

Welcome to your CDP Water Security Questionnaire 2021

W0. Introduction

W0.1

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

Albemarle Corporation (NYSE: ALB), headquartered in Charlotte, N.C., is a global specialty chemicals company with leading positions in lithium, bromine and refining catalysts. We think beyond business-as-usual to power the potential of companies in many of the world's largest and most critical industries, such as energy, electronics, and transportation. We actively pursue a sustainable approach to managing our diverse global footprint of world-class resources. In conjunction with our highly experienced and talented global teams, our deep-seated values, and our collaborative customer relationships, we create value-added and performance-based solutions that enable a safer and more sustainable future.

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, 2020	December 31, 2020

W0.3

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

- Australia
- Chile
- China
- Germany
- Japan
- Jordan
- Netherlands
- United States of America

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 financial control is exercised

W0.6

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

No

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	Our chemicals plants use water for many (consecutive) process steps. For instance precipitation, filtration, washing. The suppliers of raw materials typically need fresh water for the same reasons.
Sufficient amounts of recycled, brackish and/or produced water available for use	Important	Important	Our chemical plants use fresh water for cooling; some plants use recycled water in their processing. The suppliers of raw materials typically need fresh water for the same reasons.

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%	We monitor water withdrawal on all sites
Water withdrawals – volumes by source	100%	We monitor water withdrawal on all sites
Water withdrawals quality	Not monitored	
Water discharges – total volumes	76-99	We monitor water discharges on most sites
Water discharges – volumes by destination	76-99	We monitor water discharges on most sites
Water discharges – volumes by treatment method	76-99	We monitor water discharges on most sites
Water discharge quality – by standard effluent parameters	76-99	Monitored on some sites but no overall reporting
Water discharge quality – temperature	51-75	Monitored on some sites but no overall reporting
Water consumption – total volume	100%	We monitor water consumption on all sites
Water recycled/reused	51-75	Monitored on some sites but no overall reporting
The provision of fully-functioning, safely managed WASH services to all workers	76-99	

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	24,400	This is our first year of measurement	Total withdrawals as defined in the SASB standards - RT-CH-140a.1 (1)
Total discharges	11,700	This is our first year of measurement	Total discharge is not equal to "withdrawal minus consumption" because some water evaporates and some water ends up in products
Total consumption	12,700	This is our first year of measurement	Total consumption as defined in the SASB standards - RT-CH-140a.1 (1)

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	This is our first year of measurement	WRI Aqueduct	Percentage of water consumed in regions with High Water Risk (category 3–4): 10% Percentage of water consumed in regions with Extremely High Water Risk (category 4–5) : 11%

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	15,000	This is our first year of measurement	
Brackish surface water/Seawater	Not relevant			
Groundwater – renewable	Not relevant			
Groundwater – non-renewable	Relevant	3,860	This is our first year of measurement	
Produced/Entrained water	Not relevant			
Third party sources	Relevant	4,600	This is our first year of measurement	

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?

No

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?

1 to 3 years

Type of tools and methods used

Enterprise Risk Management

Other

Tools and methods used

COSO Enterprise Risk Management Framework

Internal company methods

National-specific tools or standards

Comment

Several of our production operations are in areas of high or extremely high-water stress, as categorized by the World Resources Institute (WRI) Aqueduct Atlas. Our water consumption is reviewed at GBU portfolio meetings on a quarterly basis, which include GBU leadership and direct reports. In early 2021, the Health, Safety & Environment Committee of our Board of Directors approved a goal to reduce our intensity of freshwater usage by 25% by 2030 in areas of high or extremely high-water risk as defined by the WRI. For Albemarle, this includes our lithium operations in La Negra and the Salar de Atacama, Chile, and our bromine operations (JBC) in Safi, Jordan. Beginning in 2022, we plan to report progress on these targets annually (external) and quarterly (internal).

Supply chain

Coverage

Partial

Risk assessment procedure

Water risks are assessed as a standalone issue

Frequency of assessment

Not defined

How far into the future are risks considered?

