

# **Rising Demand Meets Environmental Enforcement: Pollution Becomes Dairy's Achilles' Heel**

Supply Chain Pollution Investigation on China's Dairy Industry



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When China's two-child policy was implemented in 2016, it became many families' "happy trouble" – but for the dairy industry, it was thrilling news. Along with citizens' increasing incomes, public demand in China for milk-related products is also steadily growing. Expansion of the consumer market for dairy products has prompted an increase in domestic output: in 2016 alone, China's yield of dairy products was as high as 29.932 million tons.<sup>1</sup>



Figure 1. Mengniu Advertisement on JD.com

Before entering the market, dairy products must pass through a series of processes including cattle farming, fresh milk collection, dairy production and cold chain transport processes. Within these segments, improper handling of emissions from dairy farming waste as well as dairy processing wastewater may pose rather significant negative impacts on the environment.

### The Environmental Burden of Dairy Farming

The main source of pollution from dairy farming is dairy cow excrement. A 100-cow pasture can produce around three tons of feces and urine daily!<sup>2</sup>

Dairy cow excrement contains significant amounts of nitrogen, phosphorus, drug additives and other leftover residues. Modern large-scale cattle farms are typically equipped with manure treatment systems, collecting wastewater and solid waste from excrement and feces collection pools into fermentation pools, where the material goes through an anaerobic fermentation process. Afterwards, the dry residue is used as bedding for cattle, fermented liquid is transferred via pipe to fields to be used as organic fertilizer, and the slurry serves as boiler fuel, thus achieving effective resource utilization.

<sup>1</sup> <http://www.chinadairy.net/Item/Show.asp?m=1&d=3636>

<sup>2</sup> Technical Specifications for Pollution Treatment Projects of Livestock and Poultry Farms (HJ497-2009)

## Supply Chain Pollution Investigation on China's Dairy Industry

Improper handling of wastewater and solid waste, and direct discharge of non-treated fermented liquid may not only pollute surface water, but can also influence crop yields. When manure that has not been treated to an innocuous state is directly used for crop fertilization and irrigation, then its large quantities of sodium and potassium salts can harden the soil.

In addition, long-term storage in poorly ventilated facilities cause feces to decompose, producing hydrogen sulfide, ammonia and other pungent gases. The strong odors can affect the lives of residents in surrounding neighborhoods, who in turn register complaints and raise disputes. Hubei Tongshan Pasture, a subsidiary of Modern Farming (Group) Co., Ltd., was blockaded by villagers because of the overpowering stench coming from such gases and other pollution problems,<sup>3</sup> causing operations to be temporarily suspended.<sup>4</sup>

In recent years, environmental laws and regulations have been promulgated and revised to confront pollution caused by livestock and poultry farming. They clearly stipulate the following:

China's Environmental Protection Law, revised in 2014, states: "Entities and individuals engaged in livestock and poultry breeding and slaughtering shall take effective measures to dispose of manure and carcasses of livestock, sewage and other wastes in a scientific manner to prevent environmental pollution."

The Air Pollution Prevention and Control Law, amended in 2015, stipulates: "In farms and villages with livestock and poultry, by-products such as sewage, feces and carcasses of dead livestock and poultry shall be collected, stored, transported and safely disposed in a timely manner in order to prevent the discharge of malodorous gases."

China's Animal Husbandry Law, also revised in 2015, states: "Livestock and poultry farms and breeding areas shall ensure comprehensive utilization of livestock and poultry excrement, wastewater as well as other solid waste or the regular operation of equipment for treatment to an innocuous state and guarantee that wastewater meets discharge standards to prevent environmental pollution."

2017 amendments to the Water Pollution Prevention and Control Law state: "Livestock and poultry farms and breeding areas shall ensure comprehensive utilization of livestock and poultry excrement and wastewater or the regular operation of equipment for treatment to an innocuous state and guarantee that wastewater meets discharge standards to prevent environmental pollution."

In addition, the Administrative Measures on the Prevention and Control of Pollution from Livestock and Poultry Farming (2001) and the Regulations on the Prevention and Control of Pollution from Large-Scale Livestock and Poultry Breeding (2013) also provide detailed regulations on the prevention and control of pollutant discharge, waste disposal and other environmental issues from livestock and poultry (including from dairy cows).

