Environmental Product Declaration

CALPORTLAND®

CalPortland Company

EPD for concrete produced at 12 CalPortland California Facilities

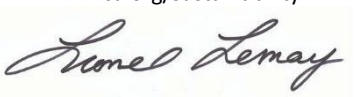
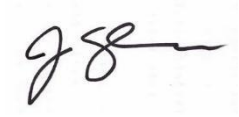
NRMCA CERTIFIED EPD

Environmental Product Declaration

NRMCA Certified Environmental Product Declaration

This environmental product declaration was conducted in accordance with ISO 14025:2006

Internal Verification External Verification X

Declared Product:	This Environmental Product Declaration (EPD) covers concrete mixes produced by Calportland Company.	
Declaration Owner:	**CalPortland Company** 2025 East Financial Way, Glendora CA 91741 www.calportland.com	
Program Operator:	**National Ready Mix Concrete Association** 900 Spring St. Silver Spring, MD 20910 301-587-1400 www.nrmca.org/sustainability  Lionel Lemay	
LCA and EPD Developer:	**Athena Sustainable Materials Institute** 119 Ross Ave. #100 Ottawa, ON K1Y 0N6 613-729-9996 www.athenasmi.org  James Salazar	
Product Category Rule:	The Carbon Leadership Forum PCR: Product Category Rules (PCR) for ISO 14025 Type III Environmental Product Declarations (EPDs) for Concrete Version 1.1 dated December 4, 2013, Serves as the PCR for this EPD. www.carbonleadershipforum.org.	
	PCR review was conducted by: Nicholas Santero, PE International; Holly Lahd, EL Analytics and Medgar Marceau, Morrison Hershfield; December 4, 2013	
Independent LCA Reviewer and EPD Verifier:	This EPD was independently verified by Sustainable Solutions Corporationl in accordance with ISO 14025 and ISO 21930. The life cycle assessment was independently reviewed in accordance ISO 14044 and the referenced PCR. Independent verification of the declaration, according to ISO 14025: 2006 ☐ Internal ☒ External	
	Third Party Verifier Jeremy Rafter, LCACP, Project Manager, Sustainable Solutions Corporation on Behalf of NRMCA	
Date of Issue:	Issued December 28 2017	
Period of Validity:	5 Years	
EPD Number	NRMCAEPD:10018	

Description of Company

CalPortland Company is a major diversified building materials and construction solutions provider to the Western United States and Canada. Since 1891, we have reliably provided quality innovative and efficient solutions to your greatest construction challenges with our expertise in cement production and distribution, ready mixed concrete, construction aggregates, asphalt, construction services and other building materials. Our products provide solutions everywhere; in buildings for shelter; roads and bridges that transport and link us; systems that provide electricity, water, gas and waste treatment; and other necessary infrastructure like hospitals, schools, railways and airports. We are creating solid foundations through the use of sustainable materials and renewable technologies.

CalPortland Company is the industry leader for energy conservation and environmental quality. Our commitment to continuously improve our environmental performance and provide positive contributions to our company and to society is a product of not just our words but also our actions. Sustainable development is defined as a society meeting the needs of the present without compromising the ability of future generations to meet their own needs. CalPortland is committed to solving tomorrow's challenges today through the advancement of sustainable materials and renewable technologies.

Location of Facilities

Alameda Ready Mix Plant
1862 E. 27th St.
Los Angeles, CA 90058

El Segundo Ready Mix Plant
339 So. Aviation Blvd.
El Segundo, CA 90245

LAX Ready Mix Plant
5299 West 111th Street
Los Angeles, CA 90045

Live Oak Ready Mix Plant
590 Live Oak
Irwindale, CA 91706

Normandie Ready Mix Plant
19030 S Normandie Ave
Torrance, CA 90502

Sun Valley Ready Mix Plant
8981 Bradley Ave.
Sun Valley, CA 91352

Thousand Palms Ready Mix Plant
72200 Vista Chino Ave.
Thousand Palms, CA 92276

Lompoc Ready Mix Plant
316 North 'A' St
Lompoc, CA 93436

Paso Robles Ready Mix Plant
444 Volpi Ysabel Rd.
Paso Robles, CA 93446

Solvang Ready Mix Plant
1130 Mission Dr.
Solvang, CA 93463

San Luis Obispo Ready Mix Plant
219 Tank Farm Rd.
San Luis Obispo, CA 93401

Santa Maria Ready Mix Plant
1625 E. Donovan Rd.
Santa Maria, CA 93454

Description of Product

Products covered by this EPD satisfy general purpose concrete as used in residential, commercial and public works applications in the US and Canada. This EPD reports the impacts for 30 different ready-mixed concrete products produce at 12 different CalPortland facilities in accordance with the following:

- ACI 211: Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete
- ACI 318: Building Code Requirements for Structural Concrete
- ASTM C94: Standard Specification for Ready-Mixed Concrete
- CSI MasterFormat Division 03-30-00: Cast-in-Place Concrete
- UNSPSC Code 30111500: Ready Mix

This EPD is intended for use in Business to Business (B-to-B) communication. The scope of this EPD is cradle-to-gate and considers the following life cycle stages.

- **A1 - Raw Material Supply:** Includes all upstream processes related to extraction, handling, and processing of the raw materials and intermediate component products as well as fuels used in the production of concrete. Component products include cement, supplementary cementitious materials, aggregate (coarse and fine), water, admixtures and other materials or chemicals used in concrete mixtures.
- **A2 - Transportation:** Accounts for the transportation of all input materials and fuels from the supplier to the gate of the concrete plant.
- **A3 - Manufacturing (Core Processes):** Includes all core processes and the energy and water used to store, move, batch and mix the concrete and operate the concrete plant as well as the transportation and processing of wastes from these core processes.

Methodology of Underlying LCA

Declared Unit

The declared unit is 1 cubic yard of ready mixed concrete product. Key product variables include:

- Compressive strength – Compressive strengths are represented in the various mix designs and include the number of days after pouring as a part of the reference value: e.g. 3,000 psi (20.7 MPa) @ 28 days; 4,000 psi (27.6 MPa) @ 56 days; 6,000 psi (31.0 MPa) and 90 days; etc.
- Water to cementitious materials ratio (w/cm)– Varies, but generally lower for higher strength non-air entrained mix designs (above 5,000psi (34.5 MPa)) in accordance with ACI 211.1 recommendations;
- SCM use– various mix designs call for portland cement displacement by incorporating fly ash (FA) and/or slag cement (SL);
- Admixtures use – Admixture use was specified for the different mixes that were modeled. These admixtures included an air-entraining admixture, water reducing and accelerating admixtures, and high range water reducer admixtures.

Product (mix design) components include: portland cement, slag cement, natural and crushed aggregates, admixtures and batch water.

Scope of LCA

A summary of life cycle stages included in the EPD is as follows:

1. Raw Material Supply (upstream processes): Extraction, handling and processing of the raw materials used in the production of concrete: cement, supplementary cementitious materials, aggregate (coarse and fine), water, admixtures and other materials or chemicals used in concrete mixtures.
2. Transportation: Transportation of these materials from the supplier to the 'gate' of the concrete producer.
3. Manufacturing (core processes): The energy used to store, batch, mix and distribute the concrete and operate the facility (concrete plant)
4. Water use in mixing and distributing concrete.

A summary of life cycle stages excluded from the EPD is as follows:

1. Production, manufacture and construction of buildings capital goods and infrastructure
2. Production and manufacture of concrete production equipment, concrete delivery vehicles, earthmoving equipment, and laboratory equipment
3. Personnel---related activities (travel, furniture, office supplies).
4. Energy use related to company management and sales activities.

Building Life Cycle Information Modules														
Product stage			Construction Process stage		Use stage							End-of-life stage			
Raw Material supply	Transport	Manufacturing	Transport	Construction/Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	De-Construction/ Demolition	Transport	Waste processing	Disposal
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4

Figure 1. Life cycle stage schematic – alpha-numeric designations as per CLF PCR 2013(adapted from CEN 15978:2011)

Cut-off Rules

The cut-off criteria for all activity stage flows considered within the system boundary conform with ISO14044:2006 and section 3.3 of the CLF PCR 2013. Specifically, the cut-off criteria were applied as follows:

- All inputs and outputs for which data are available are included in the calculated effects and no collected core process data are excluded.
- A one percent cut-off is considered for renewable and non-renewable primary energy consumption and the total mass of inputs within a unit process. The sum of the total neglected flows does not exceed 5% of all energy consumption and mass of inputs.
- All flows known to contribute a significant impact or to uncertainty (e.g., portland cement and admixtures) are included.
- The cut-off rules are not applied to hazardous and toxic material flows – all of which are included in the life cycle inventory.

Allocation

The applied allocation procedures conform with ISO 14044:2006 clause 4.3.4.

Limitations

The limitations of this EPD include:

- This EPD does not report all of the environmental impacts due to manufacturing of the product, but rather reports the environmental impacts for those categories with established LCA-based methods to track and report. Unreported environmental impacts include (but are not limited to) factors attributable to human health, land use change, and habitat destruction.
- In order to assess the local impacts of product manufacturing, additional analysis is required.
- This EPD reports the results of an LCA or the 'cradle-to-gate' analysis. Thus, declarations themselves are not comparative assertions, defined as an environmental claim regarding the superiority or equivalence of one product versus a competing product that performs the same function. An EPD does not make any statements that the product covered by the EPD is better or worse than any other product.
- The EPD participants may participate in other sustainability or environmental best practice programs. However, no such additional environmental claim or declaration is conveyed in this EPD.
- EPDs of concrete mixtures may not be comparable if they do not comply with this standard and data from this EPD. The data cannot be used to compare between concrete mixes, construction products or concrete mixtures used in different concrete products unless the data is integrated into a comprehensive LCA. For example, precast concrete, concrete masonry units and site cast concrete all have different manufacturing processes whose impacts are attributed to different LCA stages. This precludes direct comparison between mixtures used in these different products unless all lifecycle phases are included.
- Life cycle impact assessment (LCIA) results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.
- This EPD was created using industry average data for upstream materials. Variation can result from differences in supplier locations, manufacturing processes, manufacturing efficiency and fuel type used.

Data Sources and Data Quality Assessment

This EPD is based on foreground LCI data collected from the participating company's production facilities for the calendar year 2016. All upstream material, resource and energy carrier inputs have been sourced from various industry-average datasets and literature. Many of these data sets are defaulted to those specified for use in the CLF PCR 2013. Tables 2 to 4 describe each LCI data source and the data quality for each data source.

