Notice of variation with introductory note

Environmental Permitting (England & Wales) Regulations 2016

Enovert South Limited

Tir John Landfill Site
Wern Fawr Road
Off Fabian Way
Swansea

SA7 9XT

Variation application number

EPR/VP3935AT/V004

Permit number

EPR/VP3935AT

Tir John Landfill Site
Permit number EPR/VP3935AT

Introductory note

This introductory note does not form a part of the notice

The following notice gives notice of the variation of an environmental permit.

This variation changes the wording of two improvement conditions and deletes a further improvement condition to better reflect the development of the landfill. It also adds a pre-operational condition relating to cell 17.

The schedules specify the changes made to the original permit.

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

Status log of the permit		
Description	**Date**	**Comments**
Application received TP3935LA/A001 (PAS Ref CP3635PQ)	30/04/04	Application for Non Hazardous Landfill
Permit refused	17/01/05	
Appeal lodged	14/07/05	
Permit Issued TP3935LA	12/10/07	Permit Issued to Swansea City Waste Disposal Limited
Variation Application TP3935LA/V002 (PAS Ref WP3433XR)	25/10/07	
Variation determined	09/11/07	
Variation Application (EPR/TP3935LA/V003	01/11/11	Admin variation to add waste codes
Variation determined	09/01/12	
Application EPR/TP3935LA/V004 (variation and consolidation)	Duly made 22/06/12	Application to vary to change the design of cells 16 and 17, amend leachate heads, update groundwater compliance limits and update the permit to modern conditions.
Variation determined EPR/TP3935LA	02/09/13	Varied and consolidated permit issued in modern condition format.
Transfer Application EPR/LP3635EY/T001	Duly Made 20/10/2013	Transfer application with no change in management.

Status log of the permit		
Description	**Date**	**Comments**
Transfer Determined	28/02/2014	New permit number EPR/LP3635EY
Application EPR/VP3935AT/T001 (full transfer of permit EPR/LP3635EY)	Duly made 26/06/2015	Application to transfer the permit in full to Cory Environmental (Gloucestershire) Ltd and incorporate minor variations regarding pre-settlement issues.
NRW initiated variation (EPR/VP3935AT/V002)	Received 26/06/2015	NRW initiated variation to correct minor errors detected in the previous consolidation.
Transfer determined EPR/VP3935AT	30/092015	Full transfer of permit complete.
NRW initiated variation (EPR/VP3935AT/V002)	30/09/2015	Permit issued to Cory Environmental (Gloucestershire) Limited
Variation application EPR/VP3935AT/V003	Duly Made 04/01/2018	Administrative variation to change the operator's name on the permit.
Variation determined EPR/VP3935AT/V003	20/02/2018	Variation of permit complete.
Variation application EPR/VP3935AT/V004	Duly Made 31/01/2019	Minor technical variation to amend improvement conditions
Variation determined EPR/VP3935AT/V004	26/04/2019	Variation issued

Other Part A installation permits relating to this installation		
Operator	**Permit number**	**Date of issue**
Infinis (Re-Gen) Limited	EPR/BP3738LS	22/12/2006

End of introductory note

Notice of variation

Environmental Permitting (England and Wales) Regulations 2016

The Natural Resources Body for Wales ("Natural Resources Wales") in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2016 varies

permit number
EPR/VP3935AT

issued to
Enovert South Limited ("the operator")

whose registered office is

20 Old Broad Street
London
England
EC2N 1DP

company registration number 02664840

to operate a regulated facility at

Tir John Landfill
Wern Fawr Road
Off Fabian Way
Swansea
SA7 9XT

to the extent set out in the schedules.