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<sup>3</sup> <http://news.163.com/14/1129/18/AC84KMH700014SEH.html>

<sup>4</sup> <http://guba.eastmoney.com/news,hk01117,631537752.html>

## Supply Chain Pollution Investigation on China's Dairy Industry

However, a pollution investigation into the supply chains of major dairy product brands, including Mengniu Holdings' Modern Farming (Group) Co., Ltd., Bright Dairy Industry & Food Co., Ltd., Fonterra Co-operative Group, Ltd. and several other major domestic and foreign brands' livestock and poultry farm subsidiaries, reveals the persistence of varying degrees of environmental violations:

Affiliated Company	Subsidiary Name	Environmental Violation(s)
<b>Modern Farming (Group) Co., Ltd.</b>	Modern Farming (Hefei) Co., Ltd.	2017: Violation of water pollution prevention and control management system; inadequate rain and sewage diversion and rainwater collection processes; rain canopy not built for silage storage cellar; did not accept the "three synchronizations" for environmental protection in construction projects <sup>5</sup>
	Modern Farming (Bengbu) Co., Ltd.	2016: Began operation prior to inspection <sup>6</sup>
	Shangzhi Modern Farming Co., Ltd.	2016: Began operation prior to inspection <sup>7</sup>
	Modern Farming (Feidong) Co., Ltd.	2016: Began operation prior to inspection <sup>8</sup> 2014: Unauthorized biogas slurry dumping; <sup>9</sup> wastewater pollution; odor pollution <sup>10</sup>
<b>Hunan Gaea Gem Dairy Holdings Co., Ltd.<sup>11</sup></b>	Hunan Gaea Gem Dairy Holdings Co., Ltd.; Pasture 1	2015: Has not set up wastewater treatment facilities since beginning production; wastewater suspended solids, COD, 5-day BOD, and fecal coliform all exceeded stipulated standards; rated as an "environmental risk" enterprise 2014: Rated as an environmentally harmful enterprise <sup>12</sup>
	Hunan Gaea Gem Dairy Holdings Co., Ltd.; Pasture 5	2015: Farm has not set up wastewater treatment facilities; desulfurization stack not operating; portion of urine directly discharged without treatment; pollutant discharge exceeds standards; rated as an "environmental risk" enterprise <sup>13</sup>
	Hunan Gaea Gem Dairy Holdings Co., Ltd.; Pasture 7	2014: Environmental impact assessment documents have not been approved since beginning production; rainwater is not separated from wastewater; wet and dry substances are not separated; not equipped with sewage treatment facilities; untreated solid waste and wastewater directly discharged into Ximaoli Lake drinking water protected area <sup>14</sup>

<sup>5</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=1111911&dataType=0&isyh=0>

<sup>6</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=184910&dataType=0&isyh=0>

<sup>7</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=442687&dataType=0&isyh=0>

<sup>8</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=350980&dataType=0&isyh=0>

<sup>9</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=301927&dataType=0&isyh=0>

<sup>10</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=216530&dataType=0&isyh=0>

<sup>11</sup> Hunan Yangguang Dairy Holdings Company, Ltd. is the former name of Hunan Gaea Gem Dairy Holdings Co., Ltd.

<sup>12</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=224039&dataType=0&isyh=0>

<sup>13</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=235581&dataType=0&isyh=0>

<sup>14</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=235581&dataType=0&isyh=0>