Table 1. A1 - Raw Material Supply

Materials	LCI Data Source	Geography	Year	Data Quality Assessment
Cement (lbs)	Portland Cement Association EPD USA Portland Cement, 2016	USA	2014	• **Technology:** good Process models USA industry average portland cement production • **Time:** good Data is within 3 years • **Geography:** very good • **Completeness:** good • **Reliability:** very good, third-party verified EPD
Portland Limestone Cement (lbs)	CalPortland EPD of PLC produced at Oro Grande	California	2016	• **Technology:** very good Processes modeled based on specific supplier. • **Time:** very good Data Is less than 1 year old. • **Geography:** very good Processes modeled based on specific supplier. • **Completeness:** very good • **Reliability:** very good Data is a verified EPD.
Fly Ash (lbs)	None, no incoming burden, only inbound transport was considered	N/A	N/A	• **N/A** • **Recovered material**
Silica Fume (lbs)	None, no incoming burden, only inbound transport was considered	N/A	N/A	• **N/A** • **Recovered material**
Slag Cement (lbs)	Slag Cement Association N. America EPD Slag Cement, 2015	N. America	2013-2014	• **Technology:** good Process models ground granulated blast furnace slag • **Time:** good Data is within 3 years • **Geography:** very good • **Completeness** good • **Reliability:** very good, third-party verified EPD
Crushed Aggregates (lbs) *coarse and fine*	ecoinvent process: "Gravel, crushed, at mine" ecoinvent 2.02 CLF PCR Default	EU	2004	• **Technology:** good Processes represent aggregate, with and without crushing. Dust emissions are estimated from limestone mining. • **Time:** fair

Table 1. A1 - Raw Material Supply				
Materials	**LCI Data Source**	**Geography**	**Year**	**Data Quality Assessment**
Natural Aggregates (lbs) *coarse and fine*	ecoinvent process: "Gravel, round, at mine", ecoinvent 2.02 CLF PCR Default	EU	2004	Data Is twelve years old but technology remains consistent across the industry • **Geography:** fair Processes model Swiss production (no US process in USLCI database). • **Completeness:** very good • **Reliability:** very good Data is verified by ecoinvent.
Orca 1/2" Aggregate (lbs)	Polaris EPD of Orca Sand and Gravel	Canada	2017	• **Technology:** very good Processes modeled based on specific supplier. • **Time:** very good Data Is less than 1 year old. • **Geography:** very good Processes modeled based on specific supplier. • **Completeness:** very good • **Reliability:** very good Data is a verified EPD.
Orca 1" Aggregate (lbs)	Polaris EPD of Orca Sand and Gravel	Canada	2017	
Orca Sand (lbs)	Polaris EPD of Orca Sand and Gravel	Canada	2017	
Manufactured Lightweight Aggregates (lbs)	ecoinvent, Expanded clay {USA}| production | Alloc Def, U	USA	2013	• **Technology:** good Process represents production of manufactured lightweight aggregate used in the production of lightweight concrete. Based on the following generic process description, http://www.epa.gov/ttnchie1/ap42/ch11/final/c11s20.pdf, Most lightweight aggregate is produced from materials such as clay, shale, or slate. • **Time:** good Data is within 3 years. • **Geography:** good Processes model US production. • **Completeness:** very good • **Reliability:** very good Data is verified by ecoinvent.
Admixtures (oz) Accelerator Air Entrainer Retarding Waterproofing Plasticizer Superplasticizer	EFCA EcoProfiles (300, 301, 302, 303, 324 and 325) CLF PCR Default	EU	2005 - 2006	• **Technology:** very good Processes represents admixture production for use in concrete • **Time:** fair Data is within eleven years • **Geography:** fair • **Completeness:** good Data from a federation of European admixture producers • **Reliability:** good Profiles have undergone an independent review process. Compliance with ISO standards (unknown)

Table 1. A1 - Raw Material Supply

Materials	LCI Data Source	Geography	Year	Data Quality Assessment
Concrete Batch and Wash Water (lbs)	Primary	USA	2013 & 2015	• **Technology:** very good Data represents fresh batch water, recycled wash water used as batch water and wash water inputs • **Time:** very good Data is within three years • **Geography:** very good • **Completeness:** very good Primary data from core processes survey • **Reliability:** very good Data based on specified use
Crushed Returned Concrete (lbs)	Primary (Pre-consumer, burden of crushing is reported and included in module A3)	USA	2013 & 2015	• **Technology:** very good Primary data collected via industry survey • **Time:** very good Data is within three years • **Geography:** very good • **Completeness:** very good Primary data from core processes survey • **Reliability:** very good • Data based on specified use
Crushed Demolition Concrete (lbs)	LCI Slag Cement Manufacturing (crushing data used as proxy)	USA	2003	• **Technology:** good Process models crushing of blast furnace slag. • **Time:** fair Data is within thirteen years. • **Geography:** very good • **Completeness:** fair • **Reliability:** fair

Table 2. A2 - Transportation

Process	LCI Data Source	Geography	Year	Data Quality Assessment
Rail, ocean freighter and barge* (lbs*miles)	USLCI - rail transport, diesel powered; ocean freighter, average fuel mix; barge, average fuel mix	USA	2008	• **Technology:** very good Processes represents U.S average transportation profiles • **Time:** fair Data is within ten years • **Geography:** good • **Completeness:** good (all data place holders filled) Data is representative of US conditions • **Reliability:** good • Data is from USLCI database

Table 2. A2 - Transportation				
Process	**LCI Data Source**	**Geography**	**Year**	**Data Quality Assessment**
Road (lbs*miles)	USLCI 2014 – single unit truck transport, diesel powered, short haul US avg.;	USA	2014	• **Technology:** very good Processes represents U.S average transportation profiles • **Time:** very good Data is within two years • **Geography:** good • **Completeness:** good (all data place holders filled) Data is representative of US conditions • **Reliability:** good • Data is from USLCI database

Table 3. A3 - Manufacturing				
Process	**LCI Data Source**	**Geography**	**Year**	**Data Quality Assessment**
Electricity (kWh)	California purchased electricity grid mix-Electricity, medium voltage, WECC at grid, US (ecoinvent v3.01)	US	2008/ 2013	• **Technology:** very good Process represents production of electricity in the appropriate NERC region. **Time:** fair/good Electricity production data is within ten years. NERC regional production breakdown from 2013. • **Geography:** very good • **Completeness:** good Data is representative of US production • **Reliability:** good ecoinvent has verified the data
Natural Gas (cu.ft.)	USLCI, Natural gas, combusted in industrial boiler/US	US	2008	• **Technology:** very good Process represents combustion of natural gas in an industrial boiler. • **Time:** fair Data is within ten years • **Geography:** fair • **Completeness:** good Data is representative of US conditions • **Reliability:** good Data is from USLCI database
Fuel Oil (other than diesel), (gallon)	US LCI: Residual fuel oil, combusted in industrial boiler/US	US	2008	• **Technology:** very good Process represents combustion of RFO in an industrial boiler. • **Time:** fair Data is within ten years • **Geography:** fair • **Completeness:** good Data is representative of US conditions • **Reliability:** good • Data is from USLCI database

Table 3. A3 - Manufacturing				
Process	**LCI Data Source**	**Geography**	**Year**	**Data Quality Assessment**
Diesel (gallon)	US LCI: Diesel, combusted in industrial equipment/US	US	2008	• **Technology:** very good Process represents combustion of diesel in industrial equipment. • **Time:** fair Data is within ten years • **Geography:** fair • **Completeness:** good Data is representative of US conditions • **Reliability:** good Data is from USLCI database
Gasoline (gallon)	US LCI: Gasoline, combusted in equipment/US	US	2008	• **Technology:** very good Process represents combustion of gasoline in equipment. • **Time:** fair Data is within ten years • **Geography:** fair • **Completeness:** good Data is representative of US conditions • **Reliability:** good • Data is from USLCI database
Liquefied Propane Gas (gallon)	US LCI: Liquefied petroleum gas, combusted in industrial boiler/US	US	2008	• **Technology:** very good Process represents combustion of LPG in industrial boiler. • **Time:** fair Data is within ten years • **Geography:** fair • **Completeness:** good Data is representative of US conditions • **Reliability:** good • Data is from USLCI database
Hazardous Solid Waste, (lbs)	ecoinvent 3.1, 2014 -Hazardous waste, for incineration {US}| treatment of hazardous waste, hazardous waste incineration | Alloc Def, U	EU	2008	• **Technology:** good • **Time:** fair Data is within ten years. • **Geography:** fair Processes model Swiss production (no US process in USLCI database). • **Completeness:** very good • **Reliability:** very good Data is verified by Ecoinvent.
Non-Hazardous Solid Waste, (lbs)	ecoinvent 3.1, 2014 -Waste concrete {US}| treatment of, inert material landfill | Alloc Def, U	EU	2008	• **Technology:** good • **Time:** fair Data is within ten years. • **Geography:** fair Processes model Swiss production (no US process in USLCI database). • **Completeness:** very good • **Reliability:** very good Data is verified by Ecoinvent.

Data Quality

Data quality requirements, as specified in the CLF PCR: 2013, sections 3.5 and 3.6, are applied and reported in Tables 1 to 3. This section also describes the achieved data quality relative to the ISO 14044:2006 requirements. This LCA and resulting EPD was created using industry average data for upstream materials. Data variation can result from differences in supplier locations, manufacturing processes, manufacturing efficiency and fuel types used. Data quality is judged on the basis of its representativeness (technological, temporal, and geographical), completeness (e.g., unreported emissions), consistency and reliability.

All LCI data (Tables 1 to 3) are assessed on the basis of the five data quality indicators listed below. Each indicator is interpreted with respect to its context and key determining data parameters are discussed to provide clarity as to how the overall quality of each indicator is assessed and stated.

Technical representativeness: Overall quality - Good to very good

The degree to which the data reflects the actual technology(ies) used. Core manufacturing process technology is derived from the manufacturing facilities. These data are deemed to be reflective of typical or average technologies used by CalPortland in the production of ready-mixed concrete. Some background material and process data are European but deemed to be similar to technologies used in the US and are often cited as preferred "default data" in the governing CLF PCR.

Temporal representativeness: Overall quality - Fair to very good

The degree to which the data reflects the actual time (e.g. year) or age of the activity. Core manufacturing process data is very recent (2016). All other LCI data sources are less than 10 years old.

Geographical representativeness: Overall quality - Fair to very good

The degree to which the data reflects the actual geographic location of the activity (e.g. country or site). Geographical coverage of core manufacturing processes is specific to California. All background energy profiles reflect US conditions and the electricity grid that was specified for the CalPortland facilities was the WECC NERC region. Some material (aggregates and admixtures) and process data are based on European sources. These data have been previously verified or listed in the governing PCR for default use.

Completeness: Overall quality - Good to very good

The degree to which the data are statistically representative of the relevant activity. Completeness includes the percentage of locations for which data is available and used out of the total number that relate to a specific activity. Core manufacturing processes are very complete and were derived from data gathered at the participating facility. These data reflect annual operations inclusive of seasonal and other normal annual fluctuations in operations. All relevant, specific processes, including inputs (raw materials, energy and ancillary materials) and outputs (emissions and production volume) were considered and modeled to represent the specified and declared RMC products. The relevant background materials and processes were taken from the US LCI Database (adjusted for known data placeholders); US system boundary adjusted ecoinvent v 2.2 and v3.0 LCI databases and modeled in SimaPro software v.8.0.1, 2014. Efforts were made to ensure that all data used was as complete as reasonably possible.

Reliability: Overall quality - Fair to very good

The degree to which the sources, data collection methods and verification procedures used to obtain the data are dependable. For core manufacturing processes the reliability of the information and data is deemed to be very good as these were derived from specific data of the RMC production facilities. Similarly, the LCI data for portland cement, at plant, reflects an update to the older PCR default database whereby missing upstream impacts associated with fuel and energy production have been filled. All missing process data (dummies) associated with the US LCI data have been consistently filled. All other LCI data have been incorporated in accordance with the default PCR requirements or derived from ecoinvent databases, which have been verified by ecoinvent.