The notice shall take effect from 26/04/2019

Signed	Date
A. M. Griffiths	**26/04/2019**

Anna Griffiths, Principal Permitting Officer

Authorised on behalf of Natural Resources Wales

Schedule 1 – conditions to be deleted

None

Schedule 2 – conditions to be amended

The following conditions are amended as a result of the application made by the operator

Table S1.2 Operating techniques

Description	Parts	Date Received
Application	The response to questions 2.1, 2.2, 2.3, 2.4, 2.5, 2.7, 2.8, 2.9, 2.11 and 3.1 in Part B of the Application Form, where relevant as superceded by the Appeal documentation.	30 April 2004
Appeal Documentation	Letter from Jacob Babtie dated 19 April 2006, reference 0007755/SJM/117	19 April 2006
Appeal Documentation	Letter from Jacob Babtie dated 19 April 2006, reference 0007755/SJM/117.	19 April 2006
Improvement Condition submission, (Table 1.3, Ref IC9)	Letter from Jacobs, dated 12th November 2007 (reference:B0775500/PPC1010/001). - Updated monitoring results records.	2nd December 2007
Site Protection Monitoring Plan	Jacobs Report and attachments: Design of Site Protection and Monitoring Programme for Tir John Landfill Site, Swansea City Waste Disposal Company Limited Date: December 2007(Document Reference: B0775500/PPC1011/R01)	11th December 2007
Improvement Condition submission, (Table 1.3, Ref IC5)	Report from Jacobs, Dated February 2008, (Reference B0775500/PPC1005/RevB) – Leachate Management Plan	11th February 2008 (Approved 19/5/08)
Crymlyn Bog SAC protection plan	Jacobs Report: Crymlyn Bog SAC Protection Plan Dated: February 2008, (Document Reference: B0775500/PPC1 013/R01/RevB)	11th February 2008
Pre- Operational Submission (Table S1.4, Ref 1)	Report from Jacobs, Dated 14 November 2008, (Reference B0775500/PPC1002/R01/RevD – Surface Water Management Plan (Rev D)	14th November 2008
Improvement Condition submission, (Table S1.3 Ref IC1)	Report from Jacobs, Dated 14 November 2008, (Reference B0775500/PPC1007/R01/RevC – Perimeter Catch Ditch Management and Monitoring Plan (Rev c)	14th November 2008

Table S1.2 Operating techniques

Description	Parts	Date Received
Ecological Monitoring Plan	Jacobs Report: Ecological Monitoring Plan: Consultation Draft (Rev A) Date: 10th July 2009 (Document Reference: B1160000/0P005/R01/RevA)	17th July 2009
Pre- Operational Submission (Table S1.4, Ref 2)	Letter from Jacobs Table S1.4a Pre-Operational Measure, Reference 2, (Reference B1160000/SJM/61 – Dated 28th August 2009), Including attachments to the letter. Installation of new boreholes	28th August 2009
Assessment of current leachate management infrastructure Cells 5 to 14	Jacobs Report: Tir John Landfill Site Leachate Management and Collection Infrastructure Inspection Report Dated: May 2009	8th May 2009
Pre- Operational Submission (Table S1.4, Ref 3) Relating to Cell 15	Letter from Jacobs – Dated 7th December 2007 (Reference B0775500/SJM/147) – outlining initial proposals to discharge pre-operational condition 3	7th December 2007
	Jacobs Report: CQA Plan for the Preliminary Development Platform for Cell 15 (Reference B0775500/ENG/R04, dated May 2008).	May 2008
	Letter from Jacobs - Dated 8th July 2008 (Reference B0775500/SJM/194).	8th July 2008
	Letter from Jacobs - Dated 23rd July 2008, (Reference B0775500/SJM/197) – settlement proposals for Cell 15.	23rd July 2008
	Letter from Jacobs - Dated 8th August 2008 (Reference B0775500/SJM/202) Cell 15 settlement and undercell groundwater monitoring provisions.	8th August 2008
	Letter from Jacobs - Dated 27th January 2009 (Reference B1160000/SJM/02) Preliminary development platform for Cell 15 - settlement.	27th January 2009 (note: letter was incorrectly dated 2008)
	Email from Jacobs – Dated 10th March 2009 – Settlement update and attachments.	10th March 2009
	Jacobs Report: Cell 15 Earthworks Design Ground Settlement Report – Dated May 2009 (Reference: B1160000/CAP004/01Rev0).	May 2009

