Fact Briefing:

California State's Own Data Reveals Consumer Plastics are not Recyclable and are Being Exported Illegally

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Imported Contaminated Plastic Waste Bale in Malaysa (Credit: Basel Action Network)

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1. Summary Findings and Recommendations

In 2021, California passed two laws related to plastic waste that were intended to protect California consumers from false recyclability labels (SB343)[1] and foreign countries from receiving contaminated plastic waste bales from California (AB881).[2]

Under SB343, the California Department of Resources, Recycling, and Recovery (CalRecycle) was required to publish data about the types of materials and forms recycled in California by January 1, 2024. On December 28, 2023, CalRecycle released the SB343 Material Characterization Study Preliminary Findings (SB343 Report).[3]

Comprehensive, detailed assessments of the California SB343 and AB881 legal requirements, the material characterizations and other information stated in the SB343 Report, and California's plastic waste export data were performed by Basel Action Network (BAN) and The Last Beach Cleanup in January and February 2024.

Through these assessments, the groups have discovered that California agencies are allowing mixed and contaminated plastic wastes to flow from the United States. This not only violates California state law but also leads to the export of unrecyclable plastic wastes with weaker economies and limited recycling infrastructure.

1.1 Summary Findings

1. All California plastic waste bales are illegal to export from California to any other country other than Canada due to their being too mixed and contaminated. Yet such exports take place on a daily basis from California to countries such as Mexico and Malaysia, and no exports take place to Canada.

2. All California plastic waste bales exceed Basel Convention contamination normative thresholds. All categories of plastic waste outputs from California material recovery facilities (MRFs) exceed the Basel Convention's "almost free from contamination and other types of wastes" criteria used to determine whether strict trade controls apply to the plastic wastes -- levels that have been globally implemented by most Parties with allowable contamination thresholds of from 2-5%. The eight California consumer plastic waste categories had contamination levels ranging from 6 to 17%. Therefore, all California plastic waste categories should be classified as plastic waste listing Y48 and be subject to the control procedures and requirements of the Basel Convention. These include a ban on trade between Basel Parties and the United States.

3. California plastic waste bales currently fail the Basel Convention "unmixed" criteria. Only one of the eight categories of plastic waste outputs from California material recovery facilities (MRFs) was unmixed, and therefore seven of the eight waste categories must be considered controlled as Y48. Even polyethylene terephthalate (PET) bottles, exercising the one Basel accepted mixture of PET, polypropylene (PP), and polyethylene (PE), were further contaminated by 8-9% other polymers. Further, the criteria requiring full recycling of mixtures of PP, PET, and PE fails as PET thermoforms mixed in with the PET bottles are not recyclable and must be considered as further contamination.[4] Consequently,

[1] California Code, Public Resources Code - PRC § 42355.51
[2] California Code, Public Resources Code § 41781.4
[3] CalRecycle, SB343 Material Characterization Study Preliminary Findings, December 28, 2023
[4] Plastic Recycling Corp. of California, CALIFORNIA PET BALE COMPOSITION ANALYSIS: 2022 UPDATE

with these PET thermoforms included, California bales of PET bottles can be considered as containing as much as 64% total unrecyclable contamination.

4. California plastic waste bales fail under SB343 to be "recyclable." Due to all California plastic wastes qualifying as Basel Convention Y48 (mixed and contaminated) plastic wastes), the U.S. is unable to export these under the Party to non-Party trade ban under the Convention. Therefore, under SB343, all California plastic waste streams fail to qualify as "recyclable" as they are not *"defined streams sent to and reclaimed at a reclaiming facility consistent with the requirements of the Basel Convention."*

5. Exported California plastic waste bales cannot be claimed for diversion under AB881. Due to all California plastic wastes qualifying as Basel Convention Y48 (mixed and/or contaminated) plastic wastes and as the U.S. is unable to export these under the Party to non-Party trade ban under the Convention, all categories of California consumer plastic waste fail the second AB881 criteria of needing to be legal in all jurisdictions when exported to Basel Parties. Therefore, the PP, PET and PE plastic waste is not eligible for diversion credits under AB881 when exported and must therefore be considered disposal. Yet CalRecycle reports high statewide waste diversion rates of 40% based on the export of plastic waste, including to Mexico.[5]

6. California plastic waste exports to non-OECD Countries and Mexico are massive. In 2022, California exported 109,276 bales of plastic wastes to non-OECD countries and 166,423 bales of plastic wastes to Mexico.[6,7]

7. California exports thousands of tonnes of unrecyclable trash within bales to Mexico under the pretense of recycling. From 2015 through 2023, it is estimated that California exported 47,129 tonnes of waste to Mexico in the form of contamination in PET bottle bales which is not recycled. That is equivalent to 3,459 truckloads of waste or nearly 10 trash truckloads per day for nine years.

8. The SB343 Report is incomplete and inaccurate on several key issues:

a. Sortation assessments by individual "material type and form" were not performed for plastics, as required by California law. Seven of the eight categories of plastic wastes assessed were mixtures of material types and forms. PET thermoforms do not pass the SB343 criteria requiring that facilities covering 60% of the California population must be separating the material type and form.

b. The number of facilities reported to sort plastic bales in the SB343 consultant survey is grossly inflated compared to legally mandated CalRecycle Recycling and Disposal Reporting System (RDRS) Data (less than 15%). Polypropylene rigid plastics do not pass the SB343 sorting criterion of representing 60% of the population.

c. No assessment of sales of plastic material types and forms was made, as required by California law.

[5] CalRecycle, "State of Disposal and Recycling in California, Calendar Year 2021"
[6] USEPA, Volume-to-Weight Conversion Factors, April 2016. Midpoint of 580 lbs/bale assumed for PET bottles
[7] U.S. Census Bureau, U.S. Trade Online Database, accessed on January 8, 2024

d. The SB343 Report findings contradict CalRecycle's SB1335 Assessment that no type of single use plastic food service item, including PET clamshells and PP cups, is recyclable in California. The SB343 Report findings also contradict the 2021 California Recycling Commission Report that found that only PET and high density polyethylene (HDPE) bottles and jugs pass recyclability requirements of collection, sortation, and reclaiming/reprocessing.

1.2 Recommendations

California State Agencies must comply with, and enforce compliance with, California laws. It is not legal for CalRecycle to ignore requirements of SB343 that have been codified into state law. Furthermore, truthful implementation and enforcement of state laws can only be achieved through transparency. Based on this detailed assessment, we recommend:

1) **CalRecycle must revise the SB343 Material Characterization Study as follows:**
    a. Acknowledge that none of the eight categories of plastic waste are consistent with the Basel Convention's trade rules, and therefore no type of consumer plastic material and form meets the "recyclable" requirements of CA SB343.
    b. Require the separation of PET thermoforms into a unique category of material type and form since they cannot be recycled with PET bottles.
    c. Correct errors in the number of facilities claiming to sort PP bales to be consistent with CalRecycle's legally mandated RDRS data which shows an insufficient 15% sorting rate.
    d. Include a detailed assessment of the sales of sorted plastic waste bales, including destination, value, material characterization, and total weight on an annual basis.
    e. Publish detailed, original survey and sortation data identifying facility name and location.

2) **The California State Attorney General (AG) should:**
    a. Investigate illegal diversion reporting under AB881 by municipalities, MRFs and other plastic waste exporters. It is a criminal offense to report false information to a state agency.
    b. Ensure that exports of Y48 wastes to Mexico are legal to receive in Mexico prior to allowing their export. Mexico currently does not have a valid bilateral agreement with the US to receive Basel Y48 plastic wastes from the US.

2. California Recycling Laws SB343 and AB881

In 2021, California passed two laws related to plastics that were intended to a) protect California consumers from false recyclability labels (SB343), and b) prevent foreign countries from receiving contaminated plastic waste bales from California (AB881).

