



**The Environmental Permitting (England and Wales)
Regulations 2010**

**WASTE MINIMISATION & WATER USAGE REPORT
FOR CONVATEC LIMITED – UNIT 1**

**PPC Permit number NP3433BC,
Variation PP3433LP,
Variation Notice number EA/EPR/NP3433BC/V003, &
Variation Notice number EPR/NP3433BC/V004,
Variation Notice Number EPR/NP3433BC/V005**

**Issue 5
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SUMMARY

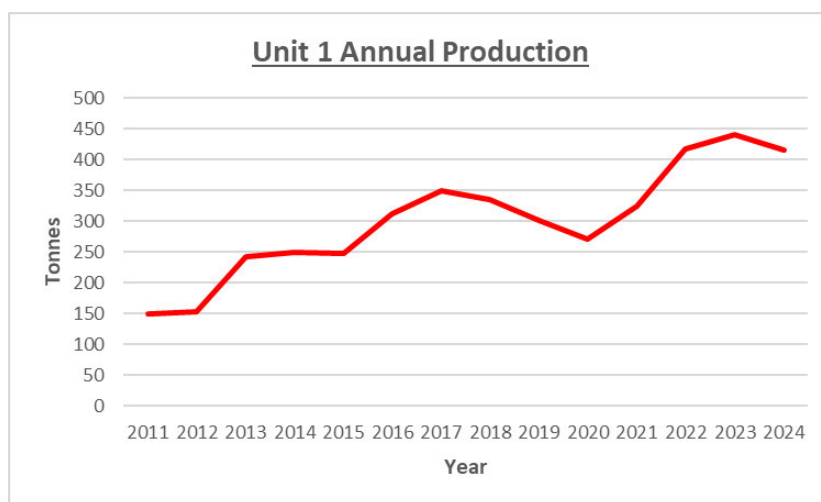
PPC Permit NP3433BC, Condition 2.4.1.2 requires ConvaTec to “carry out periodic waste minimisation audits and water use efficiency audits. If such an audit has not been carried out in the 2 years prior to the issue of this Permit, then the first such audit shall take place within 2 years of its issue. The methodology used and an action plan for increasing the efficiency of the use of raw materials or water shall be submitted to the Agency within 2 months of completion of each such audit and a review of the audit and a description of progress made against the action plan shall be submitted to the Agency at least every 4 years thereafter”.

Since the last report (August 2021):

- The regenerative thermal oxidiser commissioned in 2018 has continued to provide a high degree of abatement of VOC emissions from unit 1 processes.
- Unit 3 has been purchased along with a new textile line which is to be housed in the new unit, this should result in greatly reduced production waste. Additionally, an overall natural gas reduction is anticipated, due to unit 3 processes & buildings using heat pump and electric water heating for steam and humidification, as per our carbon reduction plans.
- Production has followed demand with an upward trend since 2020, when compared to earlier years. Demand for 2025 is estimated to be around 2023 levels @ 440 tonnes.
- Waste produced has been in line with production requirements. Landfilled waste has been on a downward trajectory, with a minor uptick in 2024 associated with asbestos removal in unit 3.
- Employee numbers have increased slightly from 105 in 2020 to 117 in 2024, site continues to operate 24/7 with reduced production over the weekend and a continuous security presence on site.
- Water consumption has been broadly flat since 2020. This is pleasing given production has mostly been increasing year on year. Additionally, the site bypassed the unit 1 towns water tank, replaced by an RPZ valve in 2022, fitted by a Welsh Water approved contractor, with the aim of reducing water waste.
- A new digital Management of Change (MOC) system has been implemented, ensuring environmental risks are considered during planning stages of any changes.
- The site upgraded the three envirovalve's in 2023 and the penstock associated with the RTO has been maintained as per design requirements.

