

Welcome to your CDP Water Security Questionnaire 2020

W0. Introduction

W0.1

(W0.1) Give a general description of and introduction to your organization.

For more than a century, Merck & Co., Inc. , Kenilworth, New Jersey, USA, a leading global biopharmaceutical company known as MSD outside of the United States and Canada, has been inventing for life, bringing forward medicines and vaccines for many of the world's most challenging diseases. Through our prescription medicines, vaccines, biologic therapies and animal health products, we work with customers and operate in more than 140 countries to deliver innovative health solutions. We also demonstrate our commitment to increasing access to health care through far-reaching policies, programs and partnerships. Today, our company continues to be at the forefront of research to advance the prevention and treatment of diseases that threaten people and communities around the world - including cancer, cardio-metabolic diseases, emerging animal diseases, Alzheimer's disease and infectious diseases including HIV, Ebola and SARS-CoV-2.

Through innovative research, groundbreaking partnerships and smarter processes, we are working to advance our performance in four priority areas: Access to Health, Environmental Sustainability, Employees, and Ethics & Transparency. With a focus on these priority areas across our entire organization, we are committed to leading the future of healthcare.

Our company reported total sales of \$46.84 billion during 2019 with approximately 71,000 employees worldwide as of December 31, 2019. Further information is available at www.merck.com.

W0.2

(W0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date
Reporting year	January 1, 2019	December 31, 2019

W0.3

(W0.3) Select the countries/areas for which you will be supplying data.

- Algeria
- Argentina
- Australia
- Austria

Belarus
Belgium
Bermuda
Brazil
Bulgaria
Canada
Chile
China
China, Hong Kong Special Administrative Region
Colombia
Croatia
Cyprus
Czechia
Denmark
Ecuador
Egypt
Estonia
Finland
France
Germany
Greece
Guatemala
Hungary
India
Indonesia
Ireland
Israel
Italy
Japan
Jordan
Kazakhstan
Latvia
Lebanon
Lithuania
Malaysia
Mexico
Morocco
Netherlands
New Zealand
Norway
Peru
Philippines
Poland
Portugal
Puerto Rico
Republic of Korea

- Romania
- Russian Federation
- Serbia
- Singapore
- Slovakia
- Slovenia
- South Africa
- Spain
- Sweden
- Switzerland
- Taiwan, Greater China
- Thailand
- Turkey
- Ukraine
- United Kingdom of Great Britain and Northern Ireland
- United States of America
- Uruguay
- Venezuela (Bolivarian Republic of)
- Viet Nam

W0.4

(W0.4) Select the currency used for all financial information disclosed throughout your response.

USD

W0.5

(W0.5) Select the option that best describes the reporting boundary for companies, entities, or groups for which water impacts on your business are being reported.

Companies, entities or groups over which operational control is exercised

W0.6

(W0.6) Within this boundary, are there any geographies, facilities, water aspects, or other exclusions from your disclosure?

Yes

W0.6a

(W0.6a) Please report the exclusions.

Exclusion	Please explain
Small office and leased space.	Small offices and certain leased buildings are excluded from all sections of the report except for their estimated withdrawals and discharges in section W1.2B and

	W1.2h. We have estimated that the amount of water used at these facilities is approximately 3% of our total global water use.
Recent acquisitions	Recent acquisitions are excluded from all sections of the report except for their estimated withdrawals and discharges in section W1.2B and W1.2H. These facilities will be included in the future as sites are fully integrated to the company internal reporting processes.

W1. Current state

W1.1

(W1.1) Rate the importance (current and future) of water quality and water quantity to the success of your business.

	Direct use importance rating	Indirect use importance rating	Please explain
Sufficient amounts of good quality freshwater available for use	Vital	Important	High-quality water is a vital component in the manufacture of our pharmaceutical, biological and animal health products. It is also an important component for our external manufacturing partners, as well as our overall supply chain. Our company, and our supply chain, is expected to be even more dependent on good quality freshwater in the future as we shift to producing more biologics, which generally require more water than other types of pharmaceutical manufacturing processes.
Sufficient amounts of recycled, brackish and/or produced water available for use	Important	Important	Recycled (cooling) water is used as a primary means for heat removal for many of our manufacturing processes. Many of our sites use cooling towers for this function. It serves an important role in our operations and those of our external manufacturing partners, as well as our overall supply chain. This dependency is expected to be about the same in our direct and indirect operations in the future.

W1.2

(W1.2) Across all your operations, what proportion of the following water aspects are regularly measured and monitored?

	% of sites/facilities/operations	Please explain
Water withdrawals – total volumes	100%	Our company measures and monitors water withdrawal volumes for all of our global manufacturing and research sites, plus our large office buildings in order to track usage volumes. We do this to ensure we maintain a good water balance and to track progress against our water use targets. Each operating site maintains a water balance. Quantities are either metered or determined through engineering estimates. Water withdrawals are required to be entered quarterly by sites into an enterprise data collection and reporting software system as part of our internal Environmental Data Collection (EDC) process. The data is reviewed at the corporate level on a quarterly basis.
Water withdrawals – volumes by source	100%	Our company measures and monitors water withdrawal volumes by source for all of our global manufacturing and research sites, plus our large office buildings in order to track usage volumes. We do this to ensure we maintain a good water balance. Each operating site maintains a water balance. Quantities are either metered or determined through engineering estimates. Water withdrawals are required to be entered quarterly by sites into an enterprise data collection and reporting software system as part of our internal Environmental Data Collection (EDC) process. The data is reviewed at the corporate level on a quarterly basis.
Water withdrawals quality	26-50	Our facilities measure withdrawal quality where necessary in our operations. Typically, a site will not measure water quality coming from municipal sources.
Water discharges – total volumes	100%	Our company measures and monitors water discharge volumes for all of our global manufacturing and research sites, plus our large office buildings in order to track usage volumes. We do this to