2.1. SB343-- Truth-in-Labeling Law

Signed into law in 2021, California Senate Bill 343 Truth-in-Labeling for Recyclable Materials is intended to prohibit the use of misleading recycling claims on non-recyclable products and packaging. California law SB343 defines for the public what "recyclability" means. Among other requirements, it requires that plastic waste bales created by MRFs be "defined streams" that are "consistent with the requirements of the Basel Convention:[8]

> *"(B)(i) The material type and form is sorted into defined streams for recycling processes by large volume transfer or processing facilities, as defined in regulations adopted pursuant to Section 43020, that process materials and collectively serve at least 60 percent of recycling programs statewide,* ***with the defined streams sent to and reclaimed at a reclaiming facility consistent with the requirements of the Basel Convention****."*

The Basel Convention's Plastics Amendments (2019)[9] created a new category of plastic waste to better control trade in harmful, contaminated plastic wastes. This new category is found in Basel's Annex II, entitled "Wastes for Special Consideration," and is listed as Y48. Generally, Y48 describes plastic waste shipments that are:

a. not sorted to singular polymers or resins with one exception (mixtures of polyethylene terephthalate (PET), polypropylene (PP), and polyethylene (PE));[10] or

b. halogenated compounds excepting some designated non-post-consumer fluorinated plastics compounds; or

c. destined for non-recycling destinations including waste-to-energy; or

d. not "almost free from contamination and other types of wastes."[11]

Since the adoption of the amendments, the meaning of the phrase "almost free from contamination and other types of waste" noted in point (d) above, has been defined and implemented by Basel parties in practice to fall between a 2-5% non-target material concentration level by weight.[12] Non-target material is considered "contamination and other types of waste", as it is not the single polymer or resin, or mixture of PP, PE and PET, targeted for recycling.

If a plastic waste stream possesses one or more of the above a-d attributes it must then be considered as a plastic waste subject to the control system of the Basel Convention either as being a hazardous waste

[8] California Code, Public Resources Code - PRC § 42355.51

[9] See Decision 14/12 available here in the Report of the 14th Meeting of the Conference of Parties: https://www.basel.int/TheConvention/ConferenceoftheParties/ReportsandDecisions/tabid/3303/Default.aspx

[10] Further if this exception is exercised, all of the three polymers must be "destined for separate recycling of each material and in an environmentally sound manner..."

[11] See definition also in Decision 14/12 of listing B3011 (Annex IX) including all footnotes.

[12] https://wiki.ban.org/images/8/85/Contamination_Table.pdf, BAN has compiled the known national Basel Party interpretations of the language definition Basel plastic contamination "almost free from contamination".

(A3210) or by being Y48. Most important in this context are points (a) and (d) -- that is, the exports of plastic wastes must be unmixed polymer types (with the noted exception of a mixture of PET, PP, and PE), and, in addition, should be below a 5% contamination level if they are to avoid Basel scope and control.

Among other requirements, Basel controlled wastes are all subject to a Basel rule that prohibits trade between Parties and non-Parties[13] unless a valid special (Article 11 agreement akin to Basel) is in place.[14] The U.S. is not a Basel Party and thus would need to utilize a valid Article 11 agreement to trade in Basel controlled wastes with a Party.

The only countries that remain non-Parties to the Convention other than the U.S. are: South Sudan, Fiji, Haiti, and East Timor. And, as far as Article 11 agreements go, the U.S. has for a long time been Party to an Organization for Economic Co-operation and Development (OECD) Council decision[15] for trade in recyclable waste under certain conditions. However, this OECD agreement currently allows trade in recyclable *hazardous* waste (A3210) with other OECD countries. It does not allow trade in Y48. Thus, if a plastic waste is defined by the U.S. and an importing country as being *hazardous waste* then it could be traded with another OECD country such as Mexico or Japan under that agreement but only under the OECD's notification and consent regime wherein a shipment cannot proceed until first receiving the consent of the importing country.

As far as special agreements in place that might allow the U.S. to trade in the new plastic waste category Y48 described above, only one such agreement exists. That agreement is one the U.S. signed in 2020 with Canada.[16] This "arrangement" as it has been called, while having been criticized as being itself out of compliance with the Basel Convention's Article 11 criteria, allows a free trade in all manner of plastic wastes between Canada and the U.S. including Y48.

But no other agreement exists that would allow the U.S. to export Y48 plastics to any other Basel Party including countries receiving significant exports of California's plastic waste: Mexico, Malaysia, Vietnam, and Indonesia.

In sum, due to the Party to non-Party trade prohibition in Basel, all exports of plastic wastes from California that exceed what Parties to the Convention consider a normative threshold of contamination of 5% or are mixtures of resins or polymers other than PET, PP, and PE are very likely to be Y48 and illegal unless they are going to Canada, or alternatively designated by both trading OECD countries as *hazardous* plastic wastes. As such, any such shipments will fail the criteria of SB343 of being "consistent with the requirements of the Basel Convention" and thus fail the SB343 definition of "recyclability."

2.2 AB881 Plastic Waste Exports

Due to convenient port access to Asia and trucking to Mexico, California has a long history of exporting questionably "recyclable plastic" wastes.[17] California's state policy goal to divert 75% of the state's solid

[13] Basel Convention, Article 4, paragraph 5, "A party shall not permit hazardous wastes or other wastes to be exported to a non-Party or to be imported from a non-Party."
[14] Basel Convention, Article 11
[15] OECD/LEGAL/0266 found here: https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0266
[16] https://www.epa.gov/hwgenerators/arrangement-between-government-united-states-america-and-government-canada-concerning
[17] Greenpeace, "Acceptance of Unrecyclable Plastic Products and California's Continued Exports of Plastic Waste Exports to Non-OECD Countries," May 18, 2021

waste from landfills or incineration has sadly incentivized exports of contaminated and mixed plastic wastes. Even when exported to recycling operations, much of the shipments are fractions which can be higher than 50% that are not economically recyclable and end up being dumped or burned.[18] The recognized harms and questionable legality of California's plastic waste exports on communities in foreign countries was motivation for the State to pass AB881 to prevent harm to other countries and to ensure such exports are legal.[19]

California law AB881[20] requires that the export of plastic wastes shall not constitute diversion (diverted from landfill or incineration) for the purpose of diversion credits through recycling and shall be considered disposal, unless the following conditions are met:

> *(1) The plastic waste export is a mixture of plastic wastes consisting of polyethylene, polypropylene, or polyethylene terephthalate and the export is destined for separate recycling of each material.*
>
> *(2) The plastic waste export is not prohibited by an applicable law or treaty of the country of destination and the import of the plastic waste into the country of destination will be conducted in accordance with all applicable laws and treaties of the country of destination.*
>
> *(c) For purposes of this section, "export" means export out of the country. Until January 1, 2024, or the expiration of a relevant trade agreement or arrangement with Canada or Mexico, whichever is later, "export" does not include export to Canada or Mexico.*

The first criterion limits the export essentially to PET bottles consisting of the PET bottle, the PP cap and the PE label attached to the bottle. Here the Basel Convention's new definition of controlled plastic waste noted above applies, and since the first criteria aligns precisely with what Basel considers to be outside of the scope of Basel controls, the second criterion becomes pivotal.

The second criterion above from AB881 seeks to ensure that the exports from California of plastic wastes are legal in all jurisdictions including the laws of the country of import. The question then arises if any of these mixtures of PET, PE and PP mixed with other polymers or if they possess significant contamination making them qualify as Y48. As was mentioned previously, the Basel Convention only allows trade in Basel controlled wastes between Parties,[21] unless a valid special (Article 11 agreement) is in place. The U.S. is not a Basel Party and only two special agreements are in place for the U.S. to trade in Basel controlled plastic waste that might comply with AB881: exports for recycling to Canada of any kind of plastic waste including Y48 or other OECD countries (including Mexico) if the waste is *hazardous* plastic waste (A3210). Thus, exports of Y48 from the U.S. to any countries other than Canada would fail the second criteria of being legal in all jurisdictions.

The PET bottles or other mixtures of PET, PP, and PE described by the first criteria can also be defined as Y48 if they are mixed with other polymers or exceed the 5% normative contamination threshold. Mixtures with other polymers or with contamination levels above 5% are considered as exceeding the

[18] Greenpeace, "Acceptance of Unrecyclable Plastic Products and California's Continued Exports of Plastic Waste Exports to Non-OECD Countries," May 18, 2021
[19] Californians Against Waste, AB881 Overview
[20] California Code, Public Resources Code § 41781.4
[21] Article 4, paragraph 5, "A party shall not permit hazardous wastes or other wastes to be exported to a non-Party or to be imported from a non-Party."

