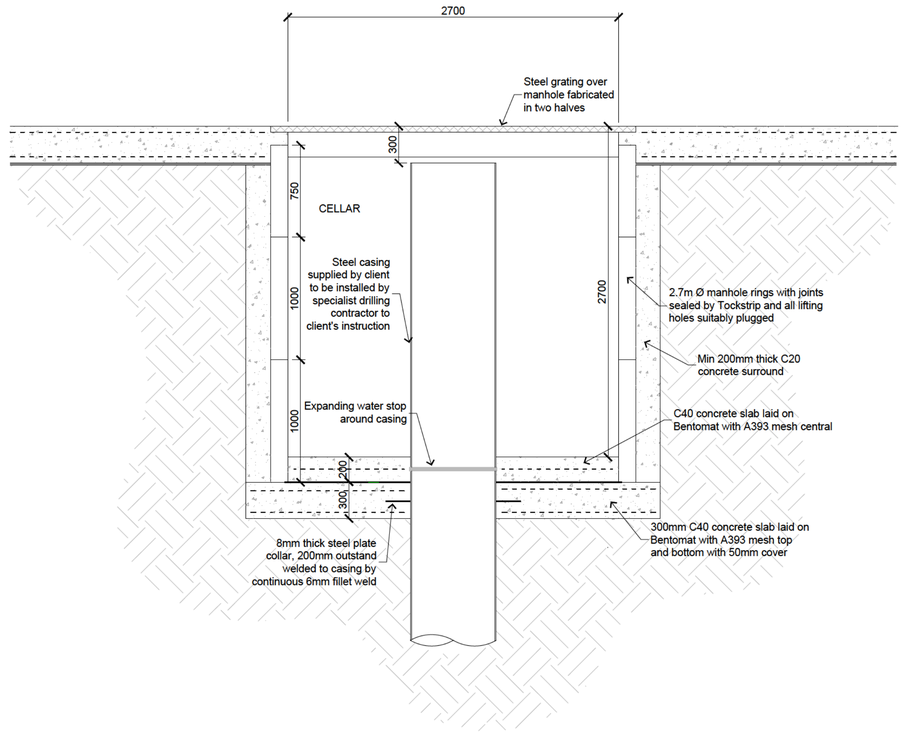
Scale 1:50



CELLAR GRATING DETAIL
Scale 1:50

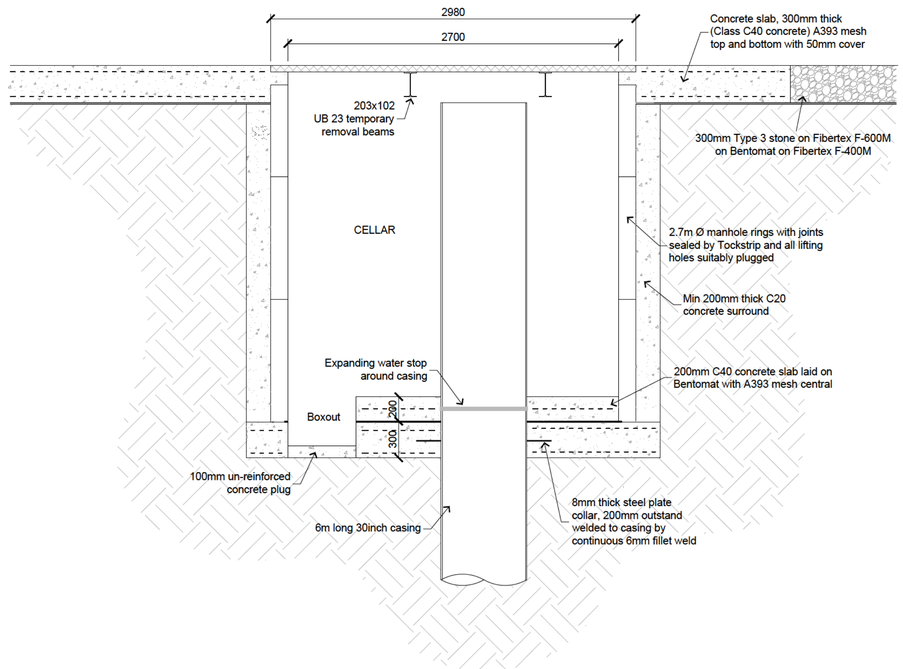
Cellar Grating Detail

Scale 1:50



Section A-A Detail

Scale 1:25

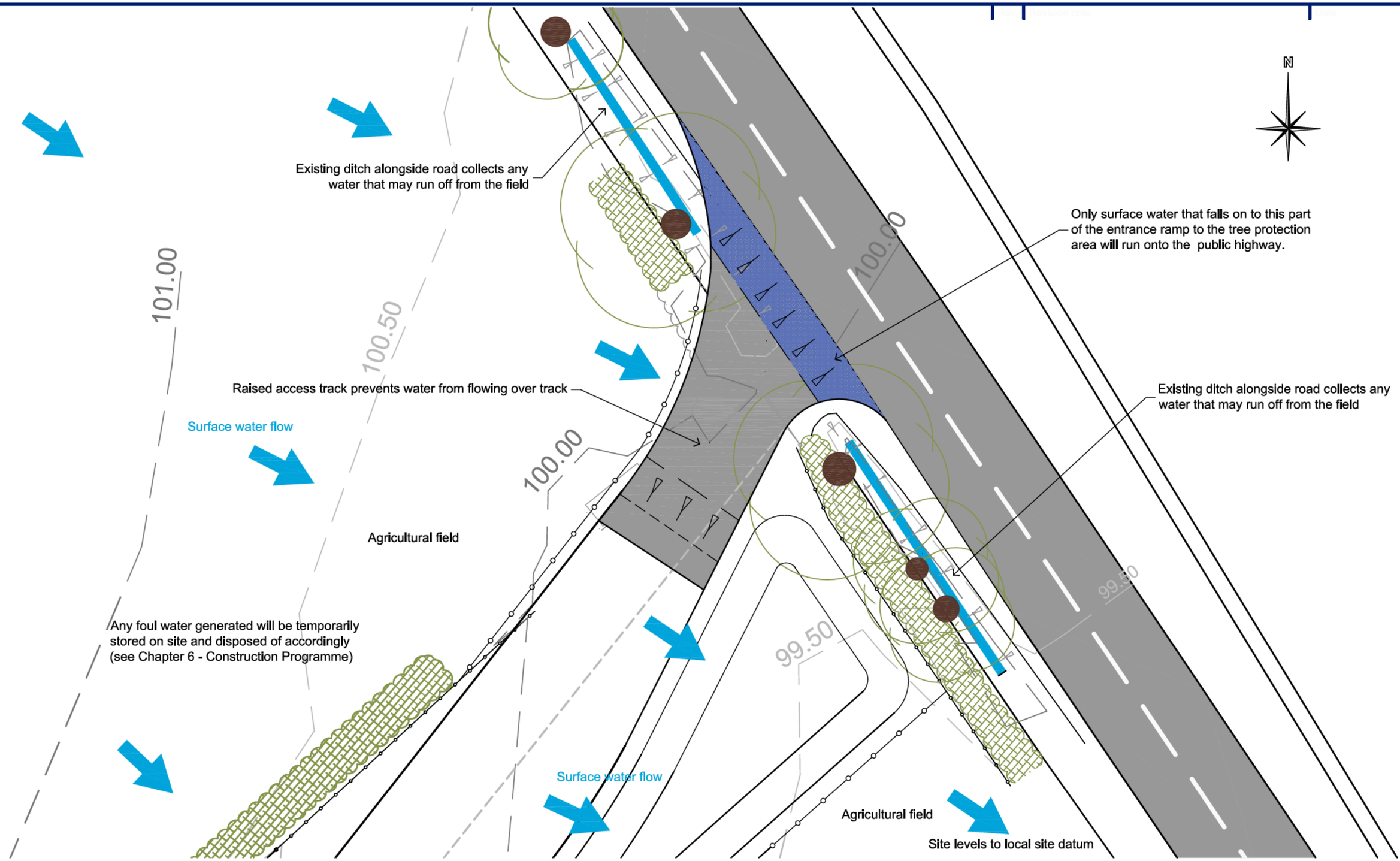


Section B-B Detail

Scale 1:25

R ELLIOTT ASSOCIATES LTD
CONSULTING STRUCTURAL & CIVIL ENGINEERS
t: (01590) 683176 f: (01590) 683533 info@rea-ltd.co.uk www.rea-ltd.co.uk
LIMITED
Dennett House
Brighton Road
Sway
Lymington
Hampshire
SO41 6EB

Client	Celltique Energie Petroleum Broadford Bridge West Sussex
Job Title	Broadford Bridge Site
Drawn By	AJNE
Date	May 2014
Sheet Size	A1
Drawing Title	Cellar Detail (1:25,1:50)
Drawing Number	3261/BB/C/09
Revision	C



Surface Water Distribution at Entrance

Scale 1:200

R Elliott Associates Ltd

CONSULTING STRUCTURAL & CIVIL ENGINEERS

t: (01590) 683176 f: (01590) 683533 info@rea-ltd.co.uk www.rea-ltd.co.uk

Dennett House
Brighton Road
Sway
Lymington
Hampshire
SO41 6EB