		<p>ensure we maintain a good water balance. Each operating site maintains a water balance. Quantities are either metered or determined through engineering estimates. Water discharges are categorized as water discharged to surface water, water discharged to external treatment facility or discharge sent by truck to off-site treatment. Water discharges are required to be entered quarterly by sites into an enterprise data collection and reporting software system as part of our internal Environmental Data Collection (EDC) process. The data is reviewed at the corporate level on a quarterly basis.</p>
Water discharges – volumes by destination	100%	<p>Our company measures and monitors water discharge volumes by destination for all of our global manufacturing and research sites, plus our large office buildings in order to track usage volumes. We do this to ensure we maintain a good water balance. Each operating site maintains a water balance. Quantities are either metered or determined through engineering estimates. Water discharges are categorized as water discharged to surface water, water discharged to external treatment facility or discharge sent by truck to off-site treatment. Water discharges are required to be entered quarterly by sites into an enterprise data collection and reporting software system as part of our internal Environmental Data Collection (EDC) process. The data is reviewed at the corporate level on a quarterly basis.</p>
Water discharges – volumes by treatment method	100%	<p>Our company measures and monitors water discharge volumes by treatment method for all of our global manufacturing and research sites, plus our large office buildings in order to track usage volumes. This data is maintained at the operating sites and is monitored on an ongoing basis.</p>
Water discharge quality – by standard effluent parameters	76-99	<p>A subset of our facilities measure and monitor water discharge quality data as required by regulations.</p>

Water discharge quality – temperature	51-75	Discharge temperature is only measured at a subset of sites where it is deemed critical to monitor or if required by permit or regulation.
Water consumption – total volume	100%	Our company measures and monitors water consumption volumes for all of our global manufacturing and research sites, plus our large office buildings in order to track usage volumes. We do this to ensure we maintain a good water balance. Each operating site maintains a water balance identifying water consumption and recycle rates. Quantities are either metered or determined through engineering estimates. Water consumption is required to be entered quarterly by sites into an enterprise data collection and reporting software system as part of our internal Environmental Data Collection (EDC) process. The data is reviewed at the corporate level on a quarterly basis.
Water recycled/reused	100%	Our company measures and monitors water recycled/reused for all of our global manufacturing and research sites, plus our large office buildings in order to track usage volumes. We do this to ensure we maintain a good water balance. Each operating site maintains a water balance identifying water consumption and recycle rates. Quantities are either metered or determined through engineering estimates. Water recycled/reused is required to be entered quarterly by sites into an enterprise data collection and reporting software system as part of our internal Environmental Data Collection (EDC) process. The data is reviewed at the corporate level on a quarterly basis.
The provision of fully-functioning, safely managed WASH services to all workers	100%	Our facilities provide fully-functioning WASH services to all workers as these services are deemed critical to the health of employees, the quality of our products, and the integrity of our operations. Water withdrawals and discharges used for WASH services are

		included in the overall totals collected at each site.
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W1.2b

(W1.2b) What are the total volumes of water withdrawn, discharged, and consumed across all your operations, and how do these volumes compare to the previous reporting year?

	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Total withdrawals	20,320	About the same	Our reported water withdrawals includes the amount that is measured and monitored (i.e. all of our global manufacturing and research sites, plus our large office buildings): 19,627 megaliters; and the estimated amount withdrawn from our small offices and leased facilities, which is calculated based on employee headcount data and applying standard assumptions for water use and discharge: 684 megaliters. "Comparison with previous reporting year" is rated as "about the same" if it is within 10% of the prior year. It is rated as "lower/higher" if it is different by 11-20% . It is rated as "much lower/much higher" if it is different by 20% or more. We expect that our water withdrawals will increase due to growth in our internal manufacturing network in the coming years. We are committed to maintaining our global water use/withdrawals at or below 2015 levels through 2025. We achieved a 15% reduction of water withdrawals in 2019 versus the baseline year of 2015.
Total discharges	17,638	About the same	Our reported water discharge includes the amount that is measured and monitored (i.e. all of our global manufacturing and research sites, plus our large office buildings): 16,954 megaliters; and the estimated amount discharged from our small offices and leased facilities, which is calculated based on employee headcount data and applying standard assumptions for water use and discharge: 684 megaliters. "Comparison with previous reporting year" is rated as "about the same" if it is within 10% of the prior year. It is rated as

			"lower/higher" if it is different by 11-20% . It is rated as "much lower/much higher" if it is different by 20% or more. We expect that our water discharge will increase due to growth in our internal manufacturing network in the coming years.
Total consumption	4,483	About the same	Our reported water consumption includes the amount that is measured and monitored (i.e. all of our global manufacturing and research sites, plus our large office buildings). We do not estimate consumption at our small offices and leased facilities as it is deemed to be negligible. "Comparison with previous reporting year" is rated as "about the same" if it is within 10% of the prior year. It is rated as "lower/higher" if it is different by 11-20% . It is rated as "much lower/much higher" if it is different by 20% or more. We expect that our water consumption will increase due to growth in our internal manufacturing network in the coming years.