Furthermore, the data quality is evaluated on the basis the precision, consistency and reproducibility.

Precision: CalPortland, through measurement and calculation, collected primary data on their annual production of RMC products. For accuracy the LCA team validated these gate-to-gate input and output data.

Consistency: To ensure consistency, the LCI modeling of the production weighted input and output LCI data for the declared products used the same modeling structure across the respective product systems, which consisted of input raw and ancillary material, energy flows, water resource inputs, product and co-products outputs, returned and recovered concrete materials, emissions to air, water and soil, and waste recycling and treatment. The same background LCI were used across all RMC product systems LCI modeling. Crosschecks concerning the plausibility of mass and energy flows were continuously conducted. The LCA team conducted mass and energy balances for the RMC plant to maintain a high level of consistency.

Reproducibility: Internal reproducibility is possible since the data are stored in an available calculator (CalPortland Concrete EPD Calculator, 2017). A considerable level of transparency is provided throughout the report as the specifications and material quantity make-up for the declared RMC products are presented and key primary and secondary LCI data sources are summarized in Tables 1, 2, and 3. The provision of more detailed data to allow full external reproducibility was not possible due to reasons of confidentiality.

Life Cycle Assessment Results

Environmental Indicators and Inventory Metrics

This EPD supports 15 life cycle impact assessment indicators and inventory metrics as listed in Table 4. As specified in the CLF PCR 2013, Section 8., the US EPA Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI), version 2.1, 2012 impact categories were used to calculate mandatory category indicators.

Table 4. Life Cycle Category Indicators and Inventory Metrics

#	LCIA Indicators	Abbreviations	Units
1	Global Warming Potential (climate change)	**GWP**	kg CO2-eq
2	Ozone Depletion Potential	**ODP**	kg CFC-11-eq
3	Acidification Potential	**AP**	kg SO2-eq
4	Eutrophication Potential	**EP**	kg N-eq
5	Photochemical Ozone Creation/Smog Potential	**POCP**	kg O3-eq
	Inventory Metrics		
6	Total primary energy consumption	**PEC**	MJ (HHV)
7	Depletion of non-renewable energy resources	**NRE**	MJ (HHV)
8	Use of renewable primary energy	**RE**	MJ (HHV)
9	Depletion of non-renewable material resources	**NRM**	kg
10	Use of renewable material resources	**RM**	kg
11	Concrete batching water consumption	**CBW**	m3
12	Concrete washing water consumption	**CWW**	m3
13	Total water consumption	**TW**	m3
14	Concrete hazardous waste	**CHW**	kg
15	Concrete non-hazardous waste	**CNHW**	kg

The CLF PCR 2013 also requires the reporting of carbon emissions from biofuel combustion. No biofuels are combusted in the life cycle of any of the products declared in this EPD and thus this metric was excluded from the results.

Tables 5 through 28 present the LCA results for the mixes produced at the different facilities. The results are presented first on the basis of a declared unit of 1 cubic yard (Tables 5-16) and on the basis of 1 cubic meter (Tables 17-28).

Table 5: Impact Assessment results for ready mix concrete produced at Calportland's Alameda Ready Mix Plant
Calculated Results A1-A3 per yd3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
45CF44	4000	28	299.18	7.22E-06	0.85	0.34	17.06	1911.92	1874.79	37.12	1784.17	2.14	0.14	0.11	0.25	0.01	2.29
50C4	4000	28	320.11	7.82E-06	0.91	0.37	18.24	2048.12	2008.11	40.01	1864.47	2.32	0.14	0.11	0.25	0.02	2.49
50CF4	4000	28	264.29	6.43E-06	0.77	0.31	15.50	1732.21	1698.93	33.28	1781.08	1.91	0.14	0.11	0.25	0.01	2.02
592CWP4	4000	28	313.86	7.66E-06	0.89	0.36	17.95	2012.98	1973.77	39.21	1861.73	2.27	0.14	0.11	0.25	0.02	2.44
714EWP4	4000	28	371.60	9.00E-06	1.03	0.43	20.85	2322.95	2277.43	45.53	1797.66	2.65	0.16	0.11	0.27	0.02	2.94
LX752S4	4000	28	466.12	1.80E-05	1.74	0.59	25.21	3632.85	3582.49	50.36	1585.21	9.14	0.15	0.11	0.26	0.02	2.68
OF25C441A	4000	28	299.87	5.79E-06	1.81	0.34	47.19	2286.49	2241.09	45.40	307.37	1.83	0.12	0.11	0.23	0.01	1.99
45C4	4500	28	360.58	8.81E-06	1.01	0.42	20.21	2274.02	2229.20	44.82	1876.71	2.61	0.14	0.11	0.26	0.02	2.84
45EF6Z	5000	28	324.29	7.79E-06	0.91	0.37	18.51	2069.93	2030.43	39.49	1740.96	2.29	0.15	0.11	0.27	0.02	2.51
696CWP4	5000	28	364.29	8.89E-06	1.02	0.42	20.44	2297.45	2252.25	45.20	1898.41	2.63	0.14	0.11	0.25	0.02	2.87
705CWP4	5000	28	368.30	9.00E-06	1.03	0.43	20.58	2317.35	2271.59	45.76	1880.45	2.66	0.14	0.11	0.26	0.02	2.90
720CFWP4	5000	28	323.20	7.89E-06	0.91	0.37	18.35	2062.92	2022.53	40.39	1810.90	2.34	0.14	0.11	0.26	0.02	2.52
827EWP4	5000	28	425.55	1.03E-05	1.16	0.49	23.42	2619.90	2567.93	51.97	1783.02	3.04	0.18	0.11	0.29	0.02	3.41
O45C4	5000	28	376.40	7.59E-06	2.06	0.43	52.85	2749.84	2694.76	55.08	404.97	2.36	0.13	0.11	0.24	0.02	2.61
O50C4	5000	28	342.75	6.73E-06	2.00	0.39	51.92	2570.28	2518.95	51.34	358.14	2.11	0.13	0.11	0.24	0.01	2.31
O50D4	5000	28	390.54	8.04E-06	2.03	0.44	51.43	2795.28	2738.38	56.90	429.68	2.48	0.15	0.11	0.26	0.02	2.76
OF25C7Z45	6000	56	287.84	5.36E-06	1.86	0.33	48.95	2266.13	2221.79	44.34	282.02	1.70	0.12	0.11	0.23	0.01	1.83
O40C4	6000	28	418.94	8.68E-06	2.14	0.48	54.03	2976.89	2917.00	59.90	464.16	2.67	0.13	0.11	0.24	0.02	2.98
O42C6Z	6000	28	394.73	8.02E-06	2.10	0.45	53.62	2862.10	2805.15	56.95	426.44	2.47	0.13	0.11	0.24	0.02	2.74
O45D4	6000	28	429.80	9.04E-06	2.10	0.49	52.51	3004.74	2943.42	61.32	484.31	2.77	0.15	0.11	0.27	0.02	3.11
O40D4	7000	28	478.97	1.03E-05	2.18	0.55	53.68	3263.84	3197.08	66.76	553.26	3.14	0.16	0.11	0.27	0.02	3.54
40C4	4000	7	408.31	9.98E-06	1.13	0.47	22.52	2541.18	2490.61	50.57	1895.37	2.95	0.14	0.11	0.26	0.02	3.25
8000#1R	8000	56	506.48	1.23E-05	1.38	0.59	27.33	3101.90	3039.90	62.00	1840.18	3.64	0.16	0.11	0.28	0.03	4.08
F25C445	5000	56	270.54	6.58E-06	0.78	0.31	15.80	1766.90	1732.89	34.01	1762.85	1.96	0.14	0.11	0.25	0.01	2.07
F40C4405	5000	56	247.39	6.00E-06	0.72	0.29	14.64	1633.03	1601.84	31.19	1675.10	1.79	0.14	0.11	0.25	0.01	1.88
O30D2S8	10000	90	498.44	1.08E-05	2.19	0.57	53.17	3372.03	3303.93	68.10	581.21	3.28	0.15	0.11	0.26	0.02	3.72
O35D2S8	8000	56	427.16	8.99E-06	2.07	0.49	51.45	2992.29	2931.86	60.42	481.70	2.75	0.15	0.11	0.26	0.02	3.09
OCT770D6Z	7000	56	351.20	7.08E-06	1.89	0.40	48.29	2568.39	2517.06	51.32	375.67	2.19	0.14	0.11	0.26	0.02	2.42
OF25C6Z50	5000	56	267.57	4.85E-06	1.82	0.30	48.44	2157.69	2115.33	42.36	254.06	1.55	0.12	0.11	0.23	0.01	1.65
OF40D836	8000	56	299.37	5.72E-06	1.84	0.34	47.92	2318.64	2272.66	45.98	302.83	1.81	0.13	0.11	0.24	0.01	1.96