## Supply Chain Pollution Investigation on China's Dairy Industry

	Hunan Yangguang Dairy Holdings Co., Ltd.; Pasture 1	Quarterly supervisory monitoring data for 1 <sup>st</sup> , 3 <sup>rd</sup> and 4 <sup>th</sup> quarters in 2014 and 1 <sup>st</sup> , 2 <sup>nd</sup> , and 3 <sup>rd</sup> quarters in 2015 shows multiple wastewater parameters in excess of standards <sup>15</sup>
	Hunan Yangguang Dairy Holdings Co., Ltd.; Pasture 2	Quarterly supervisory monitoring data for 1 <sup>st</sup> , 2 <sup>nd</sup> and 3 <sup>rd</sup> quarters in 2014 shows multiple wastewater parameters in excess of standards; data for 1 <sup>st</sup> quarter in 2015 shows excess figures for fecal coliform <sup>16</sup>
	Hunan Yangguang Dairy Holdings Co., Ltd.; Pasture 5	Quarterly supervisory monitoring data for all four quarters in 2014 and 1 <sup>st</sup> and 3 <sup>rd</sup> quarters in 2015 show shows multiple wastewater parameters in excess of standards <sup>17</sup>
<b>Fonterra Co-operative Group</b>	Fonterra Co-operative Group, Ltd. (Yutian)	2016: Because of improper separation of rainwater, channel discharge passing through the discharge outlet for rainwater into a channel that has not been outfitted to protect from seepage contained urine and fecal matter and did not comply with standards <sup>18</sup>
	Fonterra Co-operative Group, Ltd. (Yutian) – First branch	2014: Illegal production; illegal disposal of solid waste; trial production conducted for a year before the construction project was inspected and approved; did not adopt anti-leakage measures; accumulated feces and urine dumped in a sandpit <sup>19</sup>
<b>Liaoning Huishan Dairy Group Co., Ltd.</b>	Liaoning Huishan Dairy Group Co., Ltd.; Yushu Dairy Industry Co., Ltd.	2017: Dairy cow excrement storage tanks not constructed; excrement instead accumulated in a pile and left fermenting in the factory area <sup>20</sup>
	Liaoning Huishan Dairy Group Co., Ltd.; Sihe City Dairy Industry Co., Ltd.	2016: Began construction without approval <sup>21</sup>
	Liaoning Huishan Dairy Group Co., Ltd.; Xiushui Dairy Industry Co., Ltd.	2016: Began construction without approval <sup>22</sup>
	Liaoning Huishan Dairy Group Co., Ltd.; Fuxing Dairy Industry Co., Ltd.	2016: Began construction without approval <sup>23</sup>
	Liaoning Huishan Dairy Group Co., Ltd.; Pengjia Dairy Industry Co., Ltd.	2016: Began construction without approval <sup>24</sup>

<sup>15</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=202329&dataType=0&isyh=0>

<sup>16</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=202328&dataType=0&isyh=0>

<sup>17</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=202330&dataType=0&isyh=0>

<sup>18</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=177928&dataType=0&isyh=0>

<sup>19</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=194097&dataType=0&isyh=0>

<sup>20</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=1308892&dataType=0&isyh=0>

<sup>21</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=437624&dataType=0&isyh=0>

<sup>22</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=437622&dataType=0&isyh=0>

<sup>23</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=437621&dataType=0&isyh=0>

<sup>24</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=437620&dataType=0&isyh=0>

## Supply Chain Pollution Investigation on China's Dairy Industry

	Liaoning Huishan Holdings (Group); Xiahe Dairy Co., Ltd.; Agricultural Park Dairy Farm	2016: Began construction without approval <sup>25</sup> 2015: Environmental impact assessment documents long overdue, yet farm operating as usual <sup>26</sup>
	Liaoning Huishan Dairy Group; Taiping Dairy Co., Ltd.	2016: Two projects have not been examined and approved by the environmental protection department; however, the main project has been put into production <sup>27</sup>
<b>Bengbu Heping Dairy Co., Ltd.</b>	Bengbu Heping Dairy Co., Ltd.; Liangzhong Dairy Cow Breeding Center	2016: Engaged in animal husbandry without taking effective measures for waste disposal, leading to leaking and seepage from solid waste (废弃物); discharging wastewater through means that avoid supervision <sup>28</sup> 2015: Pollution control facility suspected of abnormal operation <sup>29</sup>
<b>New Hope Dairy Holdings Co., Ltd.</b>	Anhui New Hope Baidi Dairy Co., Ltd.	2016: Began operation prior to inspection 2015: Wastewater discharge exceeds standards <sup>30</sup>
	Yunnan New Hope Xuelan Dairy Technology Co., Ltd.; Luliang Farm (large-scale pasture)	2016: Production launched when pollution control equipment is not yet built or requires improvements <sup>31</sup>
	Luliang New Hope Xuelan Dairy Cow Farming Co., Ltd.; Qijiashan Pasture	2016: Production launched when pollution control equipment is not yet built or requires improvements <sup>32</sup>
<b>Bright Dairy &amp; Food Co., Ltd.</b>	Shanghai Bright Holstan Co., Ltd.	2017: Pollution treatment facilities are used improperly, or lay idle, or are dismantled without authorization; <sup>33</sup> sewage exceeds discharge standards or total discharge quantity; in violation of management deadlines <sup>34</sup> 2016: Violation of animal husbandry management system <sup>35</sup> 2014: Violation of water pollution control management system <sup>36,37</sup>
	Zhejiang Holstan Dairy Co., Ltd.	2015: Portion of animal excrement ineffectively collected, causing feces to enter into the south-side gutter of the organic fertilizer plant 2014: Animal husbandry solid waste (废弃物) sent to the water drainage system, causing wastewater discharge sent to the channel to exceed standards <sup>38</sup>