W1.2d

(W1.2d) Indicate whether water is withdrawn from areas with water stress and provide the proportion.

	Withdrawals are from areas with water stress	% withdrawn from areas with water stress	Comparison with previous reporting year	Identification tool	Please explain
Row 1	Yes	11-25	Much lower	WRI Aqueduct	We use the World Resources Institute's (WRI's) Aqueduct water-risk-assessment tool to measure and map our water risks across the enterprise globally (i.e. all of our global manufacturing and research sites, plus our large office buildings). Water withdrawn from areas rated by WRI Aqueduct Water Risk Atlas as being in areas of "High" or "Extremely High" Baseline Water stress are considered being from stressed

				<p>areas. "Comparison with previous reporting year" is rated as "about the same" if it is within 10% of the prior year. It is rated as "lower/higher" if it is different by 11-20% . It is rated as "much lower/much higher" if it is different by 20% or more.</p> <p>A new version of the Aqueduct tool (version 3.0) was launched in August 2019. The following upgrades to the tool have resulted in changes to the baseline water stress rating and scoring:</p> <ul style="list-style-type: none"> • Inclusion of both surface and groundwater in the model • Modifications to the scoring scale • Changes to the indicators • Hydrological model underpinning the indicators • Hydrological sub-basins <p>(Reference: World Resource Institute: The New Aqueduct Water Risk Atlas: What's New and Why Does It Matter to You)</p> <p>In 2019 the percent of water withdrawals in areas of water stress that rated as "extremely high" or high" was 19%. The reduction from 33% in 2018 is directly related to the changes in the tool identified above. We are also assessing water risk status of sites brought into the network through recent acquisitions.</p>
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W1.2h

(W1.2h) Provide total water withdrawal data by source.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water, including rainwater, water from wetlands, rivers, and lakes	Relevant	2,653	Higher	<p>Our company measures and monitors all of the fresh surface water we use as inputs to our processes as well as for heating/cooling and other utilities. "Comparison with previous reporting year" is rated as "about the same" if it is within 10% of the prior year. It is rated as "lower/higher" if it is different by 11-20% . It is rated as "much lower/much higher" if it is different by 20% or more. Internal manufacturing is projected to grow in coming years which may increase withdrawals.</p> <p>Water withdrawal is variable based on manufacturing and research activities year to year.</p>
Brackish surface water/Seawater	Not relevant			We do not utilize brackish surface water/seawater and do not expect to in the future.
Groundwater – renewable	Relevant	10,406	About the same	<p>Our company measures and monitors all of the renewable groundwater we use as inputs to our processes as well as for heating/cooling and other utilities. "Comparison with previous reporting year" is rated as "about the same" if it is within 10% of the prior year. It is rated as "lower/higher" if it is different by 11-20% . It is rated as</p>

				"much lower/much higher" if it is different by 20% or more. Internal manufacturing is projected to grow in coming years which may increase withdrawals.
Groundwater – non-renewable	Not relevant			We do not utilize non-renewable groundwater and do not expect to in the future.
Produced/Entrained water	Not relevant			We do not utilize produced water and do not expect to in the future.
Third party sources	Relevant	7,271	About the same	Our company measures and monitors all of the third party water we use as inputs to our processes as well as for heating/cooling and other utilities. "Comparison with previous reporting year" is rated as "about the same" if it is within 10% of the prior year. It is rated as "lower/higher" if it is different by 11-20% . It is rated as "much lower/much higher" if it is different by 20% or more. Our reported water from third party sources includes the amount that is measured and monitored (i.e. all of our global manufacturing and research sites, plus our large office buildings): 6,577 megaliters; and the estimated amount withdrawn from our small offices and leased facilities, which is calculated based on employee headcount data and applying standard assumptions for water use and discharge: 684 megaliters. Internal manufacturing is projected to

				grow in coming years which may increase overall withdrawals.
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W1.2i

(W1.2i) Provide total water discharge data by destination.

	Relevance	Volume (megaliters/year)	Comparison with previous reporting year	Please explain
Fresh surface water	Relevant	10,895	About the same	Our company measures and monitors all of our discharges to fresh surface water. "Comparison with previous reporting year" is rated as "about the same" if it is within 10% of the prior year. It is rated as "lower/higher" if it is different by 11-20% . It is rated as "much lower/much higher" if it is different by 20% or more. Internal manufacturing is projected to grow in coming years which may increase discharges.
Brackish surface water/seawater	Not relevant			We do not discharge to brackish surface water/seawater and do not expect to in the future.
Groundwater	Not relevant			We do not discharge to groundwater and do not expect to in the future.
Third-party destinations	Relevant	6,743	About the same	Our company measures and monitors all of our discharges to third-party destinations, such as municipal treatment plants. "Comparison with previous reporting year" is rated as "about the same" if it is within 10% of the prior year. It is rated as "lower/higher" if it is different by 11-20% . It is rated as "much lower/much higher" if it is different by 20% or more. Our reported water discharged to third

				<p>party destinations includes the amount that is measured and monitored (i.e. all of our global manufacturing and research sites, plus our large office buildings): 6,059 megaliters; and the estimated amount discharged from our small offices and leased facilities, which is calculated based on employee headcount data and applying standard assumptions for water use and discharge: 684 megaliters. Internal manufacturing is projected to grow in coming years which may increase discharges.</p>
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W1.4

(W1.4) Do you engage with your value chain on water-related issues?

Yes, our suppliers

Yes, our customers or other value chain partners

W1.4a

(W1.4a) What proportion of suppliers do you request to report on their water use, risks and/or management information and what proportion of your procurement spend does this represent?