Table S1.2 Operating techniques

Description	Parts	Date Received
	Letter from Jacobs - Dated 17th July 2009 (Reference B1160000/CD/RKS/SJM/052) Cells 12 and 14 – Location of Leachate Extraction Wells (based on settlement calculations). Includes Cell 15 Waste Emplacement Plan	17th July 2009
	Email from Jacobs – Dated 12th October 2009 – Decommissioning of settlement monitoring Cell 15 platform.	12th October 2009
Phase 1 Hydrogeological Risk Assessment Report	All	10th July 2011
Phase 1 Hydrogeological Risk Assessment: Addendum Report	All	25th June 2012
Application EPR/TP3435LA/V004	Accident Management Plan, Revision 1, dated March 2012	30th March 2012
	Closure and Aftercare Plan, Revision 0, dated March 2012	30th March 2012
	Working plan document for site Management and Control, Section 4 – Waste Acceptance and Operational Procedures, Revision 3 dated March 2012	30th March 2012
	Permit Management System Manual, Revision 2, dated March 2012	30th March 2012
	Monitoring Management Plan, Revision 1, dated March 2012	30th March 2012
	Nuisance Risk Assessment and Management Plan, Revision 0, dated March 2012	30th March 2012
	Gas Management Plan – Infinis Input, dated 12/12/11	30th March 2012
	Gas Management Plan, Revision 1, dated March 2012	30th March 2012
	Surface Water Management Plan, Revision 0, dated March 2012	30th March 2012
	Conceptual Model, Environmental Setting and Installation Design Report	30th March 2012
	Leachate Management Plan, Revision 0, dated March 2012 (excluding sections: 1.4.1 (iv); 1.5.11 (reference to “recirculation”); 1.8.2 (reference to “recirculation”) & sections 1.5.13 to 1.5.18)	30th March 2012

Table S1.2 Operating techniques

Description	Parts	Date Received
	Stability Risk Assessment Cells 16 and 17, dated March 2012	30th March 2012
	Hydrogeological Risk Assessment for Cells 16 and 17, dated March 2012. Phase 1 Hydrogeological risk Assessment Addendum Report dated June 2012	30th March 2012 25th June 2012
Not duly made response	Jacobs Letter - Reference B1160001/CAP020/SJM/01 dated 30th May 2012	31st May2012
Not duly made response	Jacobs Letter - Reference B1160001/SJM/005 dated 31st May 2012	01st June 2012
Not duly made response	Jacobs Letter - Reference B1160001/SJM/008 dated 22nd June 2012	25th June 2012
Schedule 5 notice	Response to Schedule 5 request for further information, dated November 2012 – all parts	30th November 2012
Schedule 5 notice	Response to Schedule 5 request for further information, dated December 2012 – all parts	28th December 2012
Pre Settlement Waste Profile	Drawing Reference: B1160001/TP3935LA/EPVA/ESID 1B. Rev2. dated 26th March 2013, revised 15th April 2013.	15 April 2013
Permit variation application EPR/VP3935AT/V004	Design and construction of leachate extraction wells, drawing TJD17.	31 January 2019