<sup>25</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=430713&dataType=0&isyh=0>

<sup>26</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=250850&dataType=0&isyh=0>

<sup>27</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=270847&dataType=0&isyh=0>

<sup>28</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=224291&dataType=0&isyh=0>

<sup>29</sup> <http://www.bbepb.gov.cn/show.aspx?ID=14072>

<sup>30</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=351088&dataType=0&isyh=0>

<sup>31</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=516650&dataType=0&isyh=0>

<sup>32</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=516651&dataType=0&isyh=0>

<sup>33</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=1102339&dataType=0&isyh=0>

<sup>34</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=511027&dataType=0&isyh=0>

<sup>35</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=511027&dataType=0&isyh=0>

<sup>36</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=25136&dataType=0&isyh=0>

<sup>37</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=212521&dataType=0&isyh=0>

<sup>38</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=169305&dataType=0&isyh=0>

## Supply Chain Pollution Investigation on China's Dairy Industry

<b>Shanghai Dairy Group Co., Ltd.</b>	Shanghai Dairy Group; Xianghua Fresh Milk Co., Ltd.	2016: Violation of the Shanghai Municipal Environmental Protection Regulations 2015: Subject of complaints due to wastewater exceeding standards and odor pollution, violation of animal husbandry management system; sewage exceeds discharge standards or total discharge quantity; in violation of management deadlines <sup>39</sup>
	Shanghai Dairy Group; Yingbo Dairy Farming Co., Ltd.	2015: Pollution treatment equipment operates irregularly, is dismantled without permission or remains idle <sup>40</sup>
	Shanghai Dairy Group; Zhijiang Fresh Milk Co., Ltd.	2015: Pollution treatment equipment operates irregularly, is dismantled without permission or remains idle <sup>41</sup>

In addition to the various environmental violations discovered during routine supervision and enforcement by relevant environmental protection departments, during the past two years, dairy farming enterprises have been repeatedly denounced over the course of large-scale and high-intensity central and provincial-level environmental inspections. There has been no shortage of large-scale animal husbandry farms among those reported. Environmental problems such as dairy farming wastewater and putrid air continue to incite strong reactions from local populations toward prominent environmental issues:

Farm Name	Investor(s)	Environmental Violation(s)
<b>Heping Dairy Co., Ltd. ; Liangzhong Dairy Cow Farming Center</b>	Bengbu Heping Dairy Co., Ltd.	2017: Plant's water pollution treatment equipment exhibits long-term abnormal operation; a portion of plant's wastewater collection pools and excrement collection pools have not undergone anti-seepage treatment; wastewater and excrement are routinely discharged without treatment; relatively serious environmental pollution problems persist <sup>42</sup>
<b>Heping Dairy Mayishan Milk Factory</b>		2017: Untreated wastewater released into village fish and water ponds in Zhonglou Village of Fucheng Town in Fengyang County <sup>43</sup>
<b>Huanggang Youran Dairy Farming Co., Ltd., Wuxue branch</b>	Inner Mongolia Youran Animal Husbandry Co., Ltd.	2016: 1) Stench from livestock and poultry excrement and urine found to impact the quality of surrounding air; under the current conditions, this problem is difficult to eradicate; 2) In summer, there are a lot of flies and mosquitoes in the area surrounding the farm; the area's hygienic conditions worsen; 3) Rainwater drainage system is incomplete, and in the case of heavy rain, rainwater mixes with other water; 4) Environmental management does not conform to standards, and environmental management accounts are not robust; 5) The existing sedimentation tank is too simple,

