

# HEXA-COVER<sup>®</sup>

# SELECTED REFERENCES WATER & INDUSTRY

**PROVEN TECHNOLOGY SINCE 2004** 

MANUFACTURED IN EU, NORTH AMERICA AND AUSTRALIA

Certified for use with potable water according (AS/NZS 4020:2018)

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#### Australia

Bairnsdale, VIC Bemm River, VIC: 2.000 m<sup>2</sup> raw water Brisbane, QLD: 1.100 m<sup>2</sup> water reservoir Brisbane QLD Gayndah, QLD Lake Clarendon, QLD: 1.600 m<sup>2</sup> irrigation water Laverton, VIC Laura, QLD Omeo, VIC: 4.300 m<sup>2</sup> raw water Townsville, QLD Yeppon, QLD: Water Storage Facility



3998 Omeo, VIC - 4.300 m<sup>2</sup> raw water pond

Hexa-Cover® is installed for bird deterrent and for controlling growth of algae and evaporation

Water Corporation Western Australia, 6000 Perth  $2.000 \text{ m}^2$  Waste Water reservoir

"Water Corporation (WA) installed Hexa-Cover<sup>®</sup> in a wastewater treatment pond in Leonora, Gold field Region.

We are happy to say, the installation went very smoothly. To date the effluent quality supplied to the recycled water scheme is much improved. We also see increase in quantity of water"

Leanne Brown, Analyst – Water Quality Risk









#### Better Water and More of It

Jaymie Dawes at Omeo WTP Raw Water Storage Reservoir

The Omeo WTP raw water storage reservoir draws water from Butchers Creek which has had issues with algae growth in the past. Algae would be carried from the river into the lined reservoir above the plant. The algae make the water more difficult to treat to potable water standards.

Unwanted nutrients from ducks and wildlife accessing the reservoir also compounded the algae problem. As a result, the reservoir required regular emptying and cleaning, to mitigate the effects of algae on water quality and treatment.

Aiming to reduce reservoir maintenance and the intensity of treatment required, a thorough assessment of available reservoir covers was performed. Critical factors included capital cost, maintenance cost, and effectiveness in reducing UV penetration (thereby limiting growth of algae). In this case significant evaporation reduction was seen as an added benefit rather than a critical factor.

Hexa-Cover® R114 tiles were determined as the preferred technology and were used to cover the raw water reservoir at Omeo WTP. Installation was achieved by pouring shipping containers of the tiles into the reservoir.

East Gippsland Water's Coordinator Environmental Services, Jaymie Dawes says the results of installing Hexa-Covers at Omeo have been positive.

"We installed 108,000 Hexa- Cover discs in June 2017, and since have seen a notable reduction in algae growth and E.coli in our raw water storage, which makes the water much easier to treat. We are now well into the third summer since installation and the reservoir has not needed to be emptied or cleaned." The hexagonal tiles float freely on the water surface and arrange themselves in a grid that self- compensates for different reservoir shapes and varying water levels. The small size of the tile is an effective deterrent to waterfowl.

Up to 99% coverage of the surface area can be achieved, resulting in reduced evaporation, reduced contamination (from multiple sources) and improved water quality.

Even in situations where there are exposed surface areas as the tiles blow in the wind, water quality improvements appear unaffected.





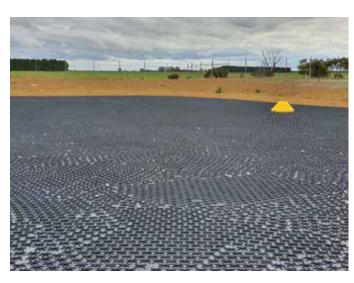
#### **BETTER WATER AND MORE OF IT!**

Hexa-Cover® at Omeo WTP (Raw Water Storage Reservoir) – The Results Are In!

In June 2017 East Gippsland Water installed Hexa-Cover® modular covers on the raw water reservoir at Omeo water treatment plant, with the aim of controlling algae which was sometimes carried in from the water source.

This was achieved with great success, making the water easier to treat and eliminating the regular emptying and cleaning of the reservoir which was previously required. More details of the installation can be found in the February 2020 edition of Operator.

To quantify the effect of the Hexa-Cover®, thorough testing of water from the reservoir continued and was compared with results from the 2 years prior to installation.



