



MEMORANDUM

Date: December 8, 2022

To: The Honorable Chair and Members
Pima County Board of Supervisors

From: Jan Leshner 
County Administrator

Re: **Additional Information on Water Usage Related to American Battery Factory**

During the December 6, 2022 discussion on the lease-purchase agreement for American Battery Factory there were questions from Board members regarding water usage. American Battery Factory CEO and President Paul Charles addressed the topic of the amount of water used by indicating the daily usage equated to eight standard residential swimming pools. This response is consistent with prior information I sent to the Board indicating water use was estimated at 150,000 gallons per day (GDP).

The day prior to the Board meeting, Supervisor Grijalva requested that staff provide her information to help provide context to the amount of water use. The information included in this memorandum is a summary of the information provided.

For reference, 100,000 gallons is similar to approximately five residential swimming pools. An Olympic size pool is 660,000 gallons. Another example is 100,000 gallons would be similar to 20 full size tanker trucks.

For further comparison, the following table shows other prospect company inquiries we have received through the Arizona Commerce Authority. Some of these required well over a million gallons per day (MGD).

Project Name	Industry	Acreage	Water Use	Capital Expenditure
Cygnus	Supplier to EV, Solar and Semiconductor Manufacture	50-200	Ph1 – 2.0MGD, Full Build – 6.0MGD	\$1.1B
Two Step	Semiconductor/Wafer Manufacture	65	4.65MGD	\$7.5B
Gunny	Semiconductor R&D + Manufacture	65	2.5 MGD	\$1.5B
Edison	Advanced Technology, Substrate and Packaging Manufacture	20	Phase 1 – 300K GPD, Full Build – 1.8 MGD	\$600M

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Project Name	Industry	Acreage	Water Use	Capital Expenditure
New Wave	Green Industrial Processing	100	Phase 1 – 350K GPD. Full Build - 1.4 MGD	\$170M
Blue Sky	Hydrogen Production/Manufacture	30	1.1 MGD	\$1B
Nebula	Semiconductor Manufacture	40	750K GPD	\$500M
Flag	Battery Manufacture	250 +	135K GPD	\$1.2B
Luna	Semiconductor Testing, Coating, Packaging	20	100K GPD	\$600M
Spot	Healthcare/Vaccine Manufacture	2-5	4,000 GPD	\$30M

This information is solely illustrative of the range of water usage of these prospects. None of the projects identified are currently operating in Pima County. More generally, the highest water intensive industries nationally are:

- Agriculture
- Apparel
- Beverages
- Biotech/pharmaceuticals
- Electric Power generation
- Forest products/paper mills
- High Tech (including semiconductor manufacturing)
- Metals/Mining

[Here](#) is a link to similar information on industrial water use from the EPA. Additionally, industrial water use in Arizona, as [reported](#) by Arizona Department of Water Resources (ADWR), represented 6 percent of water usage in 2019.

The water provider for the ABF project is Tucson Water. Attached is a fact sheet on their water supply and groundwater management.

As another means for comparison, here is information the top ten (10) wastewater dischargers in Pima County for FY 2022 by annual volume in gallons:

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FISCAL YEAR	NAME	CONSUMPTION VOLUME (GAL.)
FY 2022	ARIZONA STATE PRISON TUCSON	389,461,586.36
FY 2022	DAVIS MONTHAN AIR FORCE BASE	206,731,207.76
FY 2022	U OF A FACILITIES MGMT	203,458,154.24
FY 2022	TUSD #1	113,815,575.28
FY 2022	H WILSON SUNDT GENERATING STATION	84,318,322.44
FY 2022	UNITED STATES PENITENTIARY	76,548,509.84
FY 2022	TMC HEALTH CARE	64,950,650.16
FY 2022	MISTER CAR WASH	60,866,592.60
FY 2022	FARIBAULT FOODS INC	59,454,338.68
FY 2022	BANNER HEALTH	50,698,183.36

These are the amounts discharged into the sewer, which may be less than the amount used. ABF discharges at full buildout is 25,000 gallons per day, which over 365 days calculates to 9,125,000 annually.

JKL/anc

Attachment

- c: Carmine DeBonis, Jr., Deputy County Administrator
- Francisco García, MD, MPH, Deputy County Administrator & Chief Medical Officer
- Steve Holmes, Deputy County Administrator
- Heath Vescovi-Chiordi, Director, Economic Development Department
- Melissa Manriquez, Clerk of the Board of Supervisors

Water Management in Arizona

Groundwater Management Act, Arizona Department of Water Resources & Assured Water Supply Program

Groundwater use in Arizona is governed by the 1980 Groundwater Management Act (GMA). The law established the Arizona Department of Water Resources (ADWR) to implement and monitor compliance with the GMA. The law also established Active Management Areas (AMAs) in parts of the state experiencing significant groundwater overdraft. Management plans were developed for each AMA which include limits on groundwater withdrawals.

The 1980 GMA required the development of an Assured Water Supply (AWS) program. The AWS program requires that new municipal growth in the AMAs be based on a 100-year supply of legally, physically, and continuously available water that meets water quality standards. Before a designation is issued, an applicant must demonstrate to ADWR that they have sufficient water supplies to meet anticipated demand for the next 100 years. They must also demonstrate financial capability to deliver that water to customers. Designations of Assured Water Supply are renewed at least every 10 years for the following 100-year period. The City of Tucson lies within the Tucson AMA and is required to have a designation of AWS.

Tucson's Designation of Assured Water Supply

Tucson has had a designation of Assured Water Supply continuously since 1997. Tucson's current designation lists available water supplies of 182,852 acre-feet per year which exceeds Tucson's 2024 annual estimated water demand of 155,346 acre-feet per year. Available water supplies in the current designation include:

- 144,191 acre-feet per year of Colorado River water
- 12,538 acre-feet per year of allowable groundwater
- 6,978 acre-feet per year of storage and recovery of effluent
- Other supplies including membership in the Central Arizona Groundwater Replenishment District (CAGR) and incidental recharge.

Additionally, through an extensive managed aquifer recharge program, Tucson has stored over 500,000 acre-feet of long-term storage credits underground for future use.