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
14	Upon completion of the compaction trials the Operator shall forward the information obtained by pre-operational measures 2, 3 and 5.	4 months after completion of the compaction trials unless otherwise agreed in writing with Natural Resources Wales.
15	The Operator shall forward to Natural Resources Wales for written approval, a report to show how, in the event that Cell 16B or Cell 17 is not built or the compaction does not take place, as per variation application EPR/TP3435LA/V004, the management of the historical waste within the footprint of Cells 16B and 17 is to be undertaken. The report shall include the following as a minimum: • Extraction measures; • Landfill gas management; • Leachate management; • Groundwater monitoring; • How the site is to be re-profiled; • Surface water control and management; and • Capping measures; Should Cells 16B or 17 not be built, the Operator shall manage the impacts of the historical wastes within the footprint of Cells16B and Cell 17 as per the agreed proposals to a timeframe to be agreed in writing by Natural Resources Wales. The Operator must implement the report as approved, and from the date stipulated by Natural Resources Wales.	30 November 2019 unless otherwise agreed in writing with Natural Resources Wales.
16	The Operator shall review the leachate management system for cells 5 - 14, the review is to include but not be limited to the following: • Proposals to reduce leachate heads over an 18 month period so as to achieve compliance with those levels specified within Table S3.1; • Proposals to install additional leachate extraction and monitoring wells to ensure a minimum of 1 extraction and 2 monitoring wells per cell. The Operator shall undertake the proposals outlined in the leachate management system review and complete the installation of the monitoring and extraction wells within 6 months of written approval of proposals.	3 months from variation issue unless otherwise agreed in writing with Natural Resources Wales.

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
17	The Operator shall forward for written approval, an addendum to the landfill gas management plan for the phase 2 landfill, to include the installation of perimeter gas monitoring boreholes. The addendum shall include but not be limited to: • Assessment of the suitability of current boreholes to monitor potential gas migration; • Proposed timeframes and plan of works for the installation of any additional perimeter gas boreholes; • Proposed spacing of any additional perimeter gas boreholes to be installed; • Monitoring schedules and suites for landfill gas monitoring; and • Control limits for perimeter gas boreholes, once approved these control limits are to form part of the operational techniques employed at the site as part of the gas management plan Upon approval of the addendum, the Operator shall install and begin monitoring of the perimeter gas boreholes as per the agreed addendum. The operator shall forward to Natural Resources Wales for written approval an update to the site Monitoring Management Plan which shall include proposed control levels for the Methane and Carbon Dioxide at the perimeter monitoring points identified in Table S3.3. The updated plan shall include an action plan detailing the steps to be taken in the event of a control level exceedance.	3 months from variation issue unless otherwise agreed in writing with Natural Resources Wales.
18	The operator shall undertake a review of the effectiveness of the Cell 16 and 17 Perimeter Gas Collection System. The review shall examine in particular the effectiveness of each individual well's ongoing ability to collect gas. Any proposed improvements shall be identified and shall be in accordance with the Industry Code of Practice for "the management of landfill gas" and submitted to Natural Resources Wales for approval. On approval any improvements identified shall be implemented by a timescale agreed with Natural Resources Wales.	2 years from the installation of the Perimeter Gas Collection system along the Eastern boundary of the site unless otherwise agreed in writing with Natural Resources Wales.

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
19A	As part of the CQA submission for Cell 16 (as required by condition 2.6 of the permit) the operator shall include an addendum providing the details for the construction of: 1. a leachate collection drain along the Eastern flank of Cells 8 to 9, and; 2. a minimum of two leachate extraction wells along the Eastern flank of Cells 8 to 9 (as shown on diagram reference TJD17 *("Proposed location of leachate extraction points LEW8A and LEW9" dated 23rd January 2019) as LEW8a and LEW9).* On approval of the CQA plan for Cell 16, the installation of the new leachate extraction wells, including the improved drainage collection system will be built as part of the Cell 16 construction programme.	31 April 2019

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
20	The operator shall provide an updated addendum to the Gas Management Plan to provide assessment parameters and a contingency action plan for in-waste gas monitoring. As a minimum assessment parameters shall be provided for the following: • Methane [%], • Nitrogen [%], • Oxygen [%], • Hydrogen [ppm], • Hydrogen Sulphide [ppm], • Carbon Monoxide [ppm], • Balance Gas [%], • Ratio Methane : Carbon Monoxide • Ratio Nitrogen : Oxygen • Differential Pressure [millibar] • Atmospheric Pressure [millibar] • Initial assessment of the condition of each abstraction well (for example air leak detected). • Valve position on arrival [% open] • Valve position on departure [% open] The notification requirements of condition 2.4.2 will be deemed to have been complied with on submission of the plan.	3 months from completion of the trial unless otherwise agreed in writing.