Table 6: Impact Assessment results for ready mix concrete produced at Calportland's El Segundo Ready Mix Plant
Calculated Results A1-A3 per yd3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
45CF44	4000	28	306.10	7.26E-06	0.89	0.35	18.12	2010.47	1971.89	38.58	1784.17	2.15	0.14	0.25	0.39	0.01	2.29
50C4	4000	28	327.08	7.85E-06	0.95	0.38	19.31	2147.29	2105.83	41.46	1864.47	2.33	0.14	0.25	0.39	0.02	2.49
50CF4	4000	28	271.07	6.47E-06	0.81	0.31	16.53	1828.83	1794.10	34.73	1781.08	1.92	0.14	0.25	0.39	0.01	2.02
592CWP4	4000	28	320.65	7.69E-06	0.93	0.37	18.99	2109.73	2069.07	40.66	1861.73	2.28	0.14	0.25	0.39	0.02	2.44
714EWP4	4000	28	376.76	9.03E-06	1.06	0.43	21.60	2397.32	2350.34	46.98	1797.66	2.66	0.16	0.25	0.41	0.02	2.94
LX752S4	4000	28	468.54	1.81E-05	1.76	0.59	25.49	3669.72	3617.91	51.81	1585.21	9.15	0.15	0.25	0.40	0.02	2.68
OF25C441A	4000	28	300.29	5.82E-06	1.81	0.34	47.11	2295.76	2248.91	46.85	307.37	1.84	0.12	0.25	0.37	0.01	1.99
45C4	4500	28	367.62	8.84E-06	1.05	0.42	21.29	2374.20	2327.93	46.27	1876.71	2.62	0.14	0.25	0.39	0.02	2.84
45EF6Z	5000	28	329.46	7.82E-06	0.94	0.38	19.26	2144.48	2103.54	40.94	1740.97	2.30	0.15	0.25	0.40	0.02	2.51
696CWP4	5000	28	371.25	8.92E-06	1.06	0.43	21.51	2396.41	2349.76	46.66	1898.42	2.64	0.14	0.25	0.39	0.02	2.87
705CWP4	5000	28	375.43	9.03E-06	1.07	0.43	21.68	2418.77	2371.56	47.21	1880.45	2.67	0.14	0.25	0.39	0.02	2.90
720CFWP4	5000	28	330.43	7.92E-06	0.96	0.38	19.46	2165.77	2123.93	41.84	1810.90	2.35	0.14	0.25	0.39	0.02	2.52
827EWP4	5000	28	430.80	1.04E-05	1.19	0.49	24.19	2695.56	2642.15	53.42	1783.03	3.05	0.18	0.25	0.43	0.02	3.41
O45C4	5000	28	376.78	7.62E-06	2.06	0.43	52.76	2758.58	2702.04	56.53	404.97	2.37	0.13	0.25	0.38	0.02	2.61
O50C4	5000	28	342.91	6.77E-06	2.00	0.39	51.80	2576.08	2523.29	52.79	358.14	2.12	0.13	0.25	0.38	0.01	2.31
O50D4	5000	28	391.13	8.07E-06	2.03	0.45	51.38	2806.96	2748.61	58.35	429.68	2.50	0.15	0.25	0.40	0.02	2.76
OF25C7Z45	6000	56	287.99	5.39E-06	1.86	0.33	48.83	2271.87	2226.07	45.79	282.03	1.71	0.12	0.25	0.37	0.01	1.83
O40C4	6000	28	419.59	8.71E-06	2.14	0.48	53.99	2989.34	2928.00	61.35	464.16	2.68	0.13	0.25	0.38	0.02	2.98
O42C6Z	6000	28	395.19	8.05E-06	2.11	0.45	53.54	2871.98	2813.59	58.40	426.44	2.49	0.13	0.25	0.38	0.02	2.74
O45D4	6000	28	430.64	9.07E-06	2.10	0.49	52.50	3019.85	2957.08	62.77	484.32	2.79	0.15	0.25	0.40	0.02	3.11
O40D4	7000	28	480.14	1.03E-05	2.19	0.55	53.73	3283.42	3215.22	68.21	553.26	3.15	0.16	0.25	0.41	0.02	3.54
40C4	4000	7	415.67	1.00E-05	1.17	0.48	23.65	2645.72	2593.70	52.02	1895.38	2.96	0.14	0.25	0.39	0.02	3.25
8000#1R	8000	56	513.86	1.24E-05	1.42	0.59	28.48	3206.78	3143.33	63.45	1840.18	3.65	0.16	0.25	0.41	0.03	4.08
F25C445	5000	56	277.45	6.62E-06	0.82	0.32	16.86	1865.37	1829.91	35.46	1762.86	1.97	0.14	0.25	0.39	0.01	2.07
F40C4405	5000	56	254.34	6.04E-06	0.77	0.29	15.70	1731.89	1699.25	32.64	1675.11	1.80	0.14	0.25	0.39	0.01	1.88
O30D2S8	10000	90	500.09	1.09E-05	2.20	0.57	53.31	3398.20	3328.65	69.55	581.22	3.29	0.15	0.25	0.40	0.02	3.72
O35D2S8	8000	56	428.29	9.03E-06	2.07	0.49	51.49	3011.36	2949.48	61.87	481.71	2.77	0.15	0.25	0.40	0.02	3.09
OCT770D6Z	7000	56	352.01	7.11E-06	1.90	0.40	48.27	2583.06	2530.28	52.77	375.67	2.20	0.14	0.25	0.39	0.02	2.42
OF25C6Z50	5000	56	267.57	4.88E-06	1.82	0.30	48.29	2161.26	2117.45	43.81	254.06	1.56	0.12	0.25	0.37	0.01	1.65
OF40D836	8000	56	300.00	5.75E-06	1.84	0.34	47.88	2330.89	2283.45	47.43	302.84	1.82	0.13	0.25	0.38	0.01	1.96

Table 7: Impact Assessment results for ready mix concrete produced at Calportland's LAX Ready Mix Plant
Calculated Results A1-A3 per yd3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
45CF44	4000	28	305.48	7.23E-06	0.89	0.35	18.15	1998.90	1961.56	37.34	1784.17	2.15	0.14	0.14	0.28	0.01	2.29
50C4	4000	28	326.41	7.82E-06	0.95	0.37	19.32	2134.97	2094.75	40.23	1864.47	2.32	0.14	0.14	0.28	0.02	2.49
50CF4	4000	28	270.50	6.44E-06	0.81	0.31	16.57	1817.95	1784.46	33.49	1781.08	1.91	0.14	0.14	0.28	0.01	2.02
592CWP4	4000	28	319.97	7.66E-06	0.93	0.37	19.01	2097.33	2057.90	39.43	1861.73	2.27	0.14	0.14	0.28	0.02	2.44
714EWP4	4000	28	375.77	9.00E-06	1.06	0.43	21.56	2380.76	2335.02	45.75	1797.66	2.66	0.16	0.14	0.30	0.02	2.94
LX752S4	4000	28	467.32	1.80E-05	1.75	0.59	25.40	3649.87	3599.29	50.58	1585.21	9.14	0.15	0.14	0.29	0.02	2.68
OF25C441A	4000	28	300.18	5.80E-06	1.81	0.34	47.22	2291.18	2245.56	45.62	307.37	1.83	0.12	0.14	0.26	0.01	1.99
45C4	4500	28	366.87	8.81E-06	1.05	0.42	21.29	2360.85	2315.81	45.04	1876.71	2.61	0.14	0.14	0.29	0.02	2.84
45EF6Z	5000	28	328.59	7.80E-06	0.94	0.38	19.25	2129.52	2089.81	39.71	1740.96	2.29	0.15	0.14	0.30	0.02	2.51
696CWP4	5000	28	370.48	8.89E-06	1.06	0.42	21.51	2382.83	2337.41	45.42	1898.41	2.63	0.14	0.14	0.28	0.02	2.87
705CWP4	5000	28	374.67	9.00E-06	1.07	0.43	21.68	2405.34	2359.36	45.98	1880.45	2.66	0.14	0.14	0.29	0.02	2.90
720CFWP4	5000	28	329.79	7.89E-06	0.96	0.38	19.48	2153.91	2113.31	40.61	1810.90	2.34	0.14	0.14	0.29	0.02	2.52
827EWP4	5000	28	429.71	1.03E-05	1.19	0.49	24.13	2677.60	2625.42	52.19	1783.02	3.04	0.18	0.14	0.32	0.02	3.41
O45C4	5000	28	376.57	7.60E-06	2.06	0.43	52.86	2752.62	2697.32	55.30	404.97	2.36	0.13	0.14	0.27	0.02	2.61
O50C4	5000	28	342.77	6.74E-06	2.00	0.39	51.91	2571.16	2519.60	51.56	358.14	2.11	0.13	0.14	0.27	0.01	2.31
O50D4	5000	28	390.83	8.05E-06	2.03	0.44	51.46	2799.77	2742.65	57.12	429.68	2.49	0.15	0.14	0.29	0.02	2.76
OF25C7Z45	6000	56	287.97	5.36E-06	1.86	0.33	48.96	2268.59	2224.03	44.56	282.02	1.70	0.12	0.14	0.26	0.01	1.83
O40C4	6000	28	419.28	8.68E-06	2.14	0.48	54.07	2982.08	2921.97	60.11	464.16	2.67	0.13	0.14	0.27	0.02	2.98
O42C6Z	6000	28	394.94	8.02E-06	2.11	0.45	53.64	2865.64	2808.47	57.17	426.44	2.48	0.13	0.14	0.27	0.02	2.74
O45D4	6000	28	430.25	9.05E-06	2.10	0.49	52.57	3011.45	2949.91	61.54	484.32	2.78	0.15	0.14	0.30	0.02	3.11
O40D4	7000	28	479.63	1.03E-05	2.19	0.55	53.78	3273.43	3206.45	66.97	553.26	3.14	0.16	0.14	0.30	0.02	3.54
40C4	4000	7	414.85	9.99E-06	1.17	0.48	23.64	2631.50	2580.71	50.79	1895.37	2.95	0.14	0.14	0.29	0.02	3.25
8000#1R	8000	56	512.85	1.23E-05	1.42	0.59	28.43	3189.93	3127.71	62.22	1840.18	3.64	0.16	0.14	0.31	0.03	4.08
F25C445	5000	56	276.89	6.59E-06	0.82	0.32	16.90	1854.59	1820.37	34.23	1762.86	1.96	0.14	0.14	0.28	0.01	2.07
F40C4405	5000	56	253.84	6.01E-06	0.76	0.29	15.75	1721.99	1690.58	31.41	1675.10	1.79	0.14	0.14	0.28	0.01	1.88
O30D2S8	10000	90	499.54	1.08E-05	2.20	0.57	53.35	3387.71	3319.39	68.32	581.21	3.28	0.15	0.14	0.29	0.02	3.72
O35D2S8	8000	56	427.91	9.00E-06	2.07	0.49	51.56	3003.07	2942.43	60.64	481.70	2.76	0.15	0.14	0.29	0.02	3.09
OCT770D6Z	7000	56	351.79	7.08E-06	1.89	0.40	48.37	2576.96	2525.42	51.54	375.67	2.19	0.14	0.14	0.29	0.02	2.42
OF25C6Z50	5000	56	267.59	4.85E-06	1.82	0.30	48.43	2158.56	2115.99	42.57	254.06	1.56	0.12	0.14	0.26	0.01	1.65
OF40D836	8000	56	299.95	5.72E-06	1.84	0.34	48.00	2327.21	2281.01	46.20	302.83	1.81	0.13	0.14	0.27	0.01	1.96