Client: Celtique Energie Petroleum Broadford Bridge West Sussex	Drawn By: AJNE	Date: November 2013	Sheet Size: A3
	Drawing Title: Plan of Surface Water Distribution at Site Entrance (1:200)		
Job Title: Broadford Bridge Site	Drawing Number: 3261/BB/20		Revision: A

Guilldbourne House, Chatsworth Road, Worthing BN11 1LD

- Our Website
- Our Flood Risk Standing Advice
- Our Pollution Prevention guidance
- Our Charging scheme for planning advice

West Sussex County Council
Development Control
County Hall Tower Street
Chichester
West Sussex
PO19 1RH

Our ref: HA/2014/115197/02-L01
Your ref: WSCC/052/12/WC

Date: 13 August 2014

Dear Sir/Madam

FURTHER DETAILS FOR CONDITIONS 22 AND 23. THE SITING AND DEVELOPMENT OF A TEMPORARY BOREHOLE, WELL SITE COMPOUND AND ACCESS ROAD INCLUDING ALL ANCILLARY INFRASTRUCTURE AND EQUIPMENT, ON LAND AT WOOD BARN FARM, BROADFORD BRIDGE, FOR THE EXPLORATION, TESTING AND EVALUATION OF HYDROCARBONS IN THE WILLOW PROSPECT.
WOOD BARN FARM, ADVERSANE LANE, BROADFORD BRIDGE, BILLINGSHURST, WEST SUSSEX

Thank you for your consultation on the discharge of these conditions.

Condition 22 - Surface Water and Foul Water

We can recommend the discharge of this condition.

The information submitted is satisfactory. Surface water will be collected within the engineered impermeable perimeter ditch and disposed of at a suitable waste facility.

Condition 23 Construction Method Statement

We can recommend the discharge of this condition.

The site will be constructed as a bunded, sealed site with sufficient containment capacity to prevent potential pollutants from escaping. The details of the design and construction of the impermeable site is satisfactory.

Confirmation of the finalised inspection and sign off need to be submitted to the Environment Agency once completed.

Please contact me if you have any questions on the above comments.

Yours faithfully

Mr Mark Luker
Environment Agency Planning Advisor

Direct dial 01903 703883
Direct e-mail mark.luker@environment-agency.gov.uk

End