Row 1

% of suppliers by number

Less than 1%

% of total procurement spend

1-25

Rationale for this coverage

Our company had a 2018 target to collect water use data from at least 90% of our strategic suppliers with the highest environmental impacts, which was achieved in 2018 with a response rate of 93%. We continued to collect this data from the same type of suppliers as a best practice in 2019. As members of the Pharmaceutical Supply Chain Initiative (PSCI), we are working with other pharmaceutical companies to obtain water use data from our suppliers. While we have many thousands of suppliers, we used our previously modelled input/output spend analysis data to identify suppliers with the biggest impact. We surveyed over 100 suppliers in 2019, which covers ~14% of our procurement spend, even though this subset makes up less than 1% of our total number

of suppliers. In our Supplier Code of Conduct we request that suppliers conserve natural resources and engage in activities aimed at reducing water usage. We also ask that they have systems in place to quantify the amount of water used.

Impact of the engagement and measures of success

Water data was collected from 96% of our high-impact strategic suppliers in 2019. Approximately 39% of our strategic suppliers have set public or internal water use reduction goals. We utilize the results to identify opportunities for supplier engagement and development around improved water stewardship.

Comment

W1.4b

(W1.4b) Provide details of any other water-related supplier engagement activity.

Type of engagement

Onboarding & compliance

Details of engagement

Other, please specify

Collecting water data from new suppliers

% of suppliers by number

1-25

% of total procurement spend

1-25

Rationale for the coverage of your engagement

Our company is requesting that new suppliers complete a self-assessment questionnaire to determine if they track their water use, as it is a key input to our manufacturing processes and in the materials we use.

Impact of the engagement and measures of success

New suppliers are also asked if they have a water reduction goal in place. This information is being collected in order to determine where potential water risks may be in our supply chain in order to determine potential next steps in our overall water management strategy. If a key supplier's practice is deemed inefficient further engagement is pursued.

Comment

W1.4c

(W1.4c) What is your organization’s rationale and strategy for prioritizing engagements with customers or other partners in its value chain?

Our company contributes to efforts surrounding water availability and quality in the areas in which we operate, consistent with being a signatory to the UN CEO Water Mandate. These efforts impact local communities, employees, as well as customers in these areas. They also work towards improving water availability and quality for our operations over the long term. Positive partner, community and employee feedback is an important indicator as to the success of this program. Since 2016 we have donated \$100,000 annual to a non-profit organization for a water project that improves water quality and/or quantity and enable collective action and community engagement in areas close to the facilities we operate. We encourage local employee involvement in the projects. In 2019, we supported the Nature Conservancy’s Mantiqueira Restoration Fund with a \$100,000 donation. The Fund was created to build a solid case for how reforestation can improve water security and tackle climate change. This project will conduct forest restoration to a portion of the Mantiqueira to improve water security for the region, which includes our Cruzeiro, Brazil facility. For each project, an annual progress report is provided to us, summarizing the status and achievements of the project and its objectives.

W2. Business impacts

W2.1

(W2.1) Has your organization experienced any detrimental water-related impacts?

No

W2.2

(W2.2) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations?

Yes, fines, enforcement orders or other penalties but none that are considered as significant

W2.2a

(W2.2a) Provide the total number and financial value of all water-related fines.

Row 1

Total number of fines

1

Total value of fines

17,290

% of total facilities/operations associated

1

Number of fines compared to previous reporting year

Higher

Comment

We received fines for three storm water releases that occurred in 2018. We do not believe these events resulted in any adverse effect to the water or caused endangerment to public health. The cause of all three releases has been resolved.

W3. Procedures

W3.3

(W3.3) Does your organization undertake a water-related risk assessment?

Yes, water-related risks are assessed

W3.3a

(W3.3a) Select the options that best describe your procedures for identifying and assessing water-related risks.

Direct operations

Coverage

Full

Risk assessment procedure

Water risks are assessed as a standalone issue

Frequency of assessment

Annually

How far into the future are risks considered?

3 to 6 years

Type of tools and methods used

Tools on the market

Tools and methods used

WRI Aqueduct

WWF Water Risk Filter

Comment

All of our facilities are assessed for water risk. We currently use the WRI Aqueduct Water Risk Atlas as our primary tool to assess internal risk. Our primary focus is on the Aqueduct water risk indicator "Baseline Water Stress." We also use the WWF Water

Risk Filter as a secondary source to provide water stress data for all of our internal sites.

Supply chain

Coverage

Partial

Risk assessment procedure

Water risks are assessed as a standalone issue

Frequency of assessment

Annually

How far into the future are risks considered?

3 to 6 years

Type of tools and methods used

Tools on the market

Tools and methods used

WRI Aqueduct

WWF Water Risk Filter

Comment

Key external manufacturers and suppliers are assessed for risk to identify areas of concern and potential engagement opportunities. We currently use the WRI Aqueduct Water Risk Atlas as our primary tool to assess supply chain risk. Our primary focus is on the Aqueduct water risk indicator "Baseline Water Stress."

Other stages of the value chain

Coverage

None

Comment

W3.3b

(W3.3b) Which of the following contextual issues are considered in your organization's water-related risk assessments?