Table S1.4 Pre-operational measures	
Reference	**Pre-operational Measures**
1	Prior to undertaking the compaction trial, the Operator shall submit to Natural Resources Wales for written approval a compaction trial design report that shall include: • the proposed location of the compaction trial, demonstrating that it is at an appropriate distance from potentially sensitive locations and thus mitigating any potential impacts of the trial; • confirmation of trial area size and shape, which will be designed to sample an appropriate range of ground conditions in the historic wastes; • identification and design of temporary pollution control systems to intercept leachate and/or gas generated from the trial and prevent impact outside the site boundary; • identification of instrumentation proposed, to capture data from the trial during and immediately following compaction operations; • confirmation of monitoring provisions for gas, groundwater and leachate in the area surrounding the trial; • management controls to mitigate any impacts from noise, vibration, dust or odours; • a review of the trial proposals against the original habitats assessment made as part of the permit variation application EPR/TP3935LA/V004.
2	Post compaction trial and prior to compaction taking place, the Operator shall review the suitability of the compaction method used in the trial as a method for managing the impacts of the historic waste deposited within the footprint of cells 16 and 17. The revision shall be undertaken using the information obtained during the compaction trial and shall include as a minimum: • review of the compaction method used in the trial as a suitable mechanism to achieve a stable platform on which to develop cells 16 and 17; • review of the safeguards to be put in place, including a revision of the proposed buffer zones to ensure that compaction will not cause instability within the existing landfill mass; • a review of the suitability of the proposed pollution prevention techniques to be employed in the compaction works and finalise final design proposals for these measures. • updates to any relevant supporting risk assessments pertaining to the compaction work. The revision shall be forwarded to Natural Resources Wales for written approval. Following this the Operator shall implement any measures to agreed timescales.

Table S1.4 Pre-operational measures	
Reference	**Pre-operational Measures**
3	Post compaction trial and prior to the compaction work taking place the Operator shall submit to Natural Resources Wales for written approval the following: • detailed written design proposals for the installation of a Perimeter Collection System (PCS) cut-off barrier along the Eastern boundary of cells 16 and 17, to a depth and length to be agreed in writing by Natural Resources Wales which ensures that migration of contaminants into the Crymlyn Bog will be minimised during the compaction works of the historic wastes and subsequent landfilling of cells 16 and 17; • detailed written design proposals for the installation of ground water monitoring boreholes along the Perimeter Collection System (PCS) cut-off barrier, the spacing and number and placement of which of which are to be agreed in writing with Natural Resources Wales but at a minimum there is to be three groundwater monitoring boreholes inside the cut-off wall and three groundwater monitoring boreholes placed outside of the cut-off wall to ensure that any migration of contaminants is detected; • detailed proposals in writing for the installation of a Internal Platform Drainage System (IPDS) in the area of Cells 16 and 17 (and unless otherwise agreed) shall consist of at least three trenches of 5 m depth and shall link to a trench which is to be installed around the outside of the compaction area. The trench system shall be designed to collect any leachate squeezed out of the ground during the compaction works. The spacing of the trenches shall be confirmed to us in writing; • detailed written design proposals for the installation of a Perimeter Gas Collection System to collect and monitor gas from the historic wastes beneath cells 16 and 17.
4	Post compaction trial and prior to compaction taking place; the Operator shall undertake a gas pumping trial in order to determine the volume and composition of gas generated during the compaction trials. The trial shall be undertaken in accordance with Environment Agency Operational Instruction “566_08 - Using pumping trials to determine whether a landfill site needs a flaring system” or as otherwise agreed in writing with Natural Resources Wales. On completion of the gas pumping trial the results shall be assessed and proposals for the effective collection and treatment of landfill gas submitted to Natural Resources Wales for approval.
5	Post compaction trial and prior to compaction works taking place, the Operator shall undertake analysis of the leachate generated during the compaction trials and shall forward a report including but not limited to the following; • proposed monitoring locations, parameters and frequencies of monitoring for inclusion in table S3.10 to monitor leachate generated during the compaction works; • proposed compliance limits for groundwater boreholes which are installed under pre-operational condition 3. The proposed monitoring locations, parameters, frequencies and compliance limits shall be forwarded to Natural Resources Wales for written approval. Upon approval, these proposals shall be incorporated into the site’s monitoring and operating schedules.
6	Post compaction trial and prior to the commencement of compaction the operator shall install an additional In-bog water monitoring transect along the Eastern boundary of the landfill site at a location to be agreed with Natural Resources Wales. Once installed, the transect shall be monitored in accordance with the monitoring requirements set out in Table S3.13 of this permit and the Ecological Monitoring Plan: Consultation Draft (Rev A) dated 10 July 2009 should be updated to include the revised locations of the monitoring transects and monitoring procedures.