"almost free from contamination…" clause in the Basel Plastic Amendments. Basel is law for 190 countries and thus exporting plastic wastes with over 5% contamination or mixed with other polymers other than PP, PE, and PET from a non-Party such as the U.S. would be illegal from the standpoint of the importing country. Thus, it fails to fulfill the second criteria in AB881. As such it could not be considered for diversion credits and rather would be disposal and not recycling under California law.

Finally, we must note that the law itself is contradictory where it considers shipments to Mexico not to be considered export for the purposes of the legislation (see note (c) cited above). California lawmakers presumably exempted Canada and Mexico due to the presence of pre-existing hazardous waste trade bilateral agreements with the United States. However, Mexico does not in fact possess a valid agreement to trade in Y48 wastes which are not considered hazardous, but only for hazardous waste. Thus, trade in Y48 (Annex II mixed and contaminated plastics) with Mexico is prohibited by the Basel obligations of Mexico (a Basel Party) with respect to the U.S. (non-Party). Therefore, the law should never have exempted Mexico from the definition of "export."

3. SB343 Material Characterization Study's Preliminary Findings Report Proves Non-Compliance with SB343 and AB881 Requirements

Let us then examine the levels of mixing and contamination present in California's Material Recovery Facilities (MRFs). Under SB343, CalRecycle was required to publish data about the types of materials and forms recycled in California by January 1, 2024. On December 28, 2023, CalRecycle released SB343 Material Characterization Study Preliminary Findings (SB343 Report). The SB343 Report contains detailed material characterizations of eight material type and form (MT&F) "categories" of post-consumer plastic waste bales produced by California MRFs.[22]

BAN and The Last Beach Cleanup assessed the eight categories of plastic waste bale material characterizations with the requirements of the Basel Convention (consistency and compliance with Basel is required by SB343 and AB881). The findings are summarized in Table 1, drawn from the data derived from the study, and detailed in Appendix 1.

The plastic waste bales all showed material characterizations with high contamination percentages (ranging from 6 to 17% contamination) which are above the levels allowed by Basel Convention Parties (2-5%) in their best interpretations of the strict contamination language adopted in 2019 that defines the threshold for Basel control.[23] As a prime example, the 27 countries of the European Union (EU) allow only 2% contamination for exports leaving the EU.

Further, all but one of the eight categories of plastic waste (HDPE Mix) that could be characterized as mixed beyond the allowed mixture of PP, PET, and PE and thus fall within the scope of Basel control. Further, we note that even the PET Bottle categories where one would expect just PP, PET, and PE contain 8-9% other plastic polymers, meaning that these also qualify as Y48 due to containing plastics other than just PP, PET, and PE.

In sum, California's own data shows that both California laws SB343 and AB881 are being flouted as the Basel Convention would not allow the trade of California's mixed and contaminated plastic wastes to be

[22] CalRecycle, SB343 Material Characterization Study Preliminary Findings, December 28, 2023

[23] https://wiki.ban.org/images/8/85/Contamination_Table.pdf, BAN has compiled the known national Basel Party interpretations of the language definition Basel plastic contamination "almost free from contamination".

uncontrolled, but rather controlled as Y48 or as hazardous waste. Under such controls, due to the Party to non-Party trade prohibition, and the US being a non-Party, such trade would be prohibited.

Table 1: Summary of CalRecycle Study with respect to Basel Convention Y48 Threshold (All numbers are percentages)

MT&F Category	HDPE Mix	HDPE Natural Bottle and Container	HDPE Pigment Bottle & Container	Mixed Rigid Plastics	PET Bottle	PET Bottle & Container	Plastics #3-7	Poly-propylene
Mixed with Plastic fractions creating a mix other than PP, PE, PET.	0	2	3	100*	9	8	100*	1
Basel Y48 applies due to mixture. (Any percentage of other polymer signifies Basel control due to mixture)	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Contamination of Target Plastic or Target Mixture (PP, PE, PET) with other plastics or materials.	8	6	12	100*	17	17	100*	15
Basel Y48 applies due to high Contamination Level (above 5%).	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SB343 Compliant?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
AB881 Compliant?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Are Current California Exports to Basel Parties Legal?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

*By definition, two of the mixed plastic categories listed by CalRecycle are not compliant to the Basel Convention that only allows one type of mixture: PET (#1), PE (#2 and/or #4), and PP (#5). These two listings will by definition automatically be considered as Y48 (controlled plastic), which, as described above, cannot be traded between non-Parties and Parties to the Basel Convention:

- Mixed Rigid Plastics: this material type and form appears to allow inclusion of plastic mixtures polyvinyl chloride (PVC #3), polystyrene (PS#6), and others (#7).
- Mixtures of #3-7: this material type and form which may also include controlled mixtures of polyvinyl chloride (PVC #3), polystyrene (PS#6), and others (#7).

3.1 Basel Convention Requires Mixed PET, PP, and PE Plastics to Be Separated and Recycled

While the Basel Convention allows for exports of mixtures of PET, PP, and PE without other plastic and non-plastic contamination, the PP, PE, and PET are required upon arrival in the importing country to each be recycled/reclaimed separately. As noted, California law SB343 requires that plastic waste bales

created by MRFs be "defined streams" that are "consistent with the requirements of the Basel Convention.[24]

Likewise, as also noted above, AB881 requires Basel compliance in importing countries. Therefore, California law requires recycling/reclaiming facilities in importing countries to separate and reprocess all PET, PE, and PP forms received. Based on our knowledge of global plastic recycling facilities,[25] we believe it is highly unlikely that mixtures of PET, PE, and PP are being separated and all recycled in Mexico, Turkey, or non-OECD countries. The few plastic reclaiming/recycling facilities that exist in those countries pull out targeted material types and forms (e.g., clear PET bottles) and dump or burn other materials, as has been well documented by the media since 2018.[26] For example, the new PET bottle reclaiming/reprocessing facility opened by ALPLA and Coca-Cola in Mexico in 2022 has a 30% material wastage rate with only 35,000 of 50,000 tonnes of plastic waste material being reclaimed.[27] This is real world evidence that materials other than PET bottles are separated and disposed of at the reclaiming/reprocessing facility. A recently published study of the impact of European plastic waste exported to Vietnam found that "despite strict EU regulations on plastic recycling, there is little oversight on plastic waste shipped from the EU to Vietnam. A large percentage of the exported European plastic cannot be recycled and gets dumped in nature."[28]

Since PET thermoforms cannot be recycled with PET bottles and PET thermoforms are not known to be recycled separately, PET thermoforms also should be considered contamination in PET bottle bales under the Basel Convention.[29] Therefore, while we have not so indicated in the table above, PET thermoforms must be considered as yet an *additional* part of the contamination percentages which must be lower than 5% in order to avoid export prohibition under the Basel Convention.

Based on the details provided in the material characterizations in the SB343 Report, Table 2 shows the total contamination of Non-Target Material Type and Form Products for each of the eight consumer plastic waste categories. The contamination of Non-Target Products (e.g., with PET thermoforms added as contamination), ranges from 13 to 64%, shocking levels and far higher than the 5% allowed by the Basel Convention.

[25] Basel Action Network, Plastic Waste Transparency Project
[26] The Last Beach Cleanup, Harms of Plastic Waste Exports
[27] Recycling Today, "Alpla, Coca-Cola FEMSA invest $60M in Mexican PET recycling plant," January 31, 2022
[28] Science Daily, "A large percentage of European plastic sent to Vietnam ends up in nature," January 24, 2024
[29] Plastic Recycling Corp. of California, CALIFORNIA PET BALE COMPOSITION ANALYSIS: 2022 UPDATE

Table 2: Contamination of Non-Target Material Type and Form Product in SB343 Plastic Waste Categories (All numbers are percentages)

MT&F Category	HDPE Mix	HDPE Natural Bottle and Container	HDPE Pigmented Bottle & Container	Mixed Rigid Plastics	PET Bottle	PET Bottle & Container	Plastics #3-7	Polypropylene
Total Contamination including with unrecyclable forms of polymers	**13**	**36**	**21**	**100***	**40**	**64**	**100***	**31**

*As described in Section 3.1, two categories of alleged MT&F did not have a targeted product to recycle and are clearly considered Y48 by the Basel Convention by definition.