The effects are described and quantified by East Gippsland Water as follows:

Measured Parameter Effect:

Total Biovolume	95% Reduction
Potentially Toxic Biovolume 98% Reduction	
E. coli	89% Reduction
Coliforms	Dramatic Reduction
Turbidity	57% Reduction
рН	Less variation
Water Temperature	Negligible Effect

The hexagonal tiles float freely on the water surface and arrange themselves in a grid that self- compensates for different reservoir shapes and varying water levels.

The small size of the tile is an effective deterrent to waterfowl (leading to reduction of E. coli). Up to 99% coverage of the surface area can be achieved, resulting in reduced evaporation, reduced contamination (from multiple sources), improved water quality and reduced operational & maintenance costs.



#### Belgium

B-3300: Sugar manufacturing - 2 x industrial wastewater basins  $5.000 \text{ m}^2 + 5.700 \text{ m}^2$ 

B-3511: Water storage tank B-8600: Industrial wastewater B-8700: Industrial wastewater B-8755: Industrial wastewater B-8800: Water storage tank B-8820: Water storage tank B-8830: Water tank, irrigation B-9070: Water storage tank B-9831: Rainwater tank B-9850: Water storage tank

#### Brazil

Holambra, SP: 3.500 m2 water reservoir (irrigation) Rio Grande du Sul: Wastewater (petrochemical) Sao Paulo: Industrial wastewater

#### Canada

Cremona, AB Markham, ON Macoah, BC: 1.000 m<sup>2</sup> wastewater / WWTP Millbrook, ON Saskatoon, City of, SK Salluit, QC: Gasoline tank Toronto, ON: 4.000 m<sup>2</sup> effluent lagoon Truro, NS: Process water (dairy)

City of Nakusp, BC - 4.000 m<sup>2</sup> WWTP reservoir



*"Familiar with the Hexa-Cover® Floating Cover, I felt the product could nicely cover the lagoon, controlling the algae growth as the sunlight would not be able to penetrate into the water. Additionally, the Hexa-Cover® Floating Cover would enable the aeration process and fluctuating water levels to continue"* 

Mike Pedersen, Director of Operations

### Chile

Antofagasta: Total of 26.000 m<sup>2</sup> water storage BioBio: 2.500 m<sup>2</sup> wastewater facility ConCon: 2.700 m<sup>2</sup> wastewater facility Iquique: Total of 36.000 m<sup>2</sup> water storage ponds Iquique: 3.000 m<sup>2</sup> water storage facility Lomas Bayas: 6.400 m<sup>2</sup> tailings ponds Lomas Bayas: 15.000 m<sup>2</sup> tailings ponds Santiago: Industrial wastewater (refinery) Santiago: 2.400 m<sup>2</sup> Industrial wastewater Tarapacá, Chile: 5.000 m<sup>2</sup> ILS, PLS Tarapacá, Chile: 2.400 m<sup>2</sup> water storage facility





#### China

Beijing: 1.000 m<sup>2</sup> contaminated wastewater (petro-chemical industry)

Beijing: Industrial wastewater (brewery) Guangxi province: Wastewater (chemicals) Hebei: Industrial wastewater Shandong Province: Industrial wastewater Shanghai: Industrial wastewater (dairy) Tianjin: Industrial wastewater Tianjin: 1.000 m2 Ind. wastewater (chlor-alkali) Tianjin1 3.300 m<sup>2</sup> wastewater (petrochemical)

Croatia HR-31000: Industrial wastewater

### **Czech Republic**

CZ-471 29: Industrial wastewater (Food & Bev)

#### Denmark

### Holbæk Spildevand A/S

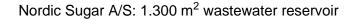
"We have Thermophilic digested biological sludge, digested at 55 degrees. This is done in the digester, from which the sludge is fed to a open storage tank. Subsequently the sludge is dewatered, and the water from the dewatering is led to an "Anita  $Mox^{\ensuremath{\mathbb{R}}}$  process.

This process should preferably stay above 18° degrees, so it is important that the temperature does not drop too low in the storage tank.

To avoid this, we have installed Hexa-Cover<sup>®</sup> and by doing this we have reduced the heat loss in the storage tank.