	Relevance & inclusion	Please explain
Water availability at a basin/catchment level	Relevant, always included	A sufficient amount of water is critical to the manufacture of pharmaceuticals. This is also true for our suppliers, who provide many of the raw materials and precursors for our products. Current and emerging water availability issues are

		included in our assessment. The WRI Aqueduct Water Atlas and the WWF Water Risk Filter are used for this assessment.
Water quality at a basin/catchment level	Relevant, always included	High quality water is critical to the manufacture of pharmaceuticals, and it often needs to be purified further to meet the quality standards expected for our products. Water discharge quality is also relevant and our company considers compliance with all local regulations a foundational aspect of doing business. Continued compliance with these regulations is monitored through our internal audit program as well as self-assessment by site management. Attention to water quality for withdrawals and discharge also applies to our suppliers, who provide many of the raw materials and precursors for our products. Current and emerging water availability issues are included in our assessment. The WRI Aqueduct Water Atlas and the WWF Water Risk Filter are used for this assessment.
Stakeholder conflicts concerning water resources at a basin/catchment level	Relevant, always included	Access to high quality water is crucial to the manufacture of our products, therefore any stakeholder conflict that could jeopardize supply is taken seriously. Existing or potential stakeholder issues are considered when performing facility level risk assessments. We are currently not experiencing any stakeholder conflicts.
Implications of water on your key commodities/raw materials	Relevant, always included	Lack of high quality water can potentially impact the availability of key commodities and raw materials, so it is relevant to our internal and supply chain risk assessment. Both existing and emerging issues are considered.
Water-related regulatory frameworks	Relevant, always included	Water-related regulatory frameworks have the potential to impact access to high quality water, so they are factored into our internal and supply chain risk assessments. We perform regulatory surveillance to ensure we understand the impacts on our operations and our sites. Both existing and emerging regulatory frameworks are considered. The WRI Aqueduct Water Atlas and the WWF Water Risk Filter are used for this assessment.
Status of ecosystems and habitats	Relevant, always included	Our company seeks to minimize any impact on local ecosystems and habitats. Existing or potential issues related to protected habitat and/or endangered species are considered when performing Merck-owned facility level risk assessments. Both existing and emerging issues are considered.
Access to fully-functioning, safely managed WASH	Relevant, always included	Access to WASH services is crucial to the manufacture of high quality pharmaceuticals, in our facilities and in those of our suppliers. Our company considers access to water

services for all employees		supply, adequate sanitation and hygiene when performing facility level risk assessments. Both existing and emerging issues are considered.
Other contextual issues, please specify	Not considered	Not considered

W3.3c

(W3.3c) Which of the following stakeholders are considered in your organization’s water-related risk assessments?

	Relevance & inclusion	Please explain
Customers	Relevant, always included	Impact to customers is a core consideration of our risk assessment process. Water risk is indirectly captured via patient access to medicines and our ability to reliably supply our customers.
Employees	Relevant, always included	Employees are considered in our risk assessment process via employee health and safety. Our employees live in the areas in which we operate therefore attention to water risk is warranted to ensure a healthy workforce.
Investors	Relevant, always included	Investor impact is considered in our risk assessment process. Investor expectations are rising with respect to how companies manage their approach to limited natural resources, like water. Access to water is included in our materiality assessment and goals are set to manage our use and risk.
Local communities	Relevant, always included	Our company strives to be a good corporate citizen in the areas in which we operate. This ensures our licence to operate. Local community issues are considered when performing facility level risk assessments.
NGOs	Relevant, always included	Our company is currently using tools from NGOs, such as the WRI Aqueduct Water Risk Atlas and the WWF Water Risk Filter, to assess water risk for internal sites as well as select external manufacturers and key suppliers. We interact with these stakeholders at the water-related conferences we attend, and include their feedback in our approach to managing water risk.
Other water users at a basin/catchment level	Relevant, not included	Our company will engage with other water users at a local level if and when water risks for shared resources develop. We will also engage with other local water users as needed as we pursue our new water risk commitment to develop water management plans at our facilities in high water risk locations.

Regulators	Relevant, always included	Our company considers compliance with all local regulations a foundational aspect of doing business. Continued compliance with these regulations is monitored through our internal audit program as well as self-assessment by site management.
River basin management authorities	Relevant, always included	Our company follows all requirements established by river basins management authorities. In addition, we will engage with river basin management authorities if and when water risks for shared resources develop.
Statutory special interest groups at a local level	Not relevant, included	Our company does not operate in areas governed by statutory special interest groups.
Suppliers	Relevant, sometimes included	The impact of water-related risk on our company's operations and our key suppliers is considered as part of our risk management programs.
Water utilities at a local level	Relevant, always included	We evaluate water supply and wastewater treatment capacity and capability of local municipalities and service providers servicing our sites as part of facility risk assessment.
Other stakeholder, please specify	Not considered	Not considered

W3.3d

(W3.3d) Describe your organization’s process for identifying, assessing, and responding to water-related risks within your direct operations and other stages of your value chain.

Our company uses an Enterprise Risk Management (ERM) process whereby risks are identified by the facilities, corporate functions and business operations. The risks are assessed both quantitatively and qualitatively. Prioritization is based on potential impact and likelihood of occurrence. In this manner, the company's risks are brought together across all operations and the highest risks move forward and are identified in our Annual Report (Form 10-K), section 1.A. Risk Factors. These risks are included as part of the company's ERM process. We use the WRI Aqueduct Water Risk Atlas tool (on an annual basis), a regulatory surveillance process and internal knowledge to identify both facility specific and corporate level risks. We also use the WWF Water Risk Filter to augment our data set. We use the identified tools because they are considered to be the leading ones for water risk assessment based on the conversations we have had with stakeholders. Water withdrawals, discharges and consumption are required to be entered quarterly by sites into an enterprise data collection and reporting software package as part of our Environmental Data Collection (EDC) process. The data is reviewed on a quarterly basis to allow us to see if water use trends are changing so they can be addressed in a timely manner.