Unknown

Type of tools and methods used

Other

Tools and methods used

Internal company methods

Comment

We recognize that water usage is important for our own performance improvement plans, and improvements in the entire value chain. We are setting up internal processes for future reporting.

Other stages of the value chain

Coverage

Partial

Risk assessment procedure

Water risks are assessed as a standalone issue

Frequency of assessment

Not defined

How far into the future are risks considered?

Unknown

Type of tools and methods used

Tools on the market

Tools and methods used

WRI Aqueduct

Comment

We are setting up internal processes for future reporting. We are currently developing Life Cycle Assessment process and procedures with initial focus on Lithium Hydroxide. As process is developed, additional LCA's will be performed on other products.

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?

Yes, only within our direct operations

W4.1b

(W4.1b) What is the total number of facilities exposed to water risks with the potential to have a substantive financial or strategic impact on your business, and what proportion of your company-wide facilities does this represent?

	Total number of facilities exposed to water risk	% company-wide facilities this represents	Comment
Row 1	3	1-25	In 2020, Lithium had 12 production facilities, Bromine had 4 facilities, Catalysts had 9 facilities, plus South Haven and Tyrone, for 27 total production facilities as reported in 10-K filing. Three facilities, Salar de Atacama, Chile; La Negra, Chile; and Safi, Jordan are in areas of high or extremely high-water stress, as categorized by the World Resources Institute (WRI) Aqueduct Atlas.

W4.1c

(W4.1c) By river basin, what is the number and proportion of facilities exposed to water risks that could have a substantive financial or strategic impact on your business, and what is the potential business impact associated with those facilities?

Country/Area & River basin

Chile

Loa

Number of facilities exposed to water risk

2

% company-wide facilities this represents

1-25

% company's total global revenue that could be affected

11-20

Comment

During 2020, Albemarle produced 42,000 MT of LCE (primarily lithium carbonate) from the La Negra/Salar de Atacama facilities.

Country/Area & River basin

Jordan

Dead Sea

Number of facilities exposed to water risk

1

% company-wide facilities this represents

1-25

% company's total global revenue that could be affected

1-10

Comment

Bromine is produced from the Jordan facility.

W4.2

(W4.2) Provide details of identified risks in your direct operations with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.

Country/Area & River basin

Chile

Loa

Type of risk & Primary risk driver

Physical

Increased water scarcity

Primary potential impact

Constraint to growth

Company-specific description

The Salar de Atacama facility is in an area of high or extremely high-water stress, as categorized by the World Resources Institute (WRI) Aqueduct Atlas. Albemarle continues to utilize our extensive water monitoring network in the Salar to ensure our operations are sustainable, measure our freshwater use, and set targets around reduction. Though this monitoring network, we ensure our freshwater use is minimal as we continue to responsibly manage this precious resource. Our fresh water rights make up 0.5%, or less than 24 liters per second (L/s) of the total freshwater rights in the Salar de Atacama basin. Of those rights, we use just nine (9) L/s for our camp, the production of potassium chloride, and rinsing our equipment. If fresh water use was limited, this would have no impact on lithium operations but could limit potassium chloride operations.

Timeframe

4-6 years

Magnitude of potential impact

Low

Likelihood

Unlikely

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

Primary response to risk

Engage with customers

Description of response

Potassium chloride customers would go on product allocation.

Cost of response

0

Explanation of cost of response

Potassium chloride sales contracts do not include monetary damages.

Country/Area & River basin

Chile

Loa

Type of risk & Primary risk driver

Physical

Increased water scarcity

Primary potential impact

Constraint to growth

Company-specific description

The La Negra, Chile facility is in an area of high or extremely high-water stress, as categorized by the World Resources Institute (WRI) Aqueduct Atlas. Albemarle uses water from its own wells and it also buys fresh (continental) water from FCAB. FCAB supplies this continental water from the Chilean mountains (Silala sector). In 2020, Albemarle used about 1.1 million cubic meters of water at the La Negra site, with 400k m3 supplied by its own on-site wells and 720k m3 purchased from FCAB.