The temperature of the Anita  $Mox^{\&}$  process is raised from 17.2° C to 19.7° C (measured from January to February 2013), despite temperatures down to -15° C°

Henrik Thygesen, Coordinator - Operations



"We chose Hexa-Cover<sup>®</sup> for covering our pool for several reasons.

First of all the Hexa-Cover<sup>®</sup> ensure an effective reduction of odors but also because the solution is simple and straightforward. The Hexa-Cover<sup>®</sup> is poured in, and automatically they create a coherent cover and automatically adapt to changes in the water level. The lifetime of 25 years was an-other factor. We are very pleased with the choice of Hexa-Cover<sup>®</sup>"

Ture Kliving, Environment Responsible







Sashimi Royal, DK-7730

"Since 2017 we have used Hexa-Cover® in our sea water tank in order to control growth of algae.

Our conclusion is very clear; Hexa-Cover® is a very effective tool to avoid growth of algae as the sun is blocked from affecting the water. Further, the Hexa-Cover® is very easy installed, it requires no maintenance, no service and no repair.

Prior to choosing Hexa-Cover® we also considered a tank-top but as we are located right at the seafront, we realized that we needed a long lived solution in no risk of being damaged by wind. We are very pleased about Hexa-Cover®."

Christian Bidstrup, Technician



Rockwool International A/S, DK-9500

2 x 1.250 m<sup>2</sup> water storage tanks

"We are now experiencing a significant difference. There is no clogging of filters because of algae and this means no stoppages at the plant, which again means huge savings in our operation-al costs.

Furthermore, the Hexa-Cover<sup>®</sup> Floating Cover solution is - compared to i.e. tents and tarpaulins as several industries are using to cover large containers - a much cheaper and easier solution.

In fact the Hexa-Cover<sup>®</sup> Floating Cover comes at around half the price of a traditional tent or tarpaulin and they are very easy to install and operate. You simply add the Hexa-Cover<sup>®</sup> Floating Cover into the container, and they distribute themselves automatically making a cover that needs no in-spection and/or servicing.

So, all in all, we are very satisfied with the Hexa-Cover<sup>®</sup> Floating Cover solution.

Christian Jensen, Process Manager





#### Ecuador

New Quito International Airport: Bird Deterrent, evaporation, and algae

#### Estonia

EST-44106, Kunda: Process water

### Finland

FIN-99250: CCD (counter current decantation)

#### France

F-03390: Leachate F-03600: Retention tank F-01150: Chemicals F-01360: Chemicals F-13117: Chlorinated solvents F-13117: Industrial wastewater F-13130: Chemical tank F-13131: Chemicals F-13773: 1.400 m2 industrial wastewater F-26000: Water storage tank F-26560: Water storage facility F-29279: Industrial wastewater F-30390: 1.000 m<sup>2</sup> industrial wastewater F-35500: Water storage, irrigation F-36400: Wastewater F-38150: Chlorine F-38150: Industrial wastewater F-38360: Nitric Acid F-38670: VOC reducing F-40800: Industrial wastewater F-42163: Industrial wastewater F-56140: Industrial wastewater F-57500: 2 x retention tanks F-59152: Water tank F-59279: 1.300 m<sup>2</sup> emergency tanks F-60190: Retention tank F-60190: Industrial wastewater F-60191: Retention tank F-60350: 2.100 m<sup>2</sup> industrial wastewater F-60350: Industrial wastewater F-68390: Industrial wastewater F-69191: Chemicals F-69583: 850 m<sup>2</sup> industrial wastewater F-74156: Retention tank F-75000 : Rainwater retention basin F-82700: 1.800 m<sup>2</sup> industrial wastewaster F-85170: Industrial wastewater F-93155: Diesel tank (Hexa-Cover® Oil & Gas) F-93155: Water storage (storm water)





#### Germany

D-06237:2.300 m<sup>2</sup> emergency water tank D-06237: Industrial wastewater D-06803: Cooling water D-17087: Wastewater D-17091: Polluted surface water, compost. plant D-17389: 2 x 2.500 m<sup>2</sup> wastewater D-18519: Polluted surface water D-19288: Process water D-22113: Leachate