3.2 No Exceptions for California Plastic Waste Under Basel Convention

There are only three legal exceptions to the Party to non-Party trade prohibition under the Basel Convention ban and none are likely to be applicable for California:

(1) Exports from the U.S. to Canada are allowed. However, the U.S. Trade Online database shows that California does not export plastic waste to Canada.[30]
(2) Exports to OECD countries of *hazardous* plastic wastes are allowed. To date there is no evidence that any exports of plastic wastes have been designated by California or potential trading partner countries as *hazardous* waste plastic.[31]
(3) Exports to other countries that are also non-Party to the Basel Convention, which consist of East Timor, Fiji, Haiti, and South Sudan. However, the U.S. Trade Online database shows that California does not export plastic waste to those countries.[32]

3.3 Summary of Non-Compliance of Plastics with SB343 and AB881 Requirements

1. **Basel Convention Contamination Levels:** Based on the findings of the SB343 Report, no type of plastic waste outputs from California MRFs pass the threshold Basel Convention language of being "almost free from contamination and other types of wastes." All eight California plastic waste categories of material type and form characterized in the SB343 Report are thus classified as Basel Y48 plastic wastes and are subject to the control procedures and requirements of the Basel Convention.

2. **Basel Convention Unmixed Criteria:** Based on the findings of the SB343 Report, only one type of plastic waste output from California MRFs passes the uncontrolled requirement of the Basel Convention requiring plastic shipments to be unmixed excepting the mixture of PP, PE, and PET. But even the PET bottle categories contain 8-9 % other types of plastic. All but one category of

[30] United States Census Bureau, US Trade Online
[31] United States Census Bureau, US Trade Online
[32] United States Census Bureau, US Trade Online

material type and form characterized in the SB343 Report is reported to be unmixed by other polymers, leaving seven that are classified as Y48 and subject to the control procedures and requirements of the Basel Convention due to mixing.

3. **SB343:** Due to the Party to non-Party ban under the Basel Convention which makes exports of Basel controlled wastes between Parties and non-Parties illegal, consumer plastic wastes generated by California MRFs fail to qualify as "recyclable" under SB343 as they fail the test of **"***streams sent to and reclaimed at a reclaiming facility consistent with the requirements of the Basel Convention."*

4. **AB881**: All eight categories meet the Basel definition of controlled plastic waste Y48. Due to the Party to Non-Party ban under the Basel Convention, which makes exports of Basel controlled wastes between Parties and non-Parties illegal, and the knowledge of destinations of California plastic waste, exports to Basel Convention Parties (see Section 5 for details), the eight categories of consumer plastic waste characterized in the SB343 report fail the AB881 criteria of needing to be legal in all jurisdictions. Therefore, the eight categories of plastic waste bales created by California MRFs are not eligible for diversion credits under SB881 and must therefore be considered disposal.

5. **Basel Convention Non-Compliance:** Even though the U.S. in not a Basel Party, it is clear that California is aiding and abetting illegal trafficking in wastes, which is considered a criminal act in the Convention.[33]

4. SB343 Material Characterization Study's Preliminary Findings Report is Incomplete and Inaccurate on Several Issues

While the detailed material characterizations provided in the SB343 Report prove that no type of plastic material and form can be claimed as "recyclable" under SB343, the report is also found to be incomplete and inaccurate in alarming ways. This section refers to the detailed assessment of plastic material types and forms compliance to the SB343 requirements performed by The Last Beach Cleanup engineers, as shown on The Last Beach Cleanup website.[34] Reference is also made to CalRecycle's Recycling and Disposal Reporting System (RDRS) which requires California facilities to report a range of information, including sortation of plastic by materials types, forms, and weights of bales produced.[35] This information is available on a cumulative basis to the public through Public Records Act requests. Unfortunately, individual facility level information is not made available to the public from this source.

4.1 Sortation Assessment by "Material Type and Form" was not Performed for Plastics

As noted earlier, this is the critical language defining recyclability found in SB343:

> *(d)(1)(B)(i) The **material type and form is sorted into defined streams for recycling processes** by large volume transfer or processing facilities, as defined in regulations adopted pursuant to*

[33] Basel Convention, Article 4, paragraph 3; Article 9.
[34] The Last Beach Cleanup, SB343 Assessment
[35] CalRecycle, Recycling and Disposal Reporting System (RDRS)

> *443020, that process materials and collectively serve at least 60 percent of recycling programs statewide, with the defined streams sent to and reclaimed at a reclaiming facility consistent with the requirements of the Basel Convention.*

As summarized in Table 1 and detailed in Appendix 1, the SB343 Report provided material characterization data for eight "categories" of plastics that lump together multiple material types and forms that cannot be recycled together:

- Five "categories" of multiple forms of one material types (HDPE Mix, HDPE Natural Bottle and Container, HDPE Pigmented Bottle & Container, PET Bottle & Container, and Polypropylene),
- Two "categories" of intentional mixtures of plastic material types (Mixed Rigid Plastics and #3-7),
- Only one category sorted by both material type and form (PET bottles).

It is well known that mixed plastic types (e.g., PET and PP) and many product forms of one material type (e.g., PET thermoforms and PET bottles) cannot be reclaimed/reprocessed together. The bottles, containers, and rigids are different "forms" of plastic items with different physical properties and additives, and they cannot be assumed to be able to be reclaimed/reprocessed together by material type.

A prime example is PET thermoforms. PET thermoforms and PET bottles are currently being falsely combined into one category for assessment by CalRecycle as being "sorted into defined streams for recycling processes." Yet, it is well known that PET thermoforms cannot be recycled with PET bottles and that thermoforms are considered contamination in PET bottle bales.[36] Adding thermoforms to PET bottle bales diminishes the recyclability of PET bottles. CalRecycle acknowledges that PET thermoforms are contamination by offering a "Plastic Quality Incentive Payment" for creation of PET bottle bales with minimal PET thermoform content.[37]

California legal statute requires that the SB343 report identifies contaminants in plastic bales, which the SB343 report fails to do with regard to PET thermoform contamination:

> (d)(1)(A)(II) (II) *What material types and forms are actively recovered, and not considered contaminants, by the operation or facility.*[38]

PET thermoforms alone do not pass the SB343 criteria for recyclability requiring that facilities covering 60% of the California population must be separating the material type and form. As detailed in CalRecycle RDRS data, PET thermoforms are only separated by 1-2 of the 75 MRFs according to CalRecycle data.[39] They cover less than 3% of California's population and nowhere close to the required 60%. For the few PET thermoform bales claimed to be produced at MRFs, it cannot be asserted that the material is being reclaimed/reprocessed later as there are no PET thermoform recyclers in the United States and little market demand anywhere for PET thermoform recycling. [40]

[36] Plastic Recycling Corp. of California, CALIFORNIA PET BALE COMPOSITION ANALYSIS: 2022 UPDATE
[37] CalRecycle, Plastic Quality Incentive Payment
[38] California Code, Public Resources Code - PRC § 42355.51
[39] The Last Beach Cleanup, SB343 Assessment, Quarterly Data Provide by CalRecycle via Public Records Request
[40] The Last Beach Cleanup, SB343 Assessment, Survey of Post Consumer Plastic Recyclers

4.2 Number of Facilities Reported to Sort Plastic Bales is Grossly Inflated Compared to Legally Mandated CalRecycle Data

According to the SB343 Report, several types and forms of plastics were found, via informal phone surveys performed by consultants, to have population with access to sorting at high rates above 60%. However, CalRecycle's own legally mandated RDRS data proves that the SB343 Report sorting rates are grossly inflated. Table 3 shows a comparison of the percentage of facilities claiming to sort the material types and forms in question.