Table 8: Impact Assessment results for ready mix concrete produced at Calportland's Live Oak Ready Mix Plant
Calculated Results A1-A3 per yd3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
HGG20P8	2000	28	268.73	6.34E-06	0.79	0.31	16.15	1812.14	1773.85	38.29	1631.63	1.88	0.20	0.25	0.45	0.01	1.98
H470CWP4	2500	28	268.25	6.38E-06	0.82	0.31	16.76	1882.40	1843.63	38.76	1849.57	1.90	0.14	0.25	0.39	0.01	1.94
H520C2500	2500	28	292.19	6.97E-06	0.88	0.34	17.91	2014.06	1972.40	41.66	1840.64	2.07	0.15	0.25	0.40	0.01	2.14
H564EWP4	2500	28	308.93	7.36E-06	0.91	0.36	18.44	2066.85	2023.57	43.28	1757.75	2.18	0.16	0.25	0.42	0.02	2.32
H498CWP4	3000	28	281.81	6.71E-06	0.86	0.33	17.43	1958.67	1918.30	40.37	1855.39	2.00	0.14	0.25	0.39	0.01	2.05
HR355W4G	3000	28	290.82	6.93E-06	0.88	0.34	17.87	2007.56	1966.16	41.41	1861.08	2.06	0.14	0.25	0.39	0.01	2.13
HR360W4G1	3000	28	313.23	7.47E-06	0.94	0.36	18.96	2130.24	2086.23	44.01	1871.17	2.22	0.14	0.25	0.39	0.02	2.32
H560C3250	3250	28	311.57	7.44E-06	0.93	0.36	18.87	2123.14	2079.19	43.95	1850.94	2.21	0.15	0.25	0.40	0.01	2.31
H660E3250P	3250	28	355.40	8.50E-06	1.02	0.41	20.74	2327.28	2278.47	48.81	1782.56	2.51	0.18	0.25	0.43	0.02	2.72
H545CWP4	3500	28	304.69	7.26E-06	0.92	0.35	18.57	2088.39	2045.31	43.08	1870.72	2.16	0.14	0.25	0.39	0.01	2.24
H658EWP4	3500	28	354.27	8.47E-06	1.02	0.41	20.65	2320.57	2271.90	48.67	1764.10	2.50	0.18	0.25	0.44	0.02	2.71
H50C4	4000	28	333.70	7.98E-06	0.99	0.39	19.99	2251.44	2204.89	46.55	1871.64	2.37	0.14	0.25	0.39	0.02	2.49
H592CWP4	4000	28	327.18	7.81E-06	0.97	0.38	19.66	2212.60	2166.85	45.75	1868.42	2.32	0.14	0.25	0.39	0.02	2.44
H714EWP4	4000	28	382.50	9.16E-06	1.10	0.44	22.13	2489.44	2437.37	52.07	1807.21	2.70	0.16	0.25	0.41	0.02	2.94
HGC40P4	4000	28	283.98	6.76E-06	0.86	0.33	17.50	1969.02	1928.35	40.67	1816.24	2.01	0.14	0.25	0.39	0.01	2.07
HGC45P4	4000	28	311.52	7.43E-06	0.93	0.36	18.85	2123.36	2079.43	43.93	1824.74	2.21	0.14	0.25	0.39	0.01	2.31
H45C4	4500	28	374.24	8.96E-06	1.09	0.43	21.97	2478.31	2426.96	51.35	1882.45	2.66	0.14	0.25	0.40	0.02	2.84
H50E4	4500	28	380.27	9.11E-06	1.09	0.44	21.99	2474.36	2422.54	51.82	1789.36	2.69	0.16	0.25	0.42	0.02	2.92
H752EWP2	4500	28	377.68	9.04E-06	1.08	0.44	21.88	2457.86	2406.44	51.43	1808.02	2.67	0.17	0.25	0.42	0.02	2.90
H752EWP4	4500	28	400.74	9.60E-06	1.14	0.46	23.01	2590.77	2536.54	54.23	1804.30	2.83	0.18	0.25	0.43	0.02	3.10
H45E4	5000	28	439.66	1.06E-05	1.24	0.51	24.90	2807.05	2748.18	58.87	1803.62	3.11	0.17	0.25	0.43	0.02	3.43
H696CWP4	5000	28	377.84	9.05E-06	1.10	0.44	22.19	2500.16	2448.42	51.74	1905.11	2.68	0.14	0.25	0.39	0.02	2.87
H705CWP4	5000	28	382.10	9.16E-06	1.11	0.44	22.37	2523.58	2471.28	52.30	1886.66	2.71	0.14	0.25	0.40	0.02	2.90
H827EWP4	5000	28	436.54	1.05E-05	1.23	0.50	24.72	2787.61	2729.11	58.50	1791.14	3.09	0.18	0.25	0.43	0.02	3.41
H40E4	6000	28	506.29	1.22E-05	1.40	0.58	28.18	3184.85	3118.01	66.84	1820.33	3.59	0.18	0.25	0.43	0.03	4.00
H40C4	5500	56	422.47	1.01E-05	1.21	0.49	24.37	2752.34	2695.23	57.11	1902.54	3.00	0.14	0.25	0.40	0.02	3.25
H6000#2W	6000	56	388.07	9.28E-06	1.12	0.45	22.55	2552.75	2499.94	52.81	1812.56	2.74	0.15	0.25	0.40	0.02	2.97
H8000#1R	8000	90	519.71	1.25E-05	1.46	0.60	29.03	3300.09	3231.59	68.51	1832.10	3.69	0.16	0.25	0.42	0.03	4.08
HF25C445	4000	56	283.08	6.74E-06	0.86	0.33	17.37	1955.88	1915.34	40.55	1768.60	2.01	0.14	0.25	0.39	0.01	2.07
HF389W4U	6000	56	405.79	9.73E-06	1.17	0.47	23.49	2652.54	2597.47	55.07	1862.97	2.88	0.14	0.25	0.40	0.02	3.11

Table 9: Impact Assessment results for ready mix concrete produced at Calportland's Normandie Ready Mix Plant Calculated Results A1-A3 per yd3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
45CF44	4000	28	305.13	7.23E-06	0.88	0.35	18.06	1993.83	1956.53	37.30	1784.17	2.15	0.14	0.13	0.27	0.01	2.29
50C4	4000	28	326.12	7.82E-06	0.94	0.37	19.25	2130.91	2090.73	40.18	1864.47	2.32	0.14	0.13	0.26	0.02	2.49
50CF4	4000	28	270.04	6.44E-06	0.80	0.31	16.46	1811.46	1778.01	33.45	1781.08	1.91	0.14	0.13	0.26	0.01	2.02
592CWP4	4000	28	319.70	7.66E-06	0.93	0.37	18.93	2093.45	2054.06	39.38	1861.73	2.27	0.14	0.13	0.26	0.02	2.44
714EWP4	4000	28	376.11	9.00E-06	1.06	0.43	21.60	2385.19	2339.49	45.70	1797.66	2.65	0.16	0.13	0.29	0.02	2.94
LX752S4	4000	28	468.14	1.80E-05	1.76	0.59	25.52	3660.93	3610.39	50.53	1585.21	9.14	0.15	0.13	0.27	0.02	2.68
OF25C441A	4000	28	296.95	5.80E-06	1.79	0.34	46.63	2246.70	2201.13	45.57	307.37	1.83	0.12	0.13	0.24	0.01	1.99
45C4	4500	28	366.74	8.81E-06	1.05	0.42	21.25	2358.85	2313.86	44.99	1876.71	2.61	0.14	0.13	0.27	0.02	2.84
45EF6Z	5000	28	328.73	7.80E-06	0.94	0.38	19.24	2131.26	2091.60	39.66	1740.96	2.29	0.15	0.13	0.28	0.02	2.51
696CWP4	5000	28	370.38	8.89E-06	1.06	0.42	21.47	2381.30	2335.92	45.38	1898.41	2.63	0.14	0.13	0.26	0.02	2.87
705CWP4	5000	28	374.56	9.00E-06	1.07	0.43	21.63	2403.51	2357.58	45.93	1880.45	2.66	0.14	0.13	0.27	0.02	2.90
720CFWP4	5000	28	329.48	7.89E-06	0.95	0.38	19.40	2149.37	2108.81	40.56	1810.90	2.34	0.14	0.13	0.27	0.02	2.52
827EWP4	5000	28	430.26	1.03E-05	1.19	0.49	24.20	2684.83	2632.69	52.14	1783.02	3.04	0.18	0.13	0.30	0.02	3.41
O45C4	5000	28	373.37	7.60E-06	2.04	0.43	52.27	2708.62	2653.36	55.25	404.97	2.36	0.13	0.13	0.25	0.02	2.61
O50C4	5000	28	339.38	6.74E-06	1.98	0.39	51.28	2524.48	2472.97	51.51	358.14	2.11	0.13	0.13	0.25	0.01	2.31
O50D4	5000	28	387.94	8.04E-06	2.01	0.44	50.93	2759.96	2702.89	57.07	429.68	2.49	0.15	0.13	0.28	0.02	2.76
OF25C7Z45	6000	56	284.40	5.36E-06	1.83	0.32	48.30	2219.38	2174.87	44.51	282.02	1.70	0.12	0.13	0.24	0.01	1.83
O40C4	6000	28	416.34	8.68E-06	2.12	0.48	53.52	2941.46	2881.40	60.07	464.16	2.67	0.13	0.13	0.26	0.02	2.98
O42C6Z	6000	28	391.81	8.02E-06	2.09	0.45	53.06	2822.47	2765.35	57.12	426.44	2.48	0.13	0.13	0.25	0.02	2.74
O45D4	6000	28	427.59	9.05E-06	2.09	0.49	52.08	2974.77	2913.28	61.49	484.32	2.78	0.15	0.13	0.28	0.02	3.11
O40D4	7000	28	477.28	1.03E-05	2.17	0.55	53.34	3240.98	3174.06	66.93	553.26	3.14	0.16	0.13	0.28	0.02	3.54
40C4	4000	7	414.85	9.99E-06	1.17	0.48	23.62	2631.24	2580.50	50.74	1895.37	2.95	0.14	0.13	0.27	0.02	3.25
8000#1R	8000	56	513.26	1.23E-05	1.42	0.59	28.48	3195.33	3133.16	62.17	1840.18	3.64	0.16	0.13	0.29	0.03	4.08
F25C445	5000	56	276.43	6.59E-06	0.82	0.32	16.79	1848.12	1813.94	34.18	1762.86	1.96	0.14	0.13	0.26	0.01	2.07
F40C4405	5000	56	253.30	6.01E-06	0.76	0.29	15.62	1714.33	1682.97	31.36	1675.10	1.79	0.14	0.13	0.26	0.01	1.88
O30D2S8	10000	90	497.40	1.08E-05	2.18	0.57	52.94	3358.18	3289.91	68.27	581.21	3.28	0.15	0.13	0.28	0.02	3.72
O35D2S8	8000	56	425.33	9.00E-06	2.06	0.49	51.08	2967.53	2906.93	60.60	481.70	2.76	0.15	0.13	0.27	0.02	3.09
OCT770D6Z	7000	56	348.87	7.08E-06	1.88	0.40	47.83	2536.69	2485.20	51.49	375.67	2.19	0.14	0.13	0.27	0.02	2.42
OF25C6Z50	5000	56	263.90	4.85E-06	1.80	0.30	47.75	2107.73	2065.20	42.53	254.06	1.56	0.12	0.13	0.24	0.01	1.65
OF40D836	8000	56	296.60	5.72E-06	1.82	0.34	47.39	2280.95	2234.80	46.15	302.83	1.81	0.13	0.13	0.25	0.01	1.96