D-24539: Water storage tank D-25572: Leachate D-31275: Process water D-32805: Municipal wastewater D-35764: Municipal WWTP D-38106: Wastewater D-38106: Wastewater tank (WWTP) D-38373: Municipal leachate D-39418: Process water D-47829: Chemical tank D-50129: Sewage treatment plant D-66115: Process water D-73497: Process water D-84489: 1.200 m<sup>2</sup> process water D-87787: Industrial wastewater, brewery D-97421: Municipal WWTP D-98634: Industrial wastewater

# Hamburg Port Authority, D-21159



"We are very satisfied with the Hexa-Cover<sup>®</sup> Floating Cover. The Hexa-Cover<sup>®</sup> serve their purpose to reduce the amount of light in the water and thus plant growth in the pond, very well"

M. Schadwinkel, Hamburg Port Authority

"At SKZ we installed the Hexa-Cover<sup>®</sup> Floating Cover in a 95° C test facility.

The development of moist, and the evaporation is reduced significantly."

SKZ-TeConA GmbH, D-97076:

#### BAUR Folien GmbH, D-87787



*"Before installing the Hexa-Cover® our customer - a brewery - had many complaints from neighbors about the odor.* 

After the installation the problem is solved".



### Hungary

HU-2338: Water storage facility HU-2344: 5.000 m<sup>2</sup> industrial wastewater HU-4300: 6.000 m<sup>2</sup> water reservoir

#### India

Gujarat 380024: Industrial wastewater

### Ireland

O'Neills Sportswear, Dublin

"We are very happy with the performance of the Hexa-Cover<sup>®</sup> Floating Cover, the odor problem has disappeared"



Listowel, Co. Kerry: Industrial wastewater

Co. Meath: 1.127 m<sup>2</sup> wastewater, brewery



#### Israel

 $3.500 \text{ m}^2$  water reservoir, irrigation  $20.000 \text{ m}^2$  water reservoir, irrigation

#### Italy

I-24060: Industrial wastewater I-40128: 1.100 m<sup>2</sup> industrial wastewater I-45011: Water storage I-51012: Industrial wastewater I-67063: Industrial wastewater (Coca-Cola®) I-95121: Industrial wastewater, refinery

#### Japan

Hakata area: industrial wastewater

#### Jordan

Amman: 7.900 m<sup>2</sup> water storage facility

#### Kazakhstan

Aktogay: 4.000 m<sup>2</sup> PLS reservoir Almaty: 1.650 m<sup>2</sup> PLS reservoir





#### Korea

Seoul - Waste Water

#### KSA

1.100 m<sup>2</sup> wastewater ponds (60-90° VOC) Hexa-Cover® Oil & Gas Heavy Duty /Extreme Duty

4.800 m<sup>2</sup> Waste Water storage facility Hexa-Cover® AP

Process water (refinery)

# Mexico

104.000 m<sup>2</sup> Tailing Pond



#### Morocco

Casablanca: 4.000 m<sup>2</sup> and 5.000 leachate reservoir

### Netherlands

NL-6167: 10.600 m<sup>2</sup> Industrial Wastewater NL-6170: 16.000 m<sup>2</sup> Industrial Waste Water NL-6170: 9.000 m<sup>2</sup> Industrial Waste Water NL-6171: 6.850 m2 Industrial Waste Water NL-9936: 1.000 m<sup>2</sup> Industrial Waste Water

NL-6167: 10.600 m<sup>2</sup> Industrial Waste Water:

"We are satisfied with the use of the Hexa-Cover® to cover up one of our process water bassins at the

Chemelot site. The odor in the area has reduced drastically"









# **New Zealand**

Northland: 7.000 m<sup>2</sup> wastewater lagoon South Island: 1.040 m<sup>2</sup> sewage treatment pond



# Norway

N-4029: Chemicals

N-5954 : Wastewater / crude oil



### Portugal

Alcanena: Industrial wastewater

Portel: Water tank (Irrigation)

### Romania

Bucharest, Comuna Costinesti: Wastewater RO-07: Industrial wastewater RO-700669: SBR Tank

#### **Slovak Republic**

82412: Process water 99128:

Industrial wastewater

# **South Africa**

Durban area: 4.500 m2 industrial wastewater





#### Spain

Tecnoaliment, S.L., Pobla de Segur, Lleida

"We have a water storage facility of about 10.000 m<sup>3</sup> located in La Pobla de Segur (Lleida). For obvious reasons, water evaporation is very. important in this area because of the height above sea level. Therefore, we were looking for a solution to reduce this loss. As the water level in the reservoir varies a lot, the solution chosen would have to allow also to adapt to this.