Table 3: Comparison of Percentage of Facilities Sorting Plastics by Material Type and Form

Plastic Material Type and Form	SB343 Report Consultant Survey	CalRecycle Legally Mandated RDRS Data[41]
PET Thermoformed Clamshells and Containers	100%	<3%
PP Clear Single-Use Rigids, PP Pigmented Single-Use Rigids, PP Multi-Use	88-89%	<15%
Mixed Plastic Multi-Use	85%	This is not recognized as a "sorted" plastic stream in RDRS

As noted in Section 4.1, PET thermoforms alone do not pass the SB343 criteria for recyclability requiring that facilities covering 60% of the California population must be separating the material type and form. The 100% facilities sortation rate stated in the SB343 Report may be due to the false combination of thermoforms with PET bottles into one category since PET bottles are commonly sorted by MRFs due to California Redemption Value.

Polypropylene plastic forms identified by CalRecycle (PP Clear Single-Use Rigids, PP Pigmented Single-Use Rigids, PP Multi-Use) likewise do not pass the SB343 sorting criterion of representing 60% of the population. The number of facilities claiming to sort polypropylene plastic waste appears to be inflated in the informal consultant survey and is not consistent with CalRecycle's legally mandated RDRS data, which shows fewer than 15% of California MRFs sort polypropylene rigids into bales. According to CalRecycle's RDRS data, less than 3% of California's polypropylene waste collected and sorted.[42] This is more proof that polypropylene waste does not meet SB343 requirements of being collected, sorted, and sold for 60% of the population.

The RDRS data is most credible because it is comprehensive to all MRFs and solid waste facilities, and reporting entities are bound by law to report truthfully through the RDRS system. The few polypropylene bales that are created in California are likely exported to non-OECD countries or Mexico, as shown in the U.S. export data (Section 5). There are no U.S. domestic polypropylene recyclers within economical trucking distance since the closest polypropylene recycler to California is 2,300 miles away in Alabama.[43]

[41] The Last Beach Cleanup, SB343 Assessment, Quarterly Data Provide by CalRecycle via Public Records Request
[42] The Last Beach Cleanup, SB343 Assessment, Quarterly Data Provide by CalRecycle via Public Records Request
[43] The Last Beach Cleanup, SB343 Assessment, Survey of Post Consumer Plastic Recyclers

4.3 No Assessment of Sales of Plastic Material Types and Forms

The California legal statute requires assessment of the plastic material types and forms sold in California:

> *(d)(1)(B)(i) To get a representative sample of recycling programs in the state, the department shall conduct and publish on its internet website a characterization study of material types and forms that are* ***collected, sorted, sold, or transferred*** *by solid waste facilities deemed appropriate by the department for inclusion in the study.*

However, there is no information on sales of plastic material types and forms in the SB343 Report. Sales and reclaiming/reprocessing capacity data is critical to determining the recyclability of plastic waste generated in California. As noted above and detailed in The Last Beach Cleanup's survey of post-consumer plastic waste recyclers in California and western states, there is only limited reclaiming/reprocessing capacity for two material types and forms of plastics: PET bottles/jug and HDPE bottles/jugs.[44]

4.4 False Claims of Recyclability are Made Based on Inaccurate and Incomplete Data in SB343 Report in Contradiction to CalRecycle's SB1335 Assessment and the 2021 California Recycling Commission Report

As described above, the SB343 Report incorrectly states that several types and forms of plastic waste categories surveyed have population with access to sorting at high rates above 60%: PET thermoforms, several polypropylene types (PP Clear Single-Use Rigids, PP Pigmented Single-Use Rigids, PP Multi-Use), and "mixed plastic multi-use." This has been interpreted by pro-plastics stakeholders to incorrectly claim that these types and forms of plastics pass the SB343 criteria and can be labeled as recyclable in California.[45]

More evidence of the false claims made on PET thermoforms and PP types is found in CalRecycle's SB1335 Assessment and the 2021 California Recycling Commission Report:

4.4.1 SB1335 Plastic Packaging Act

As described on CalRecycle's website, "SB 1335 aims to ensure food service packaging fits into the state's recycling and composting systems, encourage packaging design improvements to protect public health and wildlife, create more takeback and reuse options at state facilities, and reduce contamination in recycling and composting streams."[46]

SB 1335 requires CalRecycle to maintain a List of Approved Food Service Packaging,[47] which includes products that meet specific reusable, recyclable, or compostable criteria. Food service packaging products that must be approved include bowls, cups, plates, containers, and trays.

CalRecycle's List of Approved Food Service Packaging approves no type of rigid plastic bowl, cup, plate, container, or tray as recyclable.[48] This is in direct contradiction to the SB343 Report findings that imply

[44] The Last Beach Cleanup, SB343 Assessment, Survey of Post Consumer Plastic Recyclers
[45] Plastics News, "California unveils first details on EPR, green marketing laws," January 5, 2024
[46] CalRecycle, Sustainable Packaging for the State of California (SB 1335), Food Service Packaging at State Facilities
[47] CalRecycle, List of Approved Food Service Packaging, accessed on January 24, 2024
[48] CalRecycle, List of Approved Food Service Packaging, accessed on January 24, 2024

that since all forms of PET, PP, and PE rigid food service items are allegedly sorted into bales, they are recyclable.

4.4.2 2021 California Recycling Commission Report

In 2021, the California Statewide Commission on Recycling and End Markets performed a comprehensive assessment for products and packaging to determine "What is Recyclable" in California.[49] The criteria were also 60% collection, sortation, and recycling/reclaiming capacity. The 2021 assessment report showed that only three types of plastic items met the criteria: PET#1 bottles, HDPE#2 natural bottles, and HDPE#2 colored bottles.[50] The end market demand and economics of plastic recycling have declined since 2021 and no new rigid plastic recycling operations have opened in California since 2021, so it is not reasonable to claim that more types of plastics are recyclable in California in 2023.[51,52]

5. 2022 and 2023 California Plastic Waste Export Data

California continues to export massive amounts of plastic waste to countries with high plastic pollution rates that do not have the capacity to collect and recycle their own plastic, including to many non-OECD countries in Asia and Central America and to Mexico. Table 4 shows the total amount and selected categories of plastic waste exported by California in 2022 and 2023 (through November) to selected countries with legal contamination import limits ranging between 2 and 5%.[53] The data source is the official U.S. Trade Online Database.[54] The selected categories of plastic waste export include the eight categories of post-consumer plastic waste bales characterized by CalRecycle.

In 2022, California exported 28,809 tonnes of plastic waste to non-OECD countries and 43,875 tonnes of plastic waste to Mexico. Since each PET plastic waste bale typically weighs 525 to 630 lbs., this means that California exported 109,276 bales of plastic waste to non-OECD countries and 166,423 bales of plastic waste to Mexico in 2022.[55]

[49] California Statewide Commission on Recycling and End Markets website
[50] CalRecycle, 2021 Commission Report
[51] LetsRecycle.com, "'Significant pressure' on plastic recyclers, BIR says," October 10, 2023
[52] The Last Beach Cleanup, SB343 Assessment, Survey of Post Consumer Plastic Recyclers
[53] https://wiki.ban.org/images/8/85/Contamination_Table.pdf, BAN has compiled the known national Basel Party interpretations of the language definition Basel plastic contamination "almost free from contamination".
[54] U.S. Census Bureau, U.S. Trade Online Database, accessed on January 8, 2024
[55] USEPA, Volume-to-Weight Conversion Factors, April 2016. Midpoint of 580 lbs/bale assumed

Table 4: 2022 and 2023 California Plastic Waste Exports

Selected Countries	**Total Plastic Waste Exports (HS3915)**		**Polyethylene Waste Exports (HS3915.1)**		**PET Waste Exports (HS3915.90001)**		**Other Plastic Waste Exports - Including Propylene (HS3915.90009)**	
Figures in metric tonnes	2022	2023 through Nov	Total 2022	2023 through Nov	2022	2023 through Nov	2022	2023 through Nov
World Total	**81,605**	**58,181**	**28,000**	**16,295**	**38,262**	**26,066**	**9,160**	**9,373**
Non-OECD Countries	28,809	19,434	21,760	12,911	4,097	4,112	1,459	1,668
El Salvador	7,888	3,380	7,829	3,380	59	-	-	-
China	21	408	1	-	19	180	0	84
Hong Kong	1,959	307	78	-	1,644	271	23	0
Indonesia	1,788	-	1,612	-	176	-	-	-
Malaysia	9,345	7,465	7,197	4,853	284	1,585	1,262	968
Mexico	43,875	34,043	5,123	3,013	29,134	18,319	5,563	7,571
Turkey	356	-	56	-	280	-	19	-
Vietnam	2,479	4,620	1,210	2,530	1,138	1,974	112	95