W4. Risks and opportunities

W4.1

(W4.1) Have you identified any inherent water-related risks with the potential to have a substantive financial or strategic impact on your business?

No

W4.1a

(W4.1a) How does your organization define substantive financial or strategic impact on your business?

Our annual report (form 10-K) defines "substantive" risks as those that could materially adversely impact the Company's business, financial condition, results of operations or prospects. Risks that rise to this level are captured and discussed in our 10-K in section 1.A, Risk Factors. For more information see <http://www.merck.com/investors/>

W4.2b

(W4.2b) Why does your organization not consider itself exposed to water risks in its direct operations with the potential to have a substantive financial or strategic impact?

	Primary reason	Please explain
Row 1	Risks exist, but no substantive impact anticipated	Although we do operate facilities in areas of high water stress, as determined by the WRI Aqueduct Water Risk tool, supply interruptions at these sites has not been deemed to have a substantive financial or strategic impact on the company. We are currently assessing sites located in high water stress areas more fully, and have a goal to develop water conservation plans at sites where they are needed.

W4.2c

(W4.2c) Why does your organization not consider itself exposed to water risks in its value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact?

	Primary reason	Please explain
Row 1	Risks exist, but no substantive impact anticipated	Although we have identified suppliers that operate facilities in areas of high water stress, as determined by the WRI Aqueduct Water Risk tool, supply interruptions at these sites has not been deemed to have a substantive financial or strategic impact on the company. Our company is currently assessing information provided by suppliers located in high water stress

		areas, and has a long-term goal to engage with our key suppliers to set water use reduction targets.
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W4.3

(W4.3) Have you identified any water-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes, we have identified opportunities, and some/all are being realized

W4.3a

(W4.3a) Provide details of opportunities currently being realized that could have a substantive financial or strategic impact on your business.

Type of opportunity

Efficiency

Primary water-related opportunity

Improved water efficiency in operations

Company-specific description & strategy to realize opportunity

We have used the WRI Aqueduct Water Risk Filter to assess baseline water stress at our facilities and determined that some of our facilities are located in areas of high water stress, where improved water efficiency could be especially beneficial. We are investigating key sites in these areas further and have set a goal to develop water management plans, where needed, by 2020.

Estimated timeframe for realization

Current - up to 1 year

Magnitude of potential financial impact

Unknown

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact

This effort is being undertaken to help avoid supply interruptions due to restrictions on water use or poor water quality. Although the degree of the potential financial impact is not known at this time, it could be substantive for certain production and/or manufacturing locations.

W6. Governance

W6.1

(W6.1) Does your organization have a water policy?

Yes, we have a documented water policy that is publicly available

W6.1a

(W6.1a) Select the options that best describe the scope and content of your water policy.

	Scope	Content	Please explain
Row 1	Company-wide	Description of business dependency on water Description of business impact on water Description of water-related performance standards for direct operations Description of water-related standards for procurement Reference to international standards and widely-recognized water initiatives Company water targets and goals Commitment to align with public policy initiatives, such as the SDGs Commitments beyond regulatory compliance Commitment to water-related innovation	Our water policy was updated and released in 2019. Water is critical to the health of people, the planet and our business. We are committed to achieving sustainable water management within our operations and our supply chain, and through our core business, partnerships, advocacy and employees, to reduce the impact of water-borne illness globally as part of our overall efforts to improve global health. We recognize that access to WASH services is crucial to the manufacture of high quality pharmaceuticals, in our facilities and in those of our suppliers but it is not addressed in our currently policy.

	<p>Commitment to stakeholder awareness and education</p> <p>Commitment to water stewardship and/or collective action</p> <p>Acknowledgement of the human right to water and sanitation</p> <p>Recognition of environmental linkages, for example, due to climate change</p>	
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W6.2

(W6.2) Is there board level oversight of water-related issues within your organization?

No

W6.2c

(W6.2c) Why is there no board-level oversight of water-related issues and what are your plans to change this in the future?

	Primary reason	Board level oversight of water-related issues will be introduced in the next two years	Please explain
Row 1	Based on our water risk assessments (as described in W3.3d) there have not been any water related issues identified that have necessitated review by the board.	No	There have been no water-related issues that have risen to board-level priority thus far. Board-level oversight may be required if water scarcity grows in the areas in which we operate or if potential flooding threatens our operations and/or supply chain.

W6.3

(W6.3) Provide the highest management-level position(s) or committee(s) with responsibility for water-related issues (do not include the names of individuals).

Name of the position(s) and/or committee(s)

Other, please specify

Environmental, Health, & Safety Council

Responsibility

Both assessing and managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues

As important matters arise

Please explain

The EHS Council is composed of senior-level executives representing all business units, and is responsible for overall EHS governance, as well as for leading and driving enterprise-wide excellence in EHS management and performance. In 2019 the EHS Council formally met four times, with additional off-cycle communications as needed.

The Council’s responsibilities include:

- Establishing EHS strategy, policy and business risk mitigation controls
- Ensuring cross-divisional engagement in the design and implementation of EHS business processes
- Sponsoring and implementing a sustainability strategy
- Monitoring the EHS performance of the Company and establish continuous improvement targets
- Enhancing visibility and transparency of EHS risks, processes and issues

Outcomes from the council meetings are reported to company’s Board of Directors and Executive Committee regarding progress on goals, objectives and metrics, as well as other material issues.