Based on the above, we chose to cover the reservoir with the Hexa-Cover<sup>®</sup> Floating Cover as this solution offers all the required features we requested.

After the installation we have seen a significant reduction in evaporation of around 75-80% which represents an extra saving of water for us.

In addition, we have noticed a significant improvement in water quality as Hexa-Cover<sup>®</sup> Floating Cover also is highly effective in stopping the growth of algae - there is simply no penetration of light into the water which means no growth of algae, what entails a significant increase in water quality. This improvement in water quality means a significant saving in chemicals to treat water and an improvement in the supply without seals in the filters. For all this, we can say that we have found the ideal solution. Indeed, the Hexa- Cover<sup>®</sup> Floating Cover is highly effective, very easy to handle and does not require any additional service, maintenance or supervision.

Hexa-Cover<sup>®</sup> is highly recommended and represents a good long-term investment."

Joan Ramon Porta, Director



Effective coverage for all fluids



Atlas Gestión Medio Ambiental, S.A. (Barcelona, Spain) chose Hexa-Cover<sup>®</sup> to reduce the odor level in two leachate ponds from a hazardous waste controlled landfill "To reduce odors, we chose the Hexa-Cover<sup>®</sup> floating cover for our 2 leachate ponds.

The main reasons for choosing Hexa-Cover<sup>®</sup> were its ability to reduce odors and that it is a solution that does not require permanent structures, and therefore minimizes the installation and maintenance costs associated with this type of roof.

Even the installation is remarkably simple and simple, Hexa-Cover<sup>®</sup> is launched directly into the ponds and each of the elements are distributed and placed automatically creating a uniform cover.

Another important aspect is the automatic adaptation to any change in the liquid level.

We are very pleased with the choice of Hexa-Cover<sup>®</sup> Floating Cover"

Xavier Mundet, Director General







#### Spain

E-06220: Cooling water E-06170 E-06870 E-08184: Water tank E-08272: Hazardous wastewater E-23440: Water tank (irrigation) E-25242: Water tank E-25316: 2 x water tanks E-25753: Water tank E-28300: WWTP (pharmaceutical industry) E-28830: Water tank (irrigation) E-36006: 1.720 m<sup>2</sup> effluent lagoon) E-37420: 2.000 m<sup>2</sup> leachate pond E-42005: Water tank (irrigation) E-42005: Wastewater E-43110: Styrene tank E-43439 E-43460: Water tank E-43460: Industrial watewater E-44580: Water tank E-48001: 1.700 m2 leachate basin E-49708 E-50290: Water storage tank E-61: Solar plant, water basin E-68: Solar plant, water basin



CH-6287: Water storage CH-8353: Water storage CH-8552: Water storage (irrigation)

#### Taiwan

Taipei: Municipal WWTP

#### Turkey

54000 Adapazarı/Sakarya: 6.100 m<sup>2</sup> industrial wastewater (sugar manufacturing)



# UK

DA11: Industrial water storage DA11: 1.200 m2 water storage reservoir EH27: Industrial wastewater NG 33: Industrial wastewater





#### USA

Alexandria, LA: 74.000 sqft / 6.875 m2 wastewater reservoirs)

Algona, IA: Industrial wastewater Bedford, IN: Industrial wastewater CA 95469: Water storage facility Canton, OH: Industrial wastewater Clarksburg, WV: 4.730 m<sup>2</sup> Frac Water Tank Cleveland, OH: Industrial wastewater CO: 5 Frac Water Tanks Dakota, IL: Industrial wastewater Dallas, OR: Water storage tank Dallas, WV: 2.315 m<sup>2</sup> Frac Water Tank DeBuque, CO: 10.500 m<sup>2</sup> Water Storage Dickson County, TN: Sedimentation tank Emporia, KS: Industrial wastewater

Francesville, IN: Industrial wastewater Gallatin, TN: Municipal wastewater Henderson, KY: Industrial wastewater Houston, TX: Industrial wastewater