6. California Exports Massive Amounts of Contamination Waste to Mexico in Plastic Waste Bales

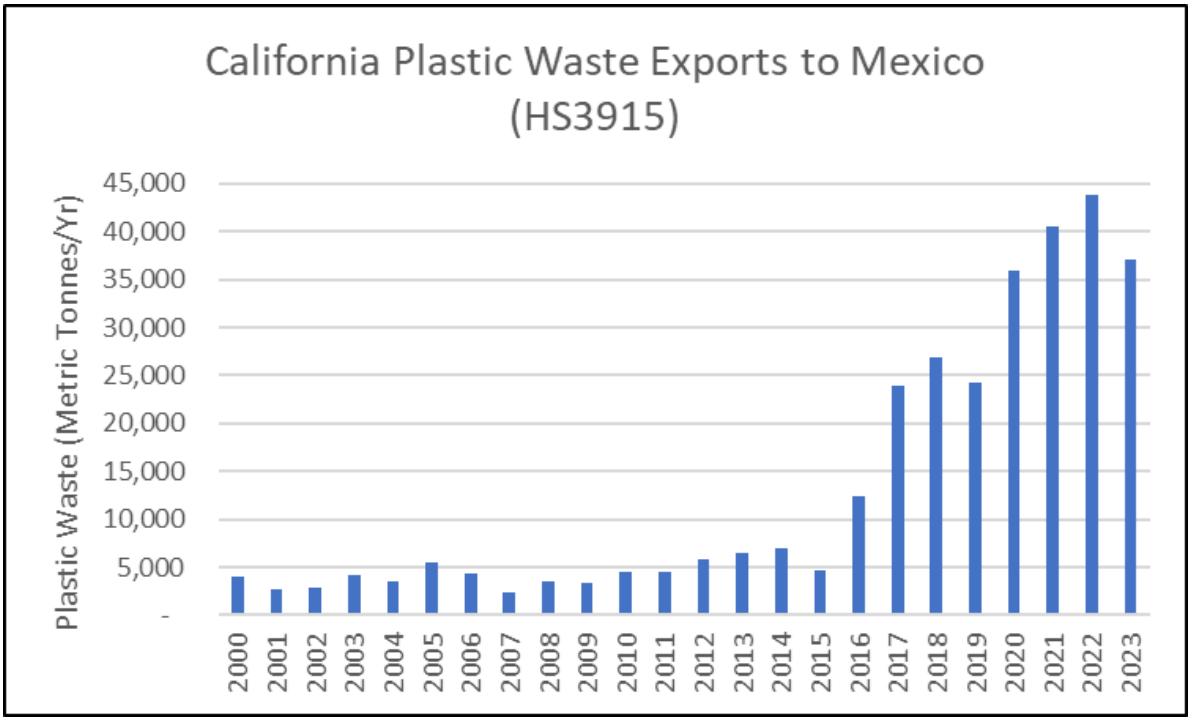
California has a long, disturbing history of exporting wastes to Mexico due to low-cost trucking, Mexico's low labor costs, and Mexico's lack of enforced environmental regulations.[56] CalMatters has published several investigations showing the significant environmental and health harms of California's hazardous waste exports to Mexico.[57,58]

Less attention has been paid to the massive amounts of waste classified as "non-hazardous" that has been trucked to Mexico as contamination in California's PET bottle and other plastic waste bales. This waste is essentially unrecyclable trash that should have been separated and sent to California landfills. Figure 1 shows the history of California's plastic waste exports to Mexico. Since the implementation of

[56] Desert Sun, "A toxic dumping ground festers on the border," December 15, 2019
[57] CalMatters, "California exports the risk from its hazardous waste. One neighborhood in Mexico shows the consequences," December 20, 2023
[58] CalMatters, "Hidden Hazards: Toxic waste in California," January 25, 2023

China's Green Fence Policy (2015) and National Sword Policy (2018) that restricted and then prevented plastic waste exports to China, California plastic waste exports to Mexico have skyrocketed from below 5,000 tonnes/yr in 2015 to 43,875 tonnes/yr in 2022 and 37,138 tonnes in 2023 (extrapolated to full year).[59]

Figure 1: California Plastic Waste Exports to Mexico (All Types - HS3915)[60]



Mechanical plastic recycling creates massive amounts of microplastics, volatile organic carbon emissions, and hazardous waste which are not regulated or responsibly managed in Mexico, Turkey, and low economic Asian countries.[61,62,63] Fires at poorly regulated plastic recycling facilities in Mexico are common, as evidenced by the recent fire of massive PET plastic waste piles at a plastic recycler near Mexico City called Planta de reciclaje R.G.M.[64]

CalRecycle acknowledges the harms of waste exports to other countries, stating, "Unfortunately, exporting recyclable materials to other countries does not always result in the exported materials being recycled and can also result in negative environmental, economic, and social impacts, especially if the material is contaminated or sent to a place without adequate controls or infrastructure. In some cases,

[59] U.S. Census Bureau, U.S. Trade Online Database, accessed on January 16, 2024. 2023 full year extrapolated from data published through November 2023.
[60] U.S. Census Bureau, U.S. Trade Online Database, accessed on January 16, 2024. 2023 full year extrapolated from data published through November 2023.
[61] Inside Climate News, "Who Said Recycling Was Green? It Makes Microplastics By the Ton," May 16, 2023
[62] Bloomberg, "Thailand Is Tired of the Noxious Fumes From Recycling Your Trash," November 11, 2022
[63] Human Rights Watch, "It's As If They're Poisoning Us," September 21, 2022
[64] Yahoo News, "Firefighters Battle Flames at Plastic Recycling Plant Outside Mexico City," January 30, 2024

contaminated recyclables are landfilled or dumped into rivers that float into the ocean and migrate into the Pacific Garbage Patch off the coast of California."[65]

The poor operations of one PET bottle recycler in Mexico (ClearPac), which was set up in 2015 by American and Chinese partners in response to China's Green Fence Policy, is an example of the poor performance of plastic recyclers in Mexico.[66] ClearPac has had harmful impacts on both sides of the Mexico and U.S. border, as documented by this report by *Noticias de Tijuana*, translated from Spanish:[67]

> *The company generates hazardous waste and sends it to the trash (treatment plant sludge and contaminated rags). The company does not have a record of its wastewater discharges that leave the treatment plant from a process where sodium hydroxide is used and discharges directly to the sewer.*
>
> *Photographs and videos attest to the discharges of toxic sludge that the company indiscriminately throws into its drainage so that it in turn circulates through the sewage system until it is thrown into the Tijuana River channel, until it ends up on the beaches of Tijuana. and Imperial Beach, with serious consequences for marine fauna and humans.*
>
> *According to the San Diego County Department of Environmental Health, residual discharges, such as these, with millions of gallons of contaminated water from Tijuana, have forced the closure of the Imperial Beach coast. This action has prompted Imperial Beach Mayor Serge Dedina to take legal action.*

Nongovernmental organizations (NGOs) in Mexico and the U.S. have protested the waste colonialism of export of California plastic waste to Mexico, to no avail.[68,69]

The material characterization of plastic waste bales included in CalRecycle's SB343 Report provide proof of the massive amounts of trash contamination that has been trucked to Mexico under the pretext of recycling.

And yet as noted above and in Table 1, no type of plastic waste bale characterized in CalRecycle's SB343 Report can legally be exported to Mexico due to high contamination rates and mixed plastic shipments. The SB343 detailed material characterization (reproduced in Appendix 2) also shows that PET bales have very high non-PET clear bottle contamination rates: 40% for PET bottle bales and 64% for PET bottle and container bales as indicated in Table 2. Only PET clear bottles can be recycled together, since green and opaque PET bottles and other plastic and non-plastic materials are contamination in clear PET bottle recycling.[70] An average of the two PET bale contamination rates (52% average) enables an estimation of the amount of unrecyclable trash that California has exported to Mexico under the pretense of recycling.