1.0 INTRODUCTION

Unit 1 has been fully operational since January 2006. The Unit chemically treats a cellulose based fibre for the pharmaceutical wound dressing industry. Graph 1 shows the growth in production through early years, including the completion of our first Hydrocel production suite in the Annex between 2012 and 2013. Since 2020 Unit 1 production has increased steadily year on year apart from 2024. Production for 2025 is anticipated to be back around the levels seen in 2023 at circa 440 tonnes.



Graph 1 – Unit 1 Annual Production Comparison

2.0 RAW MATERIALS ANNUAL USAGE

2.1 PRODUCTION (based on 2024 figures)

Table 1

Material	Tonnes
Industrial Denatured Alcohol (IDA)	3700
Acetic Acid	193
Citric Acid	65
Silver Nitrate	46
Sodium Hydroxide	285
Sodium Monochloroacetate (SMCA powder)	138
Tween	10
Tow (cellulose)	168

2.1.1 Industrial Denatured Alcohol (IDA)

IDA continues to be re-distilled from IDA / Water waste to 96% IDA and then re-supplied to the site as part of a Toll Recovery scheme through Tradebe (was SRM) based in Rye, England. The site stores IDA in three bulk storage tanks each with a capacity for 30,000 liters. The third IDA bulk storage tank was added to the site in April 2017.

3.0 WASTE

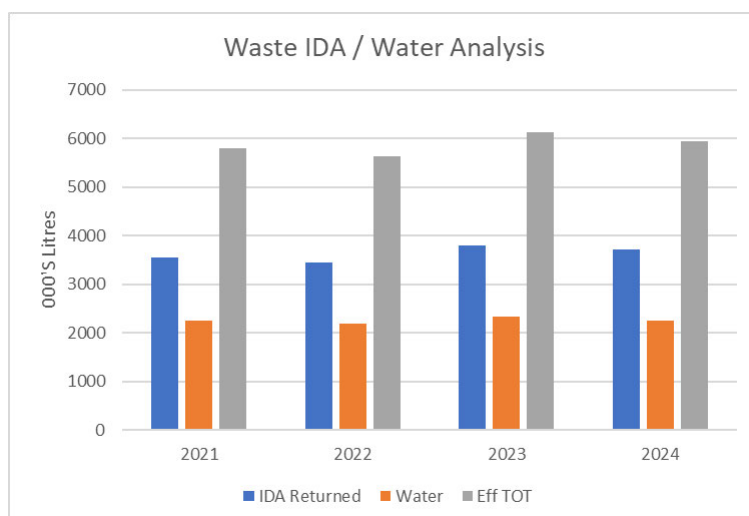
The site will be seeking zero waste to landfill certification in 2025 as per the Intertek standard.

3.1 IDA

Industrial Denatured Alcohol (formerly IMS – Industrial Methylated Spirits) is a hazardous waste due to both its quantity stored at site and its nature. Convatec originally had HMR&C Authorisation to receive 3.5 million litres of 99% IDA for production which is classified as Highly Flammable, the site had certification to distribute the waste for recycling. This authorisation was replaced with one for 3.5 million litres of Duty Free Spirits following the introduction of Toll Recovery, (see 3.1.1).

All processed IDA is collected in one of three 30,000 litre waste tanks and tankered off site. The third waste IDA tank was installed in April 2017. Up until October 2011 all the IDA/water waste was sent to SRM for recovery for re-use as a screen wash product, (see 2.1.1).

Graph 2 below shows the composition of water and IDA tankered off-site to Tradebe for recovery and reuse. As you can see, on average by volume 62% of the waste stream is IDA.



Graph 2 – Waste IDA / water analysis by volume

3.1.1 Toll Recovery

In 2011 we embarked on a scheme of “Toll Recovery” with SRM (now Tradebe) who re-distill the waste stream to 96% IDA which the site has approved for production. This allows a single tanker to deliver the IDA to site and remove the waste IDA/water in the same tanker. These both reduce transport costs and carbon footprint. The site is considering a project to undertake distillation of IDA at site; however, this is on hold until 2027 to enable other projects to take precedence.