W6.4

(W6.4) Do you provide incentives to C-suite employees or board members for the management of water-related issues?

	Provide incentives for management of water-related issues	Comment
Row 1	No, and we do not plan to introduce them in the next two years	

W6.5

(W6.5) Do you engage in activities that could either directly or indirectly influence public policy on water through any of the following?

- Yes, direct engagement with policy makers
- Yes, trade associations

W6.5a

(W6.5a) What processes do you have in place to ensure that all of your direct and indirect activities seeking to influence policy are consistent with your water policy/water commitments?

All direct and indirect activities surrounding water-related policy, such as around pharmaceuticals in the environment (PIE), are reviewed by members of the EHS Council, who are aware of our water policy and commitments.

W6.6

(W6.6) Did your organization include information about its response to water-related risks in its most recent mainstream financial report?

No, and we have no plans to do so

W7. Business strategy

W7.1

(W7.1) Are water-related issues integrated into any aspects of your long-term strategic business plan, and if so how?

	Are water-related issues integrated?	Please explain
Long-term business objectives	No, water-related issues were not reviewed and there are no plans to do so	There have been no water-related issues thus far that have risen to the level of actual or potential severity that necessitates their inclusion in our long-term (i.e. greater than 5 year) business objective planning.
Strategy for achieving long-term objectives	No, water-related issues were not reviewed and there are no plans to do so	There have been no water-related issues thus far that have risen to the level of actual or potential severity that necessitates their inclusion in our long-term (i.e. greater than 5 year) strategic planning.
Financial planning	No, water-related issues were not reviewed and there are no plans to do so	There have been no water-related issues thus far that have risen to the level of actual or potential severity that necessitates their inclusion in our long-term (i.e. greater than 5 year) financial planning.

W7.2

(W7.2) What is the trend in your organization’s water-related capital expenditure (CAPEX) and operating expenditure (OPEX) for the reporting year, and the anticipated trend for the next reporting year?

Row 1

Water-related CAPEX (+/- % change)

200

Anticipated forward trend for CAPEX (+/- % change)

180

Water-related OPEX (+/- % change)

Anticipated forward trend for OPEX (+/- % change)

Please explain

Our company has recently initiated several substantial capital projects to upgrade water infrastructure in addition to the previously reported capital fund associated with water infrastructure. The additional capital expenditure from these projects will result in an increase in capital expenditure in the next reporting year. Our company continues to invest in water related infrastructure at our operating sites.

W7.3

(W7.3) Does your organization use climate-related scenario analysis to inform its business strategy?

	Use of climate-related scenario analysis	Comment
Row 1	Yes	

W7.3a

(W7.3a) Has your organization identified any water-related outcomes from your climate-related scenario analysis?

Yes

W7.3b

(W7.3b) What water-related outcomes were identified from the use of climate-related scenario analysis, and what was your organization’s response?

	Climate-related scenarios and models applied	Description of possible water-related outcomes	Company response to possible water-related outcomes
Row 1	Other, please specify Internal methodology	Our company is working to understand what is involved in performing a comprehensive climate-related scenario analysis; however, select areas of our business have been subject to a review. Many of the effects of climate change have been analyzed as part of our general risk analysis or have been broken out into smaller studies such as the evaluation of water risk to our plant sites and or our supply chain, and the potential effects of sea level rise on our coastal sites. We have conducted a risk analysis on our	We have upgraded existing facilities in Japan and have built new facilities there as a result of our analysis.

		warehousing operations in our second largest market, Japan. The scenarios included extreme weather events such as flooding and tsunamis.	
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W7.4

(W7.4) Does your company use an internal price on water?

Row 1

Does your company use an internal price on water?

No, but we are currently exploring water valuation practices

Please explain

We are evaluating ways to determine the true cost of water. We are working with consultants and internal stakeholders.

W8. Targets

W8.1

(W8.1) Describe your approach to setting and monitoring water-related targets and/or goals.

	Levels for targets and/or goals	Monitoring at corporate level	Approach to setting and monitoring targets and/or goals
Row 1	Company-wide targets and goals Site/facility specific targets and/or goals Other, please specify Supply Chain	Targets are monitored at the corporate level Goals are monitored at the corporate level	Our aim is to decouple water use from growth and to maintain our global water use at or below 2015 levels. We also have a goal to implement specific water management plans at the site/facility level in areas of elevated water stress. Modelling has shown that the majority of our water footprint is in our supply chain; therefore, we have instituted goals in this area as well.

W8.1a

(W8.1a) Provide details of your water targets that are monitored at the corporate level, and the progress made.

Target reference number

Target 1

Category of target

Water withdrawals

Level

Company-wide

Primary motivation

Water stewardship

Description of target

By 2025, we will maintain global water use at or below 2015 levels to ensure water security

Quantitative metric

% reduction in total water withdrawals

Baseline year

2015

Start year

2016

Target year

2025

% of target achieved

100

Please explain

We have achieved an 15% reduction of water withdrawals in 2019 versus the baseline year of 2015, therefore we are 100% on target.

W8.1b

(W8.1b) Provide details of your water goal(s) that are monitored at the corporate level and the progress made.