Employing the plastic waste export data in Table 3 and the average PET bale contamination rate of 52%, Table 5 and Figure 2 show the amount of contamination waste that is likely to have been exported to

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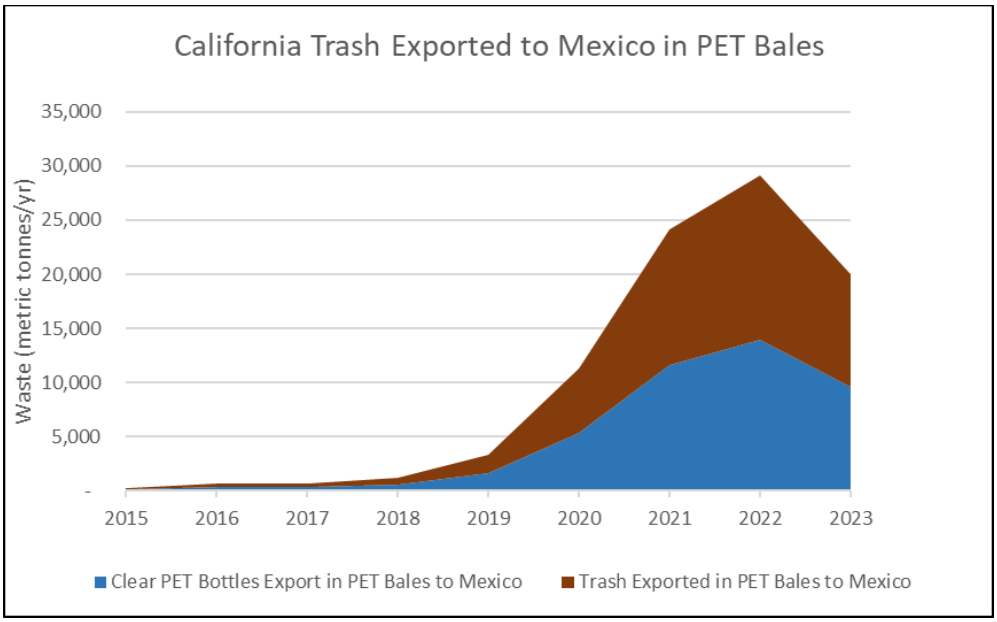
[65] CalRecycle, "State of Disposal and Recycling in California, Calendar Year 2021"
[66] Pie de Pagina, "Companies that import plastic garbage to Latin America are denounced for environmental damage," February 20, 2023.
[67] Noticias de Tijuana, "'CLEARPAC' maquiladora in PROFEPA's sights," April 29, 2021
[68] Pressenza, "Latin America, the US's new plastic dumping ground," October 6, 2022
[69] Grist, "American cities want to recycle their plastic trash in Mexico. Critics call it 'waste colonialism,'" March 31, 2023
[70] NPR, "Sprite ditches its iconic green bottle — but environmentalists say it's not enough," July 28, 2022

Mexico in PET bales from 2015 through 2023. From 2015 through 2023, we estimate that California has exported 47,129 tonnes of plastic waste to Mexico as contamination in PET bottle bales. That is equivalent to 3,459 truckloads of trash.

Table 5: California Unrecyclable Trash Exported to Mexico in PET Bales

	Clear PET Bottles, in metric tonnes	Unrecyclable Trash, in metric tonnes	Number of Trucks of Unrecyclable Trash[71]
Total (2015 to 2023)	**43,503**	**47,129**	**3,456**
2015	103	111	8
2016	313	339	25
2017	349	378	28
2018	567	614	45
2019	1,585	1,717	126
2020	5,398	5,848	429
2021	11,612	12,580	923
2022	13,984	15,150	1,111
2023	9,593	10,392	762

Figure 2: California Unrecyclable Trash Exported to Mexico in PET Bales



[71] Calculation based on a trash truck loaded with 15 U.S. tons (13.6 metric tonnes) of waste.

Appendix 1: Detailed Assessment of Material Characterization Data to Basel Convention Requirements

(All numbers are %)

MT&F Category	HDPE Mix (2 Samples)	HDPE Natural Bottle and Container (12 Samples)	HDPE Pigmented Bottle & Container (15 Samples)	Mixed Rigid Plastics (7 Samples)	PET Bottle (12 Samples)	PET Bottle & Container (11 Samples)	Plastics #3-7 (6 Samples)	Polypropylene (15 Samples)
Basel Compliant?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
SB343 Compliant?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
AB881 Compliant?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Mixed with Plastic fractions creating a mix other than PP, PE, PET.	0	2	3	100*	9	8	100*	1
Contamination of Target Plastic or Target Mixture (PP, PE, PET) with other plastics or materials. (Denoted by a)	8	6	12	100*	17	17	100*	15
Total Contamination including with unrecyclable forms of polymers (Denoted by b)	**13**	**36**	**21**	**100***	**40**	**64**	**100***	**31**
PL01 PET Clear Bottles - non-CRV	0	1 (b)	1 (b)	0	17	11	2	0
PL02 PET Clear Beverage Bottles - CRV	0	0	0	0	45	26	1	0
PL03 PET Pigmented Bottles - non-CRV	0	0	3 (b)	0	1 (b)	1 (b)	3	0
PL04 PET Pigmented Beverage Bottles - CRV	0	0	0	0	2 (b)	1 (b)	0	0
PL05 PET Thermoformed Clamshells and Containers	0	0	0	0	10 (b)	19 (b)	0	1 (b)

MT&F Category	HDPE Mix (2 Samples)	HDPE Natural Bottle and Container (12 Samples)	HDPE Pigmented Bottle & Container (15 Samples)	Mixed Rigid Plastics (7 Samples)	PET Bottle (12 Samples)	PET Bottle & Container (11 Samples)	Plastics #3-7 (6 Samples)	Polypropylene (15 Samples)
PL06 Other PET Clear Single-Use Rigids	1 (b)	0	1 (b)	0	5 (b)	12 (b)	3	2 (b)
PL07 Other PET Pigmented Single-Use Rigids	2 (b)	0	2 (b)	0	1 (b)	1 (b)	1	1 (b)
PL08 PET Multi-Use Rigids	0	23 (b)	0	7	0	0	0	0
PL09 HDPE Clear Beverage Bottles - non-CRV	42	57	1	0	0	11 (b)	1	0
PL10 HDPE Clear Beverage Bottles - CRV	0	6	0	0	0	0	0	0
PL11 HDPE Buckets: Food	0	0	0	19	0	0	0	0
PL12 HDPE Buckets: nonFood	4	0	1	7	0	0	0	2 (b)
PL13 Other HDPE Clear Single-Use Rigids	0	0	4	0	1 (b)	0	0	1 (b)
PL14 HDPE Pigmented Single-Use Rigids	42	2 (b)	72	7	0	1 (b)	3	6 (b)
PL15 Other HDPE Multi-Use Rigids	0	0	0	11	0	0	10	0
PL18 LDPE Clear Beverage Bottles	0	0	0	0	0	0	0	1 (b)
PL19 LDPE Clear SingleUse Rigids	0	0	0	0	0	0	1	0
PL20 LDPE Pigmented Single-Use Rigids	0	0	0	0	0	0	0	2 (b)
PL21 LDPE Multi-Use	0	0	0	0	0	0	1	0