3.2 SMCA BAGS

Sodium Monochloroacetate powder is used as part of the process. It is delivered in 25 kg plastic bags which form a hazardous waste stream when empty. All SMCA contaminated items, i.e. bags, coveralls, masks, gloves, etc are disposed of as hazardous waste. All such items are segregated and were collected in steel drums for disposal by Egan Waste. In 2014 Chemcycle took over the management of waste disposal and introduced IBC's for collection of the waste bags. This has improved the handling and reduced cost of removal.

The previous capacity increase building project included a different method of transporting the SMCA internally. A sealed system was trialed, incorporating plastic containers and sealed split butterfly valves which remove any possible exposure to SMCA in handling. This also removed the need for bagging of process SMCA. Unfortunately, this process proved unsustainable in the long term as it created processing difficulties. This required the move back to bagging of process SMCA and the tonnage remaining unchanged.

During 2021 a new dispensing and handling method was introduced which removed the need for the bagging of SMCA ready for production. Since 2021 this has been successful resulting in a significant reduction in this hazardous waste stream. The site has undergone a feasibility study project to assess whether bulk SMCA could remove the waste stream all together, however, given current financial and space constraint, this project is not yet deemed feasible.

3.3 GENERAL WASTE

It is presently difficult to determine the amount of specific general waste being generated from Unit 1 due to having a single waste management system covering both permitted installations. Graph 4 overleaf shows the annual landfill waste derived from the site.



Graph 4 – Site Landfill Waste

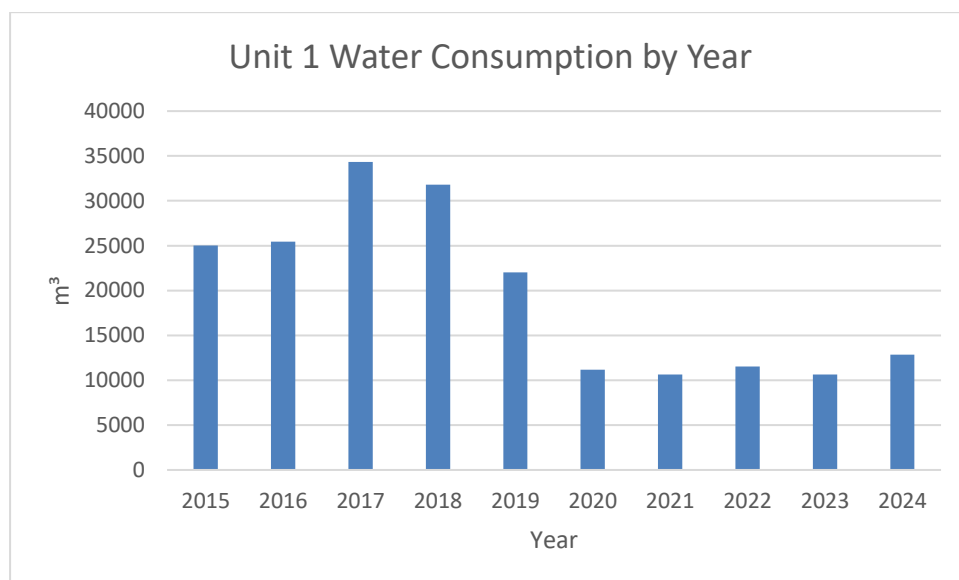
At the end of 2017 the site moved to Energy from Waste for its general waste stream. This dramatically reduced the amount of waste landfilled, since then only a small quantity of hazardous waste has ended up in special landfill. Before this change, and through the previous report the site averaged 50 tonnes of waste to landfill annually. As you can see from Graph 4, the amount of landfill waste since the last report has dramatically reduced. The increased level in 2022 was following the cleanout of the effluent tanks which identified a build up of effluent salts within the tanks. This was removed by a specialist hazardous waste contractor and disposed of. A significant proportion of the tank salts were derived from and contained neutralised liquid, which was dewatered, however it was not possible to ascertain how much filter cake was landfilled, therefore site recorded the total tonnage as the same. The minor increase in 2024 was due to the removal and disposal of asbestos from unit 3.