Table S1.4 Pre-operational measures	
Reference	**Pre-operational Measures**
7	Prior to the deposit of waste in cells 16 and 17, the Operator shall review and where necessary update the Waste Phasing Plan for each respective cell. The Waste Phasing Plan shall ensure that waste placement will be undertaken in a manner that will ensure that the basal gradients in each cell are maintained throughout the lifetime of the cells. Upon submission of the updated Waste Phasing Placement Plan, the document shall be incorporated into the Operating Techniques and Management for the site.
8	Prior to compaction, the Operator shall submit written proposals and procedures for managing noise and vibration. Incorporating a realistic timetable for implementation and ongoing review. There shall be a final completion date whereby this procedure shall have been assessed, evaluated and concluded. The proposals and procedures shall assess the likelihood of adverse environmental impact associated with noise and vibration linked to a proposal to adopt dynamic ground compaction as a means to achieve underlying waste deposit stabilisation via a reengineered load bearing structure. The proposals and procedures will assess the potential environmental impact upon the following nearest sensitive receptors - • Habitats; • Occupied residential dwellings; • Utilities and service structures; • Waste management infrastructure - extant and proposed; • Landfill gas management abstraction management and monitoring; • Leachate management abstraction, management and monitoring; • Groundwater and surface water abstraction, management and monitoring; • Waste mass stability including compromised flank, face and capped structures. Monitoring data shall be obtained through a combination of field investigation trial work and literature survey. These proposals and procedures shall incorporate (although not necessarily confined to) the advice contained within the following documents – **BRITISH STANDARDS** **BS4142:1997** Method for rating industrial noise affecting mixed residential and industrial areas. ISBN 0580 28300 3 **BS6472-1:2008** Guide to the evaluation of human exposure to vibration in buildings (1Hz – 80 Hz). ISBN 978 0580 53027 2 **CIRIA REPORT C572** London 2002 Treated ground engineering properties and performance. J A Charles and K S Watts. ISBN 0 86017 572 3. If it is concluded that dynamic ground compaction ceases to be a viable engineered solution to waste stabilisation, alternative remediation strategies and operational procedures shall be assessed, evaluated and reported upon.
9	No operations authorised by this permit shall take place in cell 17 until Natural Resources Wales has agreed in writing that the following have been constructed to the appropriate standard: • a leachate collection drain along the Eastern flank of Cells 6 to 8, and; • a minimum of two leachate extraction wells along the Eastern flank of Cells 6 to 7 (as shown on diagram reference B1160001/TP3935LA/EPV/ESID7 as LEW6A and LEW7A).

Schedule 3 – conditions to be added

None