Table 10: Impact Assessment results for ready mix concrete produced at Calportland's Sun Valley Ready Mix Plant
Calculated Results A1-A3 per yd3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
2470CWP4	2500	28	251.95	6.25E-06	0.71	0.30	14.00	1614.15	1580.73	33.43	1856.70	1.86	0.14	0.17	0.31	0.01	1.94
2564EWP4	2500	28	296.44	7.23E-06	0.83	0.34	16.74	1881.53	1843.60	37.93	1758.68	2.14	0.18	0.17	0.35	0.02	2.32
2498CWP4	3000	28	263.26	6.58E-06	0.75	0.31	14.67	1690.28	1655.24	35.03	1863.48	1.96	0.14	0.17	0.31	0.01	2.05
2611EWP4	3000	28	319.61	7.80E-06	0.89	0.37	17.92	2015.72	1975.04	40.69	1805.46	2.30	0.16	0.17	0.34	0.02	2.52
2560C3250	3250	28	292.62	7.31E-06	0.82	0.35	16.04	1849.38	1810.77	38.61	1857.12	2.17	0.15	0.17	0.32	0.01	2.31
250E4	4000	28	396.03	9.70E-06	1.08	0.46	21.51	2437.83	2387.82	50.01	1821.40	2.86	0.18	0.17	0.35	0.02	3.18
245CF4	4000	28	285.39	7.12E-06	0.80	0.34	15.73	1813.83	1776.14	37.69	1829.08	2.12	0.14	0.17	0.31	0.01	2.24
250C4	4000	28	315.50	7.86E-06	0.88	0.37	17.24	1983.81	1942.58	41.23	1889.90	2.33	0.14	0.17	0.31	0.02	2.50
2592CWP4	4000	28	308.72	7.69E-06	0.86	0.36	16.91	1945.58	1905.15	40.43	1886.03	2.28	0.14	0.17	0.31	0.02	2.44
2660C4000P	4000	28	341.63	8.49E-06	0.94	0.40	18.53	2130.62	2086.28	44.33	1903.11	2.52	0.14	0.17	0.31	0.02	2.72
2714EWP4	4000	28	368.42	9.02E-06	1.01	0.43	20.16	2282.17	2235.47	46.70	1798.61	2.66	0.18	0.17	0.35	0.02	2.94
2F25C445	4000	28	265.55	6.61E-06	0.75	0.31	14.78	1701.54	1666.34	35.21	1775.72	1.97	0.14	0.17	0.31	0.01	2.07
2LX752S4	4000	28	466.27	1.81E-05	1.74	0.59	25.10	3637.88	3586.34	51.54	1593.31	9.15	0.15	0.17	0.32	0.02	2.68
245C4	4500	28	348.39	8.66E-06	0.96	0.41	18.86	2168.53	2123.39	45.14	1906.02	2.57	0.14	0.17	0.31	0.02	2.78
245E6Z	4500	28	431.01	1.05E-05	1.16	0.50	23.18	2644.31	2590.45	53.86	1840.69	3.09	0.17	0.17	0.35	0.02	3.45
2R372W4G	4500	28	348.51	8.66E-06	0.96	0.41	18.89	2170.01	2124.90	45.11	1906.50	2.56	0.14	0.17	0.31	0.02	2.78
245E4	5000	28	436.56	1.07E-05	1.18	0.51	23.50	2664.69	2609.87	54.82	1834.59	3.15	0.18	0.17	0.35	0.02	3.52
240CF4	5000	28	318.67	7.92E-06	0.88	0.38	17.37	1999.53	1957.94	41.59	1823.94	2.35	0.14	0.17	0.31	0.02	2.52
242C4	5000	28	371.62	9.23E-06	1.02	0.44	20.00	2299.12	2251.23	47.89	1918.19	2.73	0.14	0.17	0.31	0.02	2.97
2696CWP4	5000	28	359.04	8.92E-06	0.98	0.42	19.38	2228.40	2182.00	46.40	1911.76	2.64	0.14	0.17	0.31	0.02	2.87
2700C5000P	5000	28	360.96	8.97E-06	0.99	0.42	19.47	2239.12	2192.49	46.63	1912.46	2.65	0.14	0.17	0.31	0.02	2.88
2705CWP4	5000	28	363.39	9.03E-06	1.00	0.43	19.59	2252.78	2205.86	46.92	1913.80	2.67	0.14	0.17	0.31	0.02	2.90
2827EWP4	5000	28	423.02	1.04E-05	1.15	0.49	22.83	2588.54	2535.33	53.21	1826.38	3.05	0.18	0.17	0.35	0.02	3.41
2F389W4U	6000	56	386.87	9.59E-06	1.05	0.45	20.72	2383.03	2333.35	49.67	1868.97	2.84	0.14	0.17	0.32	0.02	3.11
2LX781S4	5000	28	519.25	1.96E-05	1.89	0.65	27.63	3957.62	3899.89	57.73	1598.29	9.72	0.15	0.17	0.32	0.02	3.10
240E4	6000	28	491.19	1.21E-05	1.31	0.57	26.03	2963.83	2902.34	61.50	1826.03	3.55	0.18	0.17	0.35	0.03	4.00
26000#2W	6000	28	371.55	9.16E-06	1.02	0.43	20.15	2312.15	2264.68	47.47	1823.02	2.71	0.15	0.17	0.32	0.02	2.97
28000#1R	8000	56	501.47	1.24E-05	1.34	0.59	26.32	3036.01	2972.84	63.17	1840.18	3.65	0.16	0.17	0.34	0.03	4.08
2F25C440	5000	56	293.65	7.31E-06	0.82	0.35	16.16	1860.11	1821.52	38.59	1795.83	2.17	0.14	0.17	0.31	0.01	2.31
2F25C450	3000	56	238.49	5.97E-06	0.68	0.28	13.43	1550.40	1518.32	32.09	1790.28	1.78	0.14	0.17	0.31	0.01	1.84

Table 11: Assessment results for concrete produced at Calportland's Thousand Palms Ready Mix Plant
Calculated Results A1-A3 per yd3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
A470CWP4	2500	28	260.26	6.17E-06	0.76	0.29	15.71	1721.59	1690.56	31.03	1789.98	1.84	0.15	0.31	0.46	0.01	1.94
A564EWP4	2500	28	303.38	7.16E-06	0.88	0.34	18.20	1970.52	1934.95	35.57	1696.26	2.11	0.18	0.31	0.49	0.02	2.32
AR355W4G1	2500	28	281.54	6.70E-06	0.83	0.32	17.05	1858.52	1825.06	33.46	1802.44	1.98	0.15	0.31	0.46	0.01	2.13
CT632EFW4	2500	28	259.82	6.08E-06	0.77	0.29	16.07	1725.04	1694.76	30.28	1601.02	1.79	0.17	0.31	0.48	0.01	1.95
A498CWP4	3000	28	272.28	6.52E-06	0.80	0.31	16.48	1807.78	1775.09	32.69	1823.92	1.94	0.14	0.31	0.45	0.01	2.05
A50C4	3000	28	339.93	8.15E-06	0.98	0.39	19.95	2199.90	2159.25	40.65	1850.63	2.41	0.15	0.31	0.45	0.02	2.62
A57C4	3000	28	300.86	7.20E-06	0.88	0.34	17.96	1972.53	1936.53	36.00	1830.20	2.14	0.15	0.31	0.45	0.01	2.29
A611EWP4	3000	28	326.64	7.72E-06	0.94	0.37	19.40	2105.45	2067.17	38.28	1708.25	2.28	0.18	0.31	0.49	0.02	2.52
AF20C450	3000	28	277.75	6.61E-06	0.82	0.32	16.85	1843.30	1810.13	33.18	1753.24	1.96	0.14	0.31	0.45	0.01	2.09
560C3250	3250	28	302.49	7.26E-06	0.88	0.35	17.97	1979.07	1942.71	36.36	1827.09	2.16	0.15	0.31	0.46	0.01	2.31
F25EX2A	3250	28	297.14	6.96E-06	0.87	0.33	18.11	1946.35	1911.75	34.60	1659.64	2.05	0.15	0.31	0.46	0.01	2.26
A545CWP4	3500	28	295.16	7.06E-06	0.86	0.34	17.64	1937.31	1901.97	35.34	1810.66	2.10	0.15	0.31	0.46	0.01	2.24
CT590CF4	3600	28	245.30	5.83E-06	0.74	0.28	15.19	1656.77	1627.38	29.38	1732.70	1.74	0.14	0.31	0.45	0.01	1.82
CT658EFWP2	3600	28	270.39	6.32E-06	0.80	0.30	16.69	1792.03	1760.54	31.49	1645.48	1.87	0.16	0.31	0.47	0.01	2.03
A40C4	4000	28	418.07	1.00E-05	1.18	0.48	24.01	2652.80	2603.09	49.71	1885.28	2.96	0.15	0.31	0.45	0.02	3.27
A592CWP4	4000	28	318.40	7.62E-06	0.92	0.36	18.85	2071.75	2033.71	38.03	1820.75	2.26	0.15	0.31	0.46	0.02	2.44
A714EWP4	4000	28	378.04	8.96E-06	1.07	0.43	22.07	2408.08	2363.70	44.39	1770.02	2.64	0.17	0.31	0.48	0.02	2.94
AR375W44G	4000	28	374.68	8.96E-06	1.07	0.43	21.81	2401.76	2357.20	44.56	1868.05	2.65	0.15	0.31	0.45	0.02	2.90
CT675CF4	4000	28	277.09	6.59E-06	0.82	0.31	16.83	1836.63	1803.58	33.05	1718.28	1.96	0.15	0.31	0.46	0.01	2.09
A45C4	4500	28	374.57	8.97E-06	1.07	0.43	21.75	2400.80	2356.13	44.67	1867.10	2.65	0.15	0.31	0.45	0.02	2.90
A45CF4	4500	28	308.97	7.37E-06	0.90	0.35	18.45	2025.45	1988.59	36.85	1772.31	2.18	0.14	0.31	0.45	0.02	2.35
A45EF6Z	4500	28	341.63	8.05E-06	0.98	0.38	20.32	2207.18	2167.26	39.93	1694.37	2.37	0.16	0.31	0.47	0.02	2.63
A640CWP4	4500	28	342.24	8.18E-06	0.98	0.39	20.09	2211.24	2170.44	40.79	1834.34	2.42	0.15	0.31	0.46	0.02	2.64
750CSE50P	5000	28	323.73	7.70E-06	0.94	0.37	19.31	2113.59	2075.18	38.41	1779.26	2.28	0.14	0.31	0.45	0.02	2.47
A45E4	5000	28	431.55	1.02E-05	1.21	0.49	24.85	2719.62	2669.02	50.61	1797.40	3.02	0.17	0.31	0.48	0.02	3.39
A50E4	5000	28	442.60	1.05E-05	1.24	0.50	25.35	2776.19	2724.28	51.91	1753.93	3.09	0.19	0.31	0.50	0.02	3.48
A705CWP4	5000	28	374.35	8.96E-06	1.07	0.43	21.74	2397.01	2352.42	44.58	1853.76	2.65	0.15	0.31	0.46	0.02	2.90
A799CWP4	5000	28	420.93	1.01E-05	1.19	0.48	24.16	2668.29	2618.28	50.01	1877.75	2.98	0.15	0.31	0.46	0.02	3.29
A827EWP2	5000	28	433.71	1.03E-05	1.21	0.49	24.96	2728.58	2677.79	50.79	1778.73	3.03	0.18	0.31	0.49	0.02	3.41
CT505CF4	2500	56	214.25	5.10E-06	0.65	0.24	13.54	1472.89	1447.06	25.83	1722.38	1.52	0.14	0.31	0.45	0.01	1.57