Green Bay, WI: 2.185 m<sup>2</sup> De-icing Storage Pond Austin Straubel International Airport)

Green River, WY: Industrial wastewater Jackson, OH: Industrial wastewater

Kanab, UT: Water tank (wildlife) Laurel, MD: Industrial wastewater Lewis Run, PA: Water storage facility





La Porte, TX: Contaminated water Mesa Verde, CA: Water storage facility Medaryville, IN: Industrial wastewater Milkford, OH: 1.950 m2 Wastewater reservoir Monaca, PA: Industrial wastewater Monroe, WI: 1.235 m<sup>2</sup> equalization tank Moorhead, MN: Water storage facility Pacheco, CA: 1.800 m<sup>2</sup> water reservoir Port Arthur, Texas: Water Storage Tank Piketon, OH: Water storage facility Port Arthur, TX: Water storage facility Springfield, PA: Water storage facility Sonora, CA: Wastewater St. Croix, USVI: 32,300 sqft Storage Facility





#### Napa Berryessa Resort Improvement, Napa, CA

Napa Berryessa Resort Improvement, chose Hexa-Cover<sup>®</sup> Floating Cover for a wastewater application for controlling odor, algae and evaporation.

Hexa-Cover<sup>®</sup> Floating Cover is installed at Lake Berryessa Wastewater Treatment plant, 1465 Steele Canyon Road, Napa. The application is to cover two concrete equalization basins.

#### Process:

Raw sewage from homes and resort, flow from gravity and lift stations into headwork's Lakeside Spiral Screen, screened water into two equalization basins with Hexa-Cover<sup>®</sup> Floating Cover, then to Ovivo MBR, to effluent basin or alternate over-flow basin, then pumped to reservoir off site for land application.

Plant flow capacity approximately 30.000 GPD now and at build out 60.000 GPD.

"The visit to the plant was a bit amazing. There was no odor from the "Hexa-Covered" EQ Basins. These EQ basins have exceedingly high odor potential and algae potential because of the heavy nutrients coming off the screen. There were no algae, the discs as advertised interlocked, they floated up and down with no problem, and could not help but reduce evaporation.





A solid cover presented safety issues, the discs did not. Summit Engineers was going to put aeration in these basins but saw a sample of the Hexa-Cover<sup>®</sup> product, called references then recommended the Hexa-Cover<sup>®</sup> installation. It penciled out better than aeration. That was important to this design build project, which Western Water Constructors, Inc. did with Summit.

Adjacent to these equalization basins are the effluent basin and overflow basin. These two ba-sins were covered with algae.

The point: the Hexa-Cover<sup>®</sup> Floating Cover eliminates algae!

As proof, side by side basins, same plant, same time, two "Hexa-Covered" basins without algae and two uncovered basins with heavy algae. Also, no odor from the EQ basins.

The discs arrived in large sacks. Installation was simple; they simply dumped the discs into the basins. Installation was less than an hour. Contrast that to an aeration system"



## Austin Straubel International Airport

Green Bay, WI

# 2.185 m<sup>2</sup> Deicing Storage Pond

The Austin Straubel International Airport required a new cover for its open water storage pond, which is used for deicing and storm water retention.

Critical to the operation of the airport, the open water pond requires a cover to serve as a bird deterrent and to protect wildlife from the toxicity of glycol.

In addition, the glycol and other chemicals used in the airport maintenance generate strong odors which also need to be controlled.

The unique Hexa-Cover® offers unique features for odor control, algae control, evaporation control and heat retention. The patented design incorporates hexagonal discs constructed of 100% recycled polypropylene with interlocking edges and a buttressed profile that allows for selfleveling, adjustment and dispersion ensuring maximum surface area coverage in all conditions.

The Hexacovers were installed with minimal time, low cost, and no equipment, providing almost instant coverage.





Installed in less than 4 hours, bags of discs were emptied into the basin and the cover immediately began serving as a bird deterrent, eliminating odors and keeping wildlife from coming in contact with potentially harmful deicing fluids.

When the pond level fluctuates, the tiles lay on the pond slopes and bottom until the water level rises again.

What could have been a major problem is now a worry-free operation thanks to the Hexa-Cover® System.





For more information and quotation please contact

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Effective coverage for all fluids