Timeframe

4-6 years

Magnitude of potential impact

Low

Likelihood

Unlikely

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure - minimum (currency)

1,750,000

Potential financial impact figure - maximum (currency)

5,200,000

Explanation of financial impact

Based on 2020 figures, assumes CRAMSA project does not go forward and water must be obtained from other sources at higher cost.

Primary response to risk

Secure alternative water supply

Description of response

Investment in CRAMSA to secure up to 1.1 million m3 (100%) of La Negra fresh water requirements.

Cost of response

1,000,000

Explanation of cost of response

CRAMSA plans to construct a seawater desalination plant and pipeline to serve Antofagasta and nearby mining facilities. The investment to help fund the project is expected to secure the required water at a fixed price beginning 2026.

Country/Area & River basin

Jordan
Dead Sea

Type of risk & Primary risk driver

Physical
Increased water scarcity

Primary potential impact

Disruption to sales

Company-specific description

According to the 2019 Aqueduct Water Risk Atlas of the World Resource Institute, Jordan falls within the “extremely high water risk” category. Within this context, water conservation is a top priority in our environmental protection strategy. With our facility located in a water-stressed and water-depletion region, we know how important it is to handle this highly valuable natural resource with minimum impact and disruptions.

Timeframe

1-3 years

Magnitude of potential impact

High

Likelihood

About as likely as not

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

A significant and prolonged interruption in fresh water supply could result in a reduction of our production capacity, and impact supply of products to our customers.

Primary response to risk

Adopt water efficiency, water reuse, recycling and conservation practices

Description of response

As part of our global commitment to water conservation, we have implemented programs to reduce water consumption. We utilize water recycling, and in 2011 implemented a new program which enabled a reduction in freshwater consumption. Our bromine production site in Safi has water management and reduction programs and by applying a process heat integration and by operating at higher concentrations in certain process streams, we managed to reduce freshwater usage at cooling towers. In 2020, the water reused as part of the wastewater treatment was increased. Two investments in innovative reclamation of water from waste streams are slated to be started in 2020 and 2021 and we expect they will lead to further reduction of the water footprint. We monitor the domestic wastewater treatment system, potable water system, recycle water pond (fire water pond), ground water, and brine discharge to the Dead Sea to ensure that our actions do not affect the quality of the water in Jordan.

Cost of response

Explanation of cost of response

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

Albemarle is in the process of expanding the La Negra lithium carbonate production facility from 42,000 MT LCE in 2020 to an expected nameplate capacity of 85,000 MT

LCE per year. The plant expansion includes an investment of approximately \$100M in a thermal evaporator to recover distilled water for return to the plant. The thermal evaporator is expected to supply all water needed for the 40,000 MT LCE/yr expansion and reduce the water intensity by more than 30%.

Estimated timeframe for realization

Current - up to 1 year

Magnitude of potential financial impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

1,000,000

Potential financial impact figure – maximum (currency)

3,000,000

Explanation of financial impact

Based on local cost of water.

W5. Facility-level water accounting

W5.1

(W5.1) For each facility referenced in W4.1c, provide coordinates, water accounting data, and a comparison with the previous reporting year.

Facility reference number

Facility 1

Facility name (optional)

El Salar

Country/Area & River basin

Chile

Loa

Latitude

23.38

Longitude

68.18

Located in area with water stress

Yes

Total water withdrawals at this facility (megaliters/year)

261

Comparison of total withdrawals with previous reporting year

This is our first year of measurement

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes

196

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

65

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

0

Comparison of total discharges with previous reporting year

This is our first year of measurement

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

261.53

Comparison of total consumption with previous reporting year

This is our first year of measurement

Please explain

Facility reference number

Facility 2

Facility name (optional)

La Negra

Country/Area & River basin

Chile

Loa

Latitude

23.45

Longitude

70.18

Located in area with water stress

Yes

Total water withdrawals at this facility (megaliters/year)