Table 12: Assessment results for ready mix concrete produced at Calportland's Lompoc Ready Mix Plant
Calculated Results A1-A3 per yd3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
611G03010	2000	28	337.98	7.85E-06	1.01	0.38	21.33	2237.62	2194.27	43.35	1699.70	2.32	0.19	0.12	0.30	0.02	2.52
470GN1010	2500	28	210.55	4.90E-06	0.70	0.24	15.01	1545.50	1516.32	29.18	1738.19	1.47	0.13	0.12	0.24	0.01	1.45
470GN1030	2500	28	226.06	5.29E-06	0.74	0.26	15.77	1633.19	1602.13	31.06	1764.72	1.58	0.13	0.12	0.24	0.01	1.59
470GN2030	2500	28	225.95	5.28E-06	0.74	0.26	15.77	1631.31	1600.30	31.01	1755.19	1.58	0.13	0.12	0.25	0.01	1.59
505GN1010	2500	28	222.97	5.19E-06	0.74	0.26	15.67	1618.02	1587.41	30.62	1729.20	1.55	0.13	0.12	0.25	0.01	1.56
520G02114	2500	28	228.21	5.31E-06	0.75	0.26	15.92	1640.86	1609.71	31.15	1688.88	1.59	0.13	0.12	0.24	0.01	1.61
520GN1020	2500	28	241.75	5.65E-06	0.79	0.28	16.63	1727.00	1694.16	32.84	1762.02	1.69	0.13	0.12	0.24	0.01	1.71
520GN1040	2500	28	254.21	5.96E-06	0.82	0.29	17.22	1796.08	1761.73	34.35	1773.69	1.78	0.13	0.12	0.25	0.01	1.82
550GN1010	2500	28	240.20	5.60E-06	0.78	0.28	16.60	1721.35	1688.75	32.60	1741.79	1.67	0.13	0.12	0.24	0.01	1.70
564GN2030	2500	28	264.53	6.19E-06	0.84	0.30	17.82	1859.03	1823.57	35.45	1765.74	1.85	0.13	0.12	0.25	0.01	1.90
470GN2100	3000	28	267.34	6.33E-06	0.85	0.31	17.75	1867.96	1831.75	36.21	1847.19	1.89	0.12	0.12	0.24	0.01	1.94
470GN2120	3000	28	221.75	5.20E-06	0.73	0.26	15.50	1610.36	1579.63	30.73	1769.83	1.56	0.12	0.12	0.24	0.01	1.55
470GN2130	3000	28	226.11	5.31E-06	0.74	0.26	15.72	1634.99	1603.74	31.25	1777.12	1.59	0.12	0.12	0.24	0.01	1.59
470GN2140	3000	28	233.30	5.49E-06	0.76	0.27	16.06	1674.80	1642.69	32.12	1783.54	1.64	0.12	0.12	0.24	0.01	1.65
494GN1010	3000	28	219.28	5.11E-06	0.73	0.25	15.50	1598.88	1568.69	30.18	1750.20	1.53	0.12	0.12	0.24	0.01	1.52
494GN1030	3000	28	236.08	5.52E-06	0.77	0.27	16.31	1692.28	1660.06	32.22	1767.73	1.65	0.13	0.12	0.24	0.01	1.67
494GN2030	3000	28	235.96	5.51E-06	0.77	0.27	16.30	1690.40	1658.23	32.16	1758.20	1.65	0.13	0.12	0.25	0.01	1.67
517G02084	3000	28	244.54	5.71E-06	0.79	0.28	16.72	1731.55	1698.47	33.08	1708.14	1.70	0.13	0.12	0.25	0.01	1.75
560GN1020	3250	28	257.79	6.03E-06	0.83	0.30	17.48	1821.75	1787.06	34.69	1765.69	1.80	0.13	0.12	0.24	0.01	1.85
560GN1040	3250	28	271.25	6.36E-06	0.86	0.31	18.13	1896.77	1860.46	36.32	1781.04	1.90	0.13	0.12	0.25	0.01	1.96
517GN1030	3500	28	245.59	5.75E-06	0.79	0.28	16.81	1748.35	1715.04	33.31	1770.08	1.72	0.13	0.12	0.24	0.01	1.75
517GN2030	3500	28	245.48	5.74E-06	0.79	0.28	16.81	1746.57	1713.31	33.26	1761.03	1.71	0.13	0.12	0.25	0.01	1.75
564GN1010	3500	28	245.73	5.73E-06	0.80	0.28	16.90	1754.04	1720.81	33.23	1743.23	1.71	0.13	0.12	0.24	0.01	1.74
564GM1030	4000	28	266.63	6.22E-06	0.85	0.31	17.88	1879.32	1843.81	35.51	1775.27	1.85	0.13	0.12	0.24	0.01	1.90
564GN1030	4000	28	264.64	6.20E-06	0.84	0.30	17.83	1860.91	1825.40	35.51	1775.27	1.85	0.13	0.12	0.24	0.01	1.90
590GN1010	4000	28	255.36	5.95E-06	0.82	0.29	17.42	1812.08	1777.75	34.33	1744.15	1.78	0.13	0.12	0.24	0.01	1.82
630GM1030	4000	28	291.99	6.83E-06	0.92	0.33	19.29	2026.57	1987.96	38.62	1772.76	2.03	0.13	0.12	0.25	0.01	2.13
675GN1010	4500	28	287.52	6.71E-06	0.91	0.33	19.14	2002.66	1964.64	38.02	1749.10	2.00	0.13	0.12	0.24	0.01	2.08
675G02020	5000	28	289.34	6.70E-06	0.93	0.33	19.45	2041.45	2003.59	37.86	1770.54	1.99	0.12	0.12	0.24	0.01	2.08
675RN1010	5000	28	287.39	6.70E-06	0.91	0.33	19.14	2000.67	1962.71	37.97	1739.09	2.00	0.13	0.12	0.25	0.01	2.08

Table 13: Impact Assessment results for ready mix concrete produced at Calportland's Paso Robles Ready Mix Plant Calculated Results A1-A3 per yd3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
611RM1090	5000	28	305.93	6.85E-06	0.97	0.34	20.92	2153.98	2117.33	36.65	1795.19	2.03	0.13	0.13	0.25	0.01	2.14
611R03010	2000	28	338.65	7.80E-06	1.04	0.38	22.09	2281.13	2239.90	41.22	1690.16	2.31	0.18	0.13	0.31	0.02	2.52
470CN2030	2500	28	234.60	5.23E-06	0.80	0.26	17.41	1744.70	1715.79	28.91	1767.57	1.56	0.13	0.13	0.25	0.01	1.59
470RN1030	2500	28	234.40	5.23E-06	0.79	0.26	17.38	1741.83	1712.94	28.89	1754.71	1.56	0.13	0.13	0.25	0.01	1.59
470RN2030	2500	28	234.22	5.23E-06	0.79	0.26	17.35	1739.28	1710.40	28.89	1743.28	1.56	0.13	0.13	0.26	0.01	1.59
470RN4010	2500	28	218.75	4.85E-06	0.75	0.24	16.59	1652.37	1625.34	27.03	1728.18	1.45	0.13	0.13	0.25	0.01	1.45
505RN1010	2500	28	231.04	5.14E-06	0.79	0.26	17.22	1723.00	1694.55	28.45	1729.19	1.54	0.13	0.13	0.25	0.01	1.56
520RN1010	2500	28	237.30	5.29E-06	0.80	0.26	17.57	1762.11	1732.92	29.19	1730.81	1.58	0.13	0.13	0.25	0.01	1.61
550RN1010	2500	28	248.09	5.54E-06	0.83	0.27	18.13	1823.86	1793.43	30.43	1731.78	1.65	0.13	0.13	0.25	0.01	1.70
470RN2013	3000	28	230.42	5.13E-06	0.79	0.26	17.19	1723.05	1694.59	28.47	1726.47	1.54	0.13	0.13	0.25	0.01	1.55
494RN1010	3000	28	227.21	5.05E-06	0.78	0.25	17.03	1701.88	1673.87	28.01	1728.75	1.51	0.13	0.13	0.25	0.01	1.52
494RN1030	3000	28	244.32	5.47E-06	0.82	0.27	17.89	1799.62	1769.57	30.05	1757.24	1.63	0.13	0.13	0.25	0.01	1.67
494RN2030	3000	28	244.32	5.47E-06	0.82	0.27	17.89	1799.62	1769.57	30.05	1757.24	1.63	0.13	0.13	0.25	0.01	1.67
517CN1030	3000	28	253.96	5.70E-06	0.85	0.28	18.42	1857.50	1826.34	31.16	1772.93	1.70	0.13	0.13	0.25	0.01	1.75
517CN2030	3000	28	253.96	5.70E-06	0.85	0.28	18.42	1857.50	1826.34	31.16	1772.93	1.70	0.13	0.13	0.25	0.01	1.75
517RN2030	3000	28	253.76	5.69E-06	0.84	0.28	18.38	1854.64	1823.49	31.15	1760.07	1.70	0.13	0.13	0.25	0.01	1.75
520RN2080	3000	28	253.68	5.70E-06	0.84	0.28	18.30	1844.91	1813.80	31.12	1748.03	1.70	0.13	0.13	0.26	0.01	1.75
517RM2190	3500	28	263.18	5.90E-06	0.87	0.29	18.88	1919.53	1887.40	32.14	1773.17	1.76	0.13	0.13	0.25	0.01	1.81
520CH2000	3500	28	301.54	6.85E-06	0.97	0.34	20.87	2139.78	2103.02	36.76	1860.16	2.04	0.13	0.13	0.25	0.01	2.14
530CH1040	3500	28	268.00	6.02E-06	0.89	0.30	19.20	1951.21	1918.47	32.73	1797.65	1.79	0.13	0.13	0.25	0.01	1.86
590RN1010	3600	28	263.08	5.90E-06	0.87	0.29	18.91	1912.23	1880.07	32.16	1734.14	1.76	0.13	0.13	0.25	0.01	1.82
564RN1010	4000	28	253.56	5.67E-06	0.85	0.28	18.41	1855.82	1824.75	31.07	1733.21	1.69	0.13	0.13	0.25	0.01	1.74
564RN1030	4000	28	272.63	6.14E-06	0.89	0.30	19.37	1964.79	1931.45	33.34	1765.26	1.83	0.13	0.13	0.25	0.01	1.90
564RN1040	4000	28	280.94	6.35E-06	0.91	0.31	19.79	2012.28	1977.95	34.33	1779.17	1.89	0.13	0.13	0.25	0.01	1.97
564RN2030	4000	28	272.63	6.14E-06	0.89	0.30	19.37	1964.79	1931.45	33.34	1765.26	1.83	0.13	0.13	0.25	0.01	1.90
630RN1030	4000	28	299.51	6.78E-06	0.96	0.33	20.77	2122.35	2085.89	36.46	1772.27	2.02	0.13	0.13	0.25	0.01	2.13
658RN1040	5000	28	320.71	7.29E-06	1.02	0.36	21.86	2244.93	2205.98	38.95	1792.15	2.17	0.13	0.13	0.25	0.01	2.30
675RN1010	5000	28	294.91	6.66E-06	0.95	0.33	20.58	2098.30	2062.45	35.85	1739.09	1.98	0.13	0.13	0.25	0.01	2.08
665ZN2210	5000	28	291.54	6.57E-06	0.95	0.32	20.45	2083.99	2048.51	35.48	1739.60	1.96	0.13	0.13	0.25	0.01	2.05
675RS1110	5000	28	301.45	7.24E-06	0.98	0.34	20.96	2284.87	2247.86	37.01	1739.44	2.19	0.13	0.13	0.25	0.01	2.08