<sup>39</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=231276&dataType=0&isyh=0>

<sup>40</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=240974&dataType=0&isyh=0>

<sup>41</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=240973&dataType=0&isyh=0>

<sup>42</sup> <http://www.ahjjc.gov.cn/p/45950.html>

<sup>43</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=516420&dataType=0&isyh=0>

## Supply Chain Pollution Investigation on China's Dairy Industry

		and mixes with the air flotation pool; 6) Area of current organic fertilizer plant is too limited, and does not conform to standards <sup>44</sup>
<b>Ningxia Nongken Group Co., Ltd.; Jianquan Wantou Dairy Farm</b>	Ningxia Nongken Group Co., Ltd.	2016: Air pollution <sup>45</sup>
<b>China Animal Husbandry Xinghua Co., Ltd.</b>	Inner Mongolia Saikexing Reproductive Biotechnology Group Co., Ltd.	2016: Wastewater pollution, odor pollution, as well as treatment of cows that die from disease and cows introduced from outside leads to the spread of harmful bacteria and illness <sup>46</sup>
<b>Daqing Shuangfatun Breeding Co., Ltd.; Daqing Rixincun Breeding Co., Ltd.</b>	Daqing Zhongding Dairy Farming Co., Ltd.	2016: Excrement is dumped directly on the pasture, disturbing local residents and inhibiting grass growth <sup>47,48</sup>
<b>Yongfengyuan Ecological Agriculture Co., Ltd.</b>	Individual(s)	2017: Findings of first inspector: Environment is dirty and disordered; seepage from silage is not effectively treated; biogas slurry storage tank is not protected from rain; rain and sewage diversion measures are not implemented, etc. Findings of second inspector: Slurry storage tank is not completely protected from rain; sewage separation is irregular <sup>49</sup>
<b>Shunchang Fuquan Agricultural Development Co., Ltd.</b>	Individual(s)	2017: 1) No enclosure constructed for cattle excrement piled up on the side of the 316 National Highway; 2) On the east side of the separation platform for wet and dry materials, a small amount of manure found piled up next to the cattle pen; 3) A small amount of cleaning wastewater enters into the rain drainage system from the milking hall due to the lack of a cofferdam; 4) A small amount of beer leachate enters the rain drainage system; 5) A small amount of water from washing and other domestic wastewater enters the rain drainage system. <sup>50</sup>
<b>Southern suburbs of Datong City, dairy cattle farming professional cooperatives</b>	-	2017: Environmental procedures not executed; excrement temporarily piled up without adopting anti-seepage, anti-leakage and other pollution prevention measures <sup>51</sup>

<sup>44</sup> [http://www.hg.gov.cn/art/2016/12/20/art\\_6063\\_107199.html](http://www.hg.gov.cn/art/2016/12/20/art_6063_107199.html)

<sup>45</sup> <http://www.nxszs.gov.cn/xinwendongtai/qwfb/304173.htm>

<sup>46</sup> [http://xxgk.taizhou.gov.cn/xxgk\\_public/jcms\\_files/jcms1/web1/site/art/2016/8/2/art\\_10164\\_1403.html](http://xxgk.taizhou.gov.cn/xxgk_public/jcms_files/jcms1/web1/site/art/2016/8/2/art_10164_1403.html)

<sup>47</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=284767&dataType=0&isyh=0>

<sup>48</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=284768&dataType=0&isyh=0>

<sup>49</sup> <http://www.cepb.gov.cn/doc/2017/02/22/153638.shtml>

<sup>50</sup> <http://www.guangze.gov.cn/cms/html/xzfwz/2017-06-02/1631880314.html>

<sup>51</sup> <http://www.dtwj.gov.cn/dtzww/hjbh/201705/17ce877be3c54498bdd5d9565a7fdd48.shtml>