MT&F Category	HDPE Mix (2 Samples)	HDPE Natural Bottle and Container (12 Samples)	HDPE Pigmented Bottle & Container (15 Samples)	Mixed Rigid Plastics (7 Samples)	PET Bottle (12 Samples)	PET Bottle & Container (11 Samples)	Plastics #3-7 (6 Samples)	Polypropylene (15 Samples)
PL22 PP Clear Single-Use Rigids	1 (b)	1 (b)	1 (b)	0	2 (b)	1 (b)	25	36
PL23 PP Pigmented SingleUse Rigids	1 (b)	3 (b)	1 (b)	6	0		20	31
PL24 PP Multi-Use	0	0	0	22	1 (b)	0	4	5
PL33 Films - Plastic Bags - Designed for Reuse	0	0	0	0	0	0	0	0
PL34 Films - Plastic NonBags - Agricultural and Commercial	0	0	0	0	0	0	0	0
PL35 Films - Plastic NonBags - Other Film	0	0	0	0	0	0	0	0
PL16 PVC Single-Use Rigids	0	0	0	0	0	0	0	0
PL17 PVC Multi-Use	0	0	0	5	0	0	0	0
PL25 PS Thermoformed Clamshells and Containers	0	0	0	0	3 (a,b)	0	3	0
PL26 PS Densified: SingleUse Food Service Ware	0	0	0	0	0	0	1	0
PL27 PS Expanded - Packaging	0	0	0	0	0	0	0	0
PL28 PS Expanded - Food Service Ware	0	0	0	0	0	0	0	0
PL29 PS Densified: MultiUse	0	0	0	1	0	0	0	0
PL30 Other (7) Single-Use Rigids	0	1 (a, b)	1 (a,b)	0	1 (a,b)	1 (a,b)	1	1 (a,b)

MT&F Category	HDPE Mix (2 Samples)	HDPE Natural Bottle and Container (12 Samples)	HDPE Pigmented Bottle & Container (15 Samples)	Mixed Rigid Plastics (7 Samples)	PET Bottle (12 Samples)	PET Bottle & Container (11 Samples)	Plastics #3-7 (6 Samples)	Polypropylene (15 Samples)
PL31 Plastic Wine Bladders	0	0	0	0	0	0	0	0
PL32 Films - Plastic Bags - Compostable	0	0	0	0	0	0	0	0
PL36 Films - Plastic Bags - Designed for Disposal	0	0	0	0	0	0	0	0
PL37 Unknown Plastic Type or Mixture of Multiple Plastic Resins (SingleUse)	0	0	0	0	0	0	0	0
PL38 Mixed Plastic MultiUse	0	0	0	3	1 (a,b)	0	0	0
PL39 Remainder/ Composite Plastic	0	1 (a,b)	2 (a,b)	0	4 (a,b)	7 (a,b)	0	0
Other Rare Items	3 (a,b)	1 (a,b)	3 (a,b)	1	5 (a,b)	5 (a,b)	4	4 (a,b)
SP02 Bulky Items	0	0	0	5	0	0	0	0
X02 Gable Top Cartons Non CRV	0	0	0	0	0	0	1	0
X03 Aseptic Containers-non-CRV	0	0	0		0	0	1	0
X10 Green Material, Clean Wood, and Food Scraps	0	2 (a,b)	1 (a,b)	0	1 (a,b)	1 (a,b)	2	0
X11 Mixed Material Single Use	2 (a,b)	0	2 (a,b)	2	0	1 (a,b)	2	1 (a,b)
X12 Remainder/ Composite Mixed Material Multi-Use	0	0	1 (a,b)	4	0	1 (a,b)	1	0
X13 Fines and Residuals	1 (a,b)	0	0	0	0	0	1	0

MT&F Category	HDPE Mix (2 Samples)	HDPE Natural Bottle and Container (12 Samples)	HDPE Pigmented Bottle & Container (15 Samples)	Mixed Rigid Plastics (7 Samples)	PET Bottle (12 Samples)	PET Bottle & Container (11 Samples)	Plastics #3-7 (6 Samples)	Polypropylene (15 Samples)
M02 Aluminum Beverage Cans - CRV	0	0	0	0	0	0	1	0
M06 Aluminum Foil (>3 mm), Molded Containers	0	0	0	0	0	0	1	1 (a,b)
M07 Tin/Steel Cans, Lids - non-CRV	0	0	0	0	0	0	1	0
M10 Tin/Aerosol Containers	1 (a,b)	0	0	0	1 (a,b)	1 (a,b)	0	0
M12 Ferrous Metals	0	0	0	0	0	0	1	0
M13 Other NonFerrous Metals	0	0	0	2	0	0	0	0
F01 Cardboard/ Old Corrugated Containers (OCC)	0	0	0	0	0	0	0	1 (a,b)
F06 Folded Paper Containers and Other Paperboard Packaging	0	0	0	0	0	0	1	1 (a,b)
F07 Other Paper	1 (a,b)	0	0	0	1 (a,b)	0	2	1 (a,b)
F10 Composite Food Service Paper & Packaging	0	0	0	0	0	0	1	5 (a,b)
G05 Glass Containers - Brown/ Amber - nonCRV	0	0	0	0	0	0		0
G09 Remainder/ Composite Glass	0	0	0	0	0	0	1	0
H01 Household Hazardous Waste	0	1 (a,b)	2 (a,b)	0	0	0	0	0

Appendix 2: Detailed California Plastic Waste Exports in 2022 and 2023 (through November)

The data source is the official U.S. Trade Online Database.[72]

	Total Plastic Waste Exports (HS3915)		**Polyethylene Waste Exports (HS3915.1)**		**PET Waste Exports (HS3915.90001)**		**Other Plastic Waste Exports - Including Propylene (HS3915.90009)**	
Figures in metric tonnes	2022	2023 through Nov	Total 2022	2023 through Nov	2022	2023 through Nov	2022	2023 through Nov
World Total	81,605	58,181	28,000	16,295	38,262	26,066	9,160	9,373
Australia	8	2	-	-	8	-	0	1
Bangladesh	97	388	-	108	97	-	-	281
Belgium	-	176	-	-	-	-	-	15
Brazil	20	-	-	-	20	-	-	-
Chile	420	242	420	242	-	-	-	-
China	21	408	1	-	19	180	0	84
Colombia	18	17	18	-	-	17	-	-
Costa Rica	2	22	-	22	-	0	2	-
Dominican Republic	60	-	60	-	-	-	-	-
Ecuador	1,650	720	1,630	720	-	-	20	-
El Salvador	7,888	3,380	7,829	3,380	59	-	-	-
France	20	18	20	-	-	-	-	-
Germany	5,321	3,502	110	12	3,406	3,449	1,805	42
Ghana	22	32	22	-	-	-	-	32
Guatemala	200	20	180	20	-	-	-	-

[72] U.S. Census Bureau, U.S. Trade Online Database, accessed on January 8, 2024

	Total Plastic Waste Exports (HS3915)		Polyethylene Waste Exports (HS3915.1)		PET Waste Exports (HS3915.90001)		Other Plastic Waste Exports - Including Propylene (HS3915.90009)	
Honduras	238	120	20	120	218	-	-	-
Hong Kong	1,959	307	78	-	1,644	271	23	0
India	416	528	362	379	-	10	-	19
Indonesia	1,788	-	1,612	-	176	-	-	-
Ireland	0	-	-	-	-	-	-	-
Italy	-	21	-	-	-	-	-	-
Japan	39	60	-	-	34	58	5	2
Korea, South	63	132	-	22	60	73	3	37
Latvia	1,589	-	310	-	1,166	-	20	-
Lithuania	96	-	96	-	-	-	-	-
Malaysia	9,345	7,465	7,197	4,853	284	1,585	1,262	968
Mexico	43,875	34,043	5,123	3,013	29,134	18,319	5,563	7,571
Netherlands	838	186	161	-	-	-	257	15
Pakistan	-	37	-	19	-	18	-	-
Portugal	-	60	-	-	-	-	-	-
Romania	-	39	-	-	-	-	-	-
Singapore	2	2	-	-	-	-	2	2
Spain	251	165	22	75	76	-	30	15
Sweden	-	18	-	-	-	-	-	-
Switzerland	-	7	-	-	-	-	-	7
Taiwan	1,954	1,192	1,326	602	203	75	-	153

	Total Plastic Waste Exports (HS3915)		**Polyethylene Waste Exports (HS3915.1)**		**PET Waste Exports (HS3915.90001)**		**Other Plastic Waste Exports - Including Propylene (HS3915.90009)**	
Thailand	574	228	137	178	238	17	39	34
Turkey	356	-	56	-	280	-	19	-
Venezuela	-	20	-	-	-	20	-	-
Vietnam	2,479	4,620	1,210	2,530	1,138	1,974	112	95