955.37

Comparison of total withdrawals with previous reporting year

This is our first year of measurement

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes

729.5

Withdrawals from brackish surface water/seawater

0

Withdrawals from groundwater - renewable

226

Withdrawals from groundwater - non-renewable

0

Withdrawals from produced/entrained water

0

Withdrawals from third party sources

0

Total water discharges at this facility (megaliters/year)

0

Comparison of total discharges with previous reporting year

This is our first year of measurement

Discharges to fresh surface water

0

Discharges to brackish surface water/seawater

0

Discharges to groundwater

0

Discharges to third party destinations

0

Total water consumption at this facility (megaliters/year)

955

Comparison of total consumption with previous reporting year

This is our first year of measurement

Please explain

Facility reference number

Facility 3

Facility name (optional)

Jordan Bromine Company at Safi

Country/Area & River basin

Jordan

Dead Sea

Latitude

31.144175

Longitude

35.524989

Located in area with water stress

Yes

Total water withdrawals at this facility (megaliters/year)

1,378

Comparison of total withdrawals with previous reporting year

Lower

Withdrawals from fresh surface water, including rainwater, water from wetlands, rivers and lakes

1,357

Withdrawals from brackish surface water/seawater

Withdrawals from groundwater - renewable

Withdrawals from groundwater - non-renewable

Withdrawals from produced/entrained water

Withdrawals from third party sources

21

Total water discharges at this facility (megaliters/year)

705

Comparison of total discharges with previous reporting year

This is our first year of measurement

Discharges to fresh surface water

Discharges to brackish surface water/seawater

613

Discharges to groundwater

Discharges to third party destinations

92

Total water consumption at this facility (megaliters/year)

1,378

Comparison of total consumption with previous reporting year

Lower

Please explain

Reduced water consumption per unit of production due to conservation projects resulted in a decrease in total water consumption at the site YoY.

W6. Governance

W6.1

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

No

W6.2

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

Yes

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)

Sustainability committee

Responsibility

Managing water-related risks and opportunities

Frequency of reporting to the board on water-related issues

Quarterly

Please explain

As of 8/3/2021: Sustainability Steering Team includes the Chief Administrative Officer and General Counsel; President, Catalysts; VP HSSE & Operational Excellence; VP, IR & Sustainability; and Chief Operating Officers (Bromine and Lithium). The VP, IR & Sustainability presents on sustainability matters to the Health, Safety & Environment Committee of the Board of Directors quarterly.

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

Chief Financial Officer (CFO)

Responsibility

Assessing water-related risks and opportunities

Frequency of reporting to the board on water-related issues

Annually

Please explain

We are building sustainability risks into our overall enterprise risk management (ERM) process. The CFO presents on ERM to the Audit and Finance Committee of the Board of Directors annually.

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, not currently but we plan to introduce them in the next two years	We are currently evaluating options to include additional sustainability-related incentives including, potentially water-related incentives. Our Annual Incentive Program (AIP) - designed to provide incentives to achieve and rewards for achieving Albemarle's annual goals and objectives—includes a Stewardship metric. Under the Stewardship metric are performance objectives related to health, safety, and environmental (HSE) performance, such as occupational safety, process safety, and environmental responsibility. The Executive Compensation Committee of the Board of Directors determines performance goals under the AIP annually to ensure our executive officers execute on short-term financial and strategic initiatives that drive our business strategy and long-term shareholder value. ue.

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?	Long-term time horizon (years)	Please explain
Long-term business objectives	Yes, water-related issues are integrated	5-10	Water is integrated in long term business plans for business units / locations with high water risk.
Strategy for achieving long-term objectives	Yes, water-related issues are integrated	5-10	Water-related issues are integrated in long term business strategy for business units / locations with high water risk.
Financial planning	Yes, water-related issues are integrated	5-10	Water-related investments are integrated in the financial planning.

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	Targets are monitored at the corporate level	Albemarle focuses on what matters most. We have set a goal to reduce the intensity of freshwater usage by 25% in operations located in areas of high and extremely high water risk. This applies to our Chilean and Jordanian operations.

W8.1a

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

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	SCOTT TOZIER Executive Vice President & Chief Financial Officer	Chief Financial Officer (CFO)