Goal

Other, please specify
Manage water use in stressed areas

Level

Site/facility

Motivation

Water stewardship

Description of goal

By 2020, we will develop water conservation plans for our sites in “high water risk” locations. Water stress is localized in nature due the contextual factors encountered there, and so we will develop plans on a site- by-site basis, rather than a corporate one. We expect that achieving this goal will reduce our overall water use and will also reduce risk for individual facilities. We will perform water audits at selected sites with the help of consultants in order to develop tailored plans based on the identified opportunities.

Baseline year

2016

Start year

2016

End year

2020

Progress

Prospective sites for engagement have been identified based on available tools such as the WRI Aqueduct Water Risk Atlas and the WWF Water Risk Filter, along with internal data. In 2019 the water management plan was completed for the Puerto Rico facility. A water risk assessment was performed at our Montes Claros, Brazil facility which will inform the water management plan. Water audits for other sites are planned for 2020. Progress will be measured by the number of sites that have water management plans in place.

Goal

Engagement with suppliers to help them improve water stewardship

Level

Company-wide

Motivation

Water stewardship

Description of goal

By 2018, we will collect water use data from at least 90% of our strategic suppliers with the highest environmental impacts. As stated above, modelling has shown that the majority of our water footprint is in our supply chain; therefore, we have instituted goals in this area. This goal will reduce overall water use and will also reduce risk in our supply chain. We are participating in the Pharmaceutical Supply Chain Initiative (PSCI) with other companies in this effort to get supply chain data.

Baseline year

2016

Start year

2016

End year

2019

Progress

Even though this goal was achieved in 2018, we still find value in collecting the data. Water data was collected from 96% of our high-impact strategic suppliers in 2019.

Goal

Engagement with suppliers to help them improve water stewardship

Level

Company-wide

Motivation

Water stewardship

Description of goal

By 2020, we will engage with those suppliers and request them to identify water use reduction opportunities. As stated above, modelling has shown that the majority of our water footprint is in our supply chain; therefore, we have instituted goals in this area. This goal will reduce overall water use and will also reduce risk in our supply chain.

Baseline year

2016

Start year

2016

End year

2020

Progress

We created and filled a position in our procurement department focused on supplier engagement in 2019. We have begun to interact with shipping and logistic suppliers, business travel partners, waste vendors, packaging design groups and suppliers of single use equipment for manufacturing.

Goal

Engagement with suppliers to help them improve water stewardship

Level

Company-wide

Motivation

Water stewardship

Description of goal

By 2025, at least 90% of our strategic suppliers with the highest environmental impacts will set their own water use reduction targets. As stated above, modelling has shown that the majority of our water footprint is in our supply chain; therefore, we have instituted goals in this area also. This goal will reduce overall water use and will also reduce risk in our supply chain.

Baseline year

2016

Start year

2016

End year

2025

Progress

Approximately 39% of our strategic suppliers have set public or internal water use reduction goals.

W9. Verification

W9.1

(W9.1) Do you verify any other water information reported in your CDP disclosure (not already covered by W5.1a)?

Yes

W9.1a

(W9.1a) Which data points within your CDP disclosure have been verified, and which standards were used?

Disclosure module	Data verified	Verification standard	Please explain
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W1 Current state	Total withdrawals, Total discharges, Withdrawals from third party sources	Other, please specify ISO 14065	WSP conducted a limited assurance review in its capacity as an independent third party in accordance with the ISO 14065 International Standard, Greenhouse gases — Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition.
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W10. Sign off

W-FI

(W-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

W10.1

(W10.1) Provide details for the person that has signed off (approved) your CDP water response.

	Job title	Corresponding job category
Row 1	Vice President, Global Safety and the Environment	EHS manager

W10.2

(W10.2) Please indicate whether your organization agrees for CDP to transfer your publicly disclosed data on your impact and risk response strategies to the CEO Water Mandate's Water Action Hub [applies only to W2.1a (response to impacts), W4.2 and W4.2a (response to risks)].

No

SW. Supply chain module

SW0.1

(SW0.1) What is your organization's annual revenue for the reporting period?

	Annual revenue
Row 1	46,840,000,000

SW0.2

(SW0.2) Do you have an ISIN for your organization that you are willing to share with CDP?

Yes

SW0.2a

(SW0.2a) Please share your ISIN in the table below.

	ISIN country code	ISIN numeric identifier (including single check digit)
Row 1	US	58933Y1055

SW1.1

(SW1.1) Could any of your facilities reported in W5.1 have an impact on a requesting CDP supply chain member?

No, CDP supply chain members do not buy goods or services from facilities listed in W5.1

SW1.2

(SW1.2) Are you able to provide geolocation data for your facilities?

	Are you able to provide geolocation data for your facilities?	Comment
Row 1	No, this is confidential data	

SW2.1

(SW2.1) Please propose any mutually beneficial water-related projects you could collaborate on with specific CDP supply chain members.

Requesting member

California Department of General Services (DGS)

Category of project

Other

Type of project

Other, please specify

None at this time

Motivation

N/A

Estimated timeframe for achieving project

Other, please specify

N/A

Details of project

N/A

Projected outcome

N/A

SW2.2

(SW2.2) Have any water projects been implemented due to CDP supply chain member engagement?

No

SW3.1

(SW3.1) Provide any available water intensity values for your organization's products or services.

Product name

N/A

Water intensity value

0

Numerator: Water aspect

Other, please specify

N/A

Denominator

N/A

Comment

N/A

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission	Are you ready to submit the additional Supply Chain Questions?
I am submitting my response	Investors Customers	Public	Yes, submit Supply Chain Questions now

Please confirm below

I have read and accept the applicable Terms