## Supply Chain Pollution Investigation on China's Dairy Industry

<b>Shizuishan Yimin Jinhe Co., Ltd</b>	Individual(s)	2016: Untreated sewage discharged directly into the farm drainage channel <sup>52</sup>
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## Environmental Impacts from the Dairy Processing Sector

Fresh milk collected at or purchased from farms needs to be processed before it reaches the supermarket via cold chain transport. Factories often use the CIP<sup>53</sup> system to clean their equipment. In the process of washing and sterilizing pipes and jars through mechanical spraying and chemical agitation, the milk fats, lactose and milk proteins contained in fresh milk also enter CIP wastewater, resulting in a higher concentration of organic matter.<sup>54</sup> Furthermore, the use of phosphorus as a cleaning agent can also lead to a high concentration of phosphorus in wastewater.

Research shows that subsidiary factories of Yili, Mengniu and Junlebao have exhibited instances of wastewater exceeding emissions standards (see table below). At the end of April 2017, Mengniu Dairy (Ma'anshan) Co., Ltd., was even/also penalized for shutting down the dissolved air flotation equipment of its wastewater treatment facilities without prior authorization.<sup>55</sup>

Name of Company's Subsidiary	Environmental Violation(s)
Xi'an Yili-Tipco Beverage Co., Ltd.	2014 : Chemical oxygen demand (COD) discharge exceeded standards in the third quarter <sup>56</sup>
Shijiazhuang Junlebao Dairy Co., Ltd.	07/03/2015 : Total nitrogen discharge for main discharge outlet exceeded standards <sup>57</sup>
Wuhan Mengniu Dairy Co., Ltd.	04/17/2015, 07/08/2015, 10/11/2016 : Phosphate discharge for main discharge outlet exceeded standards <sup>58</sup>
Jiaozuo Mengniu Dairy Co., Ltd.	04/24-28/2014: COD discharge exceeded standards <sup>59</sup>

## Well-known Dairy Brands Are Reluctant to Respond

The aforementioned farms and processing subsidiaries with environmental violations introduce their experiences in environmental management to varying degrees in publicly-released corporate responsibility reports and other documents.

<sup>52</sup> <http://www.nxszs.gov.cn/xinwendongtai/qwfb/302769.htm>

<sup>53</sup> CIP stands for "Clean in Place" and is a method of cleaning the interior surfaces of equipment without disassembly.

<sup>54</sup> Discharge Standard of Water Pollutants for Dairy Industry (Draft for Feedback) compilation announcement, Nov. 2010

<sup>55</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=19159&dataType=0&isyh=0>

<sup>56</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=89557&dataType=0&isyh=0>

<sup>57</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=159652&dataType=0&isyh=0>

<sup>58</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=228369&dataType=0&isyh=0>

<sup>59</sup> <http://www.ipe.org.cn/IndustryRecord/regulatory-record.aspx?companyId=159615&dataType=0&isyh=0>

## Supply Chain Pollution Investigation on China's Dairy Industry

Among them, China Modern Dairy,<sup>60</sup> the “leading global publicly-listed dairy farming company, China’s largest dairy farming company and a supplier of high-quality dairy products, and the world’s leader in mass-scale dairy cow farming” introduces the company’s circular pasture management theory in detail in its 2016 environmental, social and governance report:<sup>61</sup>

現代牧業重視生產運營對環境的影響，制定了嚴格的排放物管理制度。除對牲畜糞便等養殖業主要排放物進行百分百資源化利用外，我們還關注廢水、廢氣、危險廢棄物和溫室氣體的科學、妥當處理，將減排工作落到實處。

- 廢水：液奶廠的廢水接入牧場，用於牧場牛舍降溫及牛舍糞道的沖洗、場內種植地澆灌，保證廢水不外流
- 廢氣：來自牛舍、沼氣站和供熱鍋爐等單元的廢氣經處理後達標排放

Figure 2. China Modern Dairy’s 2016 environmental, social and governance report

In its 2016 China Mengniu Dairy Co., Ltd. Sustainable Development Report,<sup>62</sup> Mengniu also publishes the experience of its full wastewater management process.