MSS now provide three skips and four large bins, one skip for general waste (EfW), one skip for cardboard, and one skip for WEEE. The large bins include one for food waste, one for glass and two for plastic, tins and tetra. Since the advent of the new waste separation requirements, it is anticipated that general waste (EFW) will marginally decrease, and total recycled waste will increase. General waste is predominantly made up of production waste, which is anticipated to decrease more significantly when Textile Line 6 comes online and replaces Textile Line 3. At present there is no alternate outlet for the production waste given its flammability and gelling properties when wet.

4.0 WATER USAGE

Unit 1's annual water consumption can be seen in the Graph 5 overleaf. As seen in Section 1.0, production has increased since 2020 and water consumption has remained broadly flat

year on year. This is thanks to a previous project to place chilled water on a loop for process cooling as opposed to single pass cooling. The site also by-passed the unit 1 towns water storage tank and fitted an industry and competent body approved RPZ valve. This was to improve legionella risk but resulted in the removal of water dumping from the tank when the temperature posed a risk. The RPZ valve undergoes routine maintenance and inspection by the competent authority (Welsh Water).



Graph 5 – Unit 1 Annual Water Consumption

Main uses of water in Unit 1 are as follows:-

USE	DRIVER	DISPOSAL
Domestic	No of personnel / production dependant	Sewer
Office Heating	Weather Dependant	N/A
Boiler Make-up	Weather & product Dependant	Sewer
Process washes	Pipework contamination	Tanker
EP Water System	Product Dependant	Tanker / Sewer
Emergency showers/eyewash stations	Safety Dependant & monthly testing	Sewer/Haz Waste

5.0 IMPROVEMENT PLAN REVIEW

WASTE MINIMISATION

ITEM	ISSUE	ACTION	RESP	TARGET DATE
1a	Unit 1 & 2 general waste reduction	Introduce Dry Mixed Recycling skips	■■■ ■■■	Complete
1b		Evaluate all waste streams and assess opportunities to reduce waste at source	■■■ ■■■	Complete
1c		Investigate "Zero to landfill" waste target using waste to energy facility in Cardiff	■■■ ■■■	Complete
2	Recycle wooden pallets	Investigate local company to recycle pallets. Edwards & Ross selected.	■■■	Complete
3a	SMCA waste bags	Investigate opportunities for reducing Hazardous waste in relation to SMCA, i.e. introduce reusable containers in new Annex.	■■■	Complete (Failed)
3b		Introduce IBC's for collecting & disposing of SMCA bags	■■■ ■■■	Complete
4	Reduce water usage	Replace Bioscrubber plant with RTO, removing the wet process waste stream & reducing water.	■■■	Complete
5	Review Water & Waste usage	Monitor & review water usage and waste quantities generated following completion of the Silver scale-up & Hydrocel suite 4 projects with the aim of minimisation	■■■	Complete
6	SMCA Handling	Complete updated SMCA handling project to reduce SMCA contaminated waste.	■■■	Complete
7	Bulk hazardous liquid waste reduction	Install heat exchanger cooling loop for citric acid distribution loop in unit and annex processes, to significantly reduce the amount of bulk liquid waste generated annually from citric cleans.	■■■	Complete Q1 2021
8	Reduce water consumption	Connect unit 1 insitu driers to the chilled water loop.	■■■	Complete Q3 2019
9	Zero Waste to Landfill	Achieve zero waste to landfill certification.	■■■	Q4 2025
10	Evaluate General Waste	Assess general waste quantities and make up following set up of TL6 and decommissioning of TL3.	■■■	Q4 2026
11	Effluent Recovery	Undertake effluent recovery project (in line with permit requirements and HSE approvals etc) .	■■■	Q4 2027