### 廢水

- 采用污水全過程管理模式，從源頭進行污水治理。2016年，污水排放總量達2065萬噸。
- 在綫實時監控污水排放情況，并聯網公布監測數據。
- 累計配套建設32個污水處理廠，確保所有污水排放符合國家各項標準。
- 引進無磷清洗劑、懸浮物分離技術等新材料和新技術，深度處理排放污水，回收用於廠區綠化、道路清洗。2016年，COD減排量為1403.75噸。
- 組織全國污水處理專職人員43人開展污水處理專業知識培訓，提高專職人員基礎知識水平和污水處理實操水平。



Figure 3. China Mengniu Dairy Co., Ltd., Sustainable Development Report

<sup>60</sup> “China Modern Dairy Holdings, Ltd.” and its subsidiaries are collectively known as Modern Farming (Group) Co., Ltd.

<sup>61</sup> [http://pdf.dcfw.com/pdf/H2\\_AN201705230597976818\\_1.pdf](http://pdf.dcfw.com/pdf/H2_AN201705230597976818_1.pdf)

<sup>62</sup> <http://www.mengniu.com.cn/duty/mngy/>

## Supply Chain Pollution Investigation on China's Dairy Industry

Between July 2017 and August 2017, as part of our investigation, we separately sent letters to the following above-mentioned companies with environmental violations: Modern Farming (Group) Co., Ltd.; Bright Dairy & Food Co., Ltd.; New Hope Group Co., Ltd.; Hunan Gaea Gem Dairy Co., Ltd.;<sup>63</sup> Bengbu Heping Dairy Co., Ltd.;<sup>64</sup> Shanghai Dairy Group Co., Ltd.;<sup>65</sup> Junlebao Dairy Group;<sup>66</sup> Liaoning Huishan Dairy Group Co., Ltd.; Fonterra Co-operative Group; Inner Mongolia Mengniu Dairy (Group) Holdings Co., Ltd.; Inner Mongolia Yili Group Holdings Co., Ltd.; Inner Mongolia Youran Animal Husbandry Co., Ltd.; Ningxia Nongken Group Co., Ltd.;<sup>67</sup> Inner Mongolia Saikexing Reproductive Biotechnology Group Co., Ltd.; Daqing Zhongding Dairy Farming Co., Ltd.; Datong South farming professional cooperatives; and Shizuishan Yinong Jinhe Co., Ltd.<sup>68</sup> We hope these enterprises will push their subsidiary farms and/or dairy processing plants to comply with environmental laws and regulations, improve their environmental performance, reduce the environmental burden of dairy production, and issue explanations about their environmental violations to the public. However, up through the publication of this report, we have not yet received any responses<sup>69</sup>.

On August 16, 2017, we communicated with the person in charge of Mengniu's corporate social responsibility department about violation issues at subsidiaries of Modern Farming and Mengniu. This individual expressed that the suppliers with violations would be pushed to issue public explanations following internal coordination with relevant departments.

With the advent of China's two-child policy, domestic and foreign dairy brands are all but falling over each other in their eagerness for representation in the Chinese market. We hope these brands' enterprises can provide Chinese infants with safe, nutritious dairy products and contribute to their healthy growth. At the same time, we also hope they can actively fulfill their corporate social responsibility through channels such as CSR reports and websites and disclose their supply chain environmental management measures to the public. Even more so, we hope they will be accountable in responding to environmental organizations, and that by promoting their suppliers to achieve environmental compliance, they can reduce negative impacts on surrounding residents and ecosystems, and establish a green supply chain for dairy production.

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<sup>63</sup> No one responded to the fax.

<sup>64</sup> No one responded to the fax.

<sup>65</sup> The delivery address does not exist, so the letter could not be successfully sent and was returned to sender.

<sup>66</sup> Receipt acknowledged via automatic reply.

<sup>67</sup> System returned letter.

<sup>68</sup> Receipt acknowledged via automatic reply.

<sup>69</sup> Unable to locate e-mail address and/or fax number for Yongfengyuan Ecological Agriculture Co., Ltd. and Shunchang Fuquan Agricultural Development Co., Ltd.