Table 14: Impact Assessment results for concrete produced at Calportland's San Luis Obispo Ready Mix Plant
Calculated Results A1-A3 per yd3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
611G03010	2000	28	337.90	7.75E-06	1.02	0.37	21.72	2225.38	2186.42	38.96	1699.69	2.29	0.19	0.13	0.31	0.02	2.52
470GN1010	2500	28	212.25	4.80E-06	0.72	0.24	15.71	1557.77	1532.97	24.80	1738.17	1.44	0.13	0.13	0.25	0.01	1.45
470GN1030	2500	28	227.88	5.19E-06	0.76	0.25	16.49	1647.01	1620.33	26.67	1764.71	1.55	0.13	0.13	0.25	0.01	1.59
470GN2030	2500	28	227.62	5.18E-06	0.76	0.25	16.46	1643.19	1616.57	26.62	1755.18	1.55	0.13	0.13	0.25	0.01	1.59
505GN1010	2500	28	224.64	5.09E-06	0.75	0.25	16.36	1629.85	1603.61	26.23	1729.19	1.52	0.13	0.13	0.25	0.01	1.56
470GN2100	3000	28	269.95	6.23E-06	0.87	0.30	18.60	1892.59	1860.76	31.82	1847.17	1.86	0.12	0.13	0.25	0.01	1.94
470GN2120	3000	28	224.11	5.10E-06	0.75	0.25	16.32	1631.58	1605.24	26.34	1769.82	1.53	0.12	0.13	0.25	0.01	1.55
470GN2130	3000	28	228.49	5.21E-06	0.76	0.26	16.54	1656.55	1629.68	26.87	1777.10	1.56	0.12	0.13	0.25	0.01	1.59
470GN2140	3000	28	235.71	5.39E-06	0.78	0.26	16.89	1696.71	1668.97	27.73	1783.53	1.61	0.12	0.13	0.25	0.01	1.65
494GN1010	3000	28	220.99	5.01E-06	0.74	0.25	16.20	1611.22	1585.42	25.80	1750.19	1.50	0.12	0.13	0.25	0.01	1.52
494GN1030	3000	28	237.88	5.42E-06	0.78	0.27	17.02	1705.89	1678.06	27.83	1767.72	1.62	0.13	0.13	0.25	0.01	1.67
494GN2030	3000	28	237.63	5.42E-06	0.78	0.26	16.99	1702.07	1674.30	27.78	1758.18	1.61	0.13	0.13	0.25	0.01	1.67
517G02084	3000	28	245.78	5.61E-06	0.80	0.27	17.33	1737.44	1708.75	28.69	1708.12	1.67	0.13	0.13	0.25	0.01	1.75
520G02114	3000	28	229.49	5.21E-06	0.76	0.26	16.54	1647.32	1620.56	26.76	1688.87	1.55	0.13	0.13	0.25	0.01	1.61
517GN1030	3500	28	247.38	5.65E-06	0.81	0.28	17.53	1761.76	1732.83	28.93	1770.07	1.68	0.13	0.13	0.25	0.01	1.75
517GN2030	3500	28	247.13	5.64E-06	0.81	0.28	17.50	1758.05	1729.18	28.87	1761.02	1.68	0.13	0.13	0.25	0.01	1.75
550GN1010	3500	28	241.86	5.50E-06	0.80	0.27	17.30	1733.05	1704.84	28.21	1741.78	1.64	0.13	0.13	0.25	0.01	1.70
564GN1010	3500	28	247.38	5.63E-06	0.81	0.28	17.59	1765.61	1736.76	28.85	1743.21	1.68	0.13	0.13	0.25	0.01	1.74
564CN1040	4000	28	274.61	6.30E-06	0.88	0.31	18.95	1919.80	1887.73	32.07	1791.08	1.87	0.13	0.13	0.25	0.01	1.97
564GM1030	4000	28	268.41	6.12E-06	0.86	0.30	18.59	1892.74	1861.62	31.12	1775.26	1.82	0.13	0.13	0.25	0.01	1.90
564GN1030	4000	28	266.40	6.10E-06	0.86	0.30	18.54	1873.88	1842.76	31.12	1775.26	1.82	0.13	0.13	0.25	0.01	1.90
564GN2030	4000	28	266.14	6.09E-06	0.86	0.30	18.51	1870.07	1839.00	31.07	1765.72	1.81	0.13	0.13	0.25	0.01	1.90
590GN1010	4000	28	256.98	5.86E-06	0.84	0.29	18.10	1823.27	1793.33	29.94	1744.14	1.74	0.13	0.13	0.25	0.01	1.82
600ZN2120	4000	28	275.18	6.31E-06	0.88	0.31	18.96	1923.86	1891.69	32.17	1739.80	1.88	0.14	0.13	0.26	0.01	1.98
630GM1030	4000	28	296.14	6.77E-06	0.93	0.33	20.03	2058.45	2024.22	34.23	1772.74	2.00	0.13	0.13	0.25	0.01	2.13
675GN1010	4500	28	289.07	6.61E-06	0.92	0.32	19.82	2012.88	1979.25	33.63	1749.09	1.97	0.13	0.13	0.25	0.01	2.08
675RN1010	5000	28	288.81	6.60E-06	0.92	0.32	19.79	2008.96	1975.38	33.58	1739.08	1.96	0.13	0.13	0.25	0.01	2.08
730ZM2490	6000	28	348.74	8.03E-06	1.07	0.39	22.79	2368.50	2328.14	40.36	1813.42	2.37	0.13	0.13	0.25	0.02	2.56
611RM1090	5000	28	297.06	6.80E-06	0.94	0.33	20.07	2060.50	2026.12	34.38	1795.18	2.01	0.13	0.13	0.25	0.01	2.14
650RM4070	6000	28	298.33	6.81E-06	0.94	0.33	20.18	2071.96	2037.59	34.37	1774.39	2.01	0.13	0.13	0.25	0.01	2.14

Table 15: Impact Assessment results for ready mix concrete produced at Calportland's Santa Maria Ready Mix Plant
Calculated Results A1-A3 per yd3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
611G03010	2000	28	333.75	7.80E-06	0.99	0.38	20.83	2174.01	2132.89	41.12	1699.69	2.31	0.19	0.13	0.31	0.02	2.52
470GN1010	2500	28	206.55	4.85E-06	0.68	0.24	14.56	1485.25	1458.29	26.96	1738.18	1.45	0.13	0.13	0.25	0.01	1.45
470GN1030	2500	28	222.08	5.24E-06	0.72	0.26	15.32	1573.15	1544.31	28.83	1764.72	1.56	0.13	0.13	0.25	0.01	1.59
470GN2030	2500	28	221.99	5.23E-06	0.72	0.26	15.32	1571.50	1542.72	28.78	1755.19	1.56	0.13	0.13	0.25	0.01	1.59
505GN1010	2500	28	218.83	5.14E-06	0.71	0.25	15.18	1555.71	1527.31	28.39	1729.19	1.54	0.13	0.13	0.25	0.01	1.56
520G02114	2500	28	224.06	5.26E-06	0.72	0.26	15.43	1578.44	1549.52	28.92	1688.87	1.57	0.13	0.13	0.25	0.01	1.61
520GN1020	2500	28	237.55	5.60E-06	0.76	0.27	16.13	1663.97	1633.35	30.62	1762.01	1.67	0.13	0.13	0.25	0.01	1.71
520GN1040	2500	28	250.03	5.91E-06	0.79	0.29	16.73	1733.26	1701.14	32.13	1773.69	1.76	0.13	0.13	0.25	0.01	1.82
550GN1010	2500	28	235.86	5.55E-06	0.76	0.27	16.08	1656.35	1625.98	30.37	1741.78	1.66	0.13	0.13	0.25	0.01	1.70
564GN2030	2500	28	260.17	6.14E-06	0.82	0.30	17.30	1793.76	1760.54	33.23	1765.73	1.83	0.13	0.13	0.25	0.01	1.90
470GN2100	3000	28	263.34	6.28E-06	0.82	0.30	17.29	1807.63	1773.64	33.98	1847.18	1.87	0.12	0.13	0.25	0.01	1.94
470GN2120	3000	28	217.70	5.15E-06	0.71	0.25	15.04	1549.27	1520.77	28.50	1769.83	1.54	0.12	0.13	0.25	0.01	1.55
470GN2130	3000	28	222.06	5.26E-06	0.72	0.26	15.25	1573.98	1544.95	29.03	1777.11	1.57	0.12	0.13	0.25	0.01	1.59
470GN2140	3000	28	229.26	5.44E-06	0.74	0.27	15.60	1613.94	1584.04	29.89	1783.53	1.63	0.12	0.13	0.25	0.01	1.65
494GN1010	3000	28	215.18	5.05E-06	0.71	0.25	15.02	1537.16	1509.20	27.96	1750.19	1.51	0.12	0.13	0.25	0.01	1.52
494GN1030	3000	28	232.00	5.47E-06	0.75	0.27	15.83	1630.84	1600.85	29.99	1767.72	1.63	0.13	0.13	0.25	0.01	1.67
494GN2030	3000	28	231.90	5.46E-06	0.75	0.27	15.83	1629.20	1599.26	29.94	1758.19	1.63	0.13	0.13	0.25	0.01	1.67
517G02084	3000	28	240.44	5.66E-06	0.76	0.28	16.24	1669.85	1639.00	30.85	1708.13	1.69	0.13	0.13	0.25	0.01	1.75
560GN1020	3250	28	253.43	5.98E-06	0.80	0.29	16.96	1756.40	1723.93	32.47	1765.68	1.78	0.13	0.13	0.25	0.01	1.85
560GN1040	3250	28	266.90	6.31E-06	0.84	0.31	17.61	1831.64	1797.55	34.09	1781.04	1.88	0.13	0.13	0.25	0.01	1.96
517GN1030	3500	28	241.41	5.70E-06	0.77	0.28	16.32	1685.58	1654.49	31.09	1770.08	1.70	0.13	0.13	0.25	0.01	1.75
517GN2030	3500	28	241.32	5.69E-06	0.77	0.28	16.32	1684.04	1653.01	31.03	1761.02	1.70	0.13	0.13	0.25	0.01	1.75
564GN1010	3500	28	241.33	5.68E-06	0.77	0.28	16.37	1688.22	1657.22	31.01	1743.22	1.69	0.13	0.13	0.25	0.01	1.74
564GM1030	4000	28	262.26	6.17E-06	0.82	0.30	17.35	1813.98	1780.70	33.28	1775.26	1.83	0.13	0.13	0.25	0.01	1.90
564GN1030	4000	28	260.26	6.15E-06	0.82	0.30	17.30	1795.40	1762.12	33.28	1775.26	1.83	0.13	0.13	0.25	0.01	1.90
590GN1010	4000	28	250.84	5.90E-06	0.80	0.29	16.87	1744.70	1712.60	32.10	1744.15	1.76	0.13	0.13	0.25	0.01	1.82
630GM1030	4000	28	287.32	6.78E-06	0.89	0.33	18.71	1957.06	1920.67	36.39	1772.75	2.02	0.13	0.13	0.25	0.01	2.13
675GN1010	4500	28	282.64	6.66E-06	0.88	0.32	18.53	1930.30	1894.51	35.79	1749.09	1.98	0.13	0.13	0.25	0.01	2.08
675G02020	5000	28	284.55	6.65E-06	0.90	0.32	18.86	1970.29	1934.65	35.64	1770.53	1.97	0.12	0.13	0.24	0.01	2.08
675RN1010	5000	28	282.53	6.65E-06	0.88	0.32	18.53	1928.55	1892.81	35.74	1739.09	1.98	0.13	0.13	0.25	0.01	2.08

Table 16: Impact Assessment results for ready mix concrete produced at Calportland's Solvang Ready Mix Plant
Calculated Results A1-A3 per yd3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
611G03010	2000	28	337.00	7.77E-06	1.01	0.38	21.51	2214.97	2175.26	39.71	1699.69	2.30	0.19	0.13	0.32	0.02	2.52
470GN1010	2500	28	211.48	4.82E-06	0.71	0.24	15.52	1549.17	1523.62	25.55	1738.18	1.44	0.13	0.13	0.26	0.01	1.45
470GN1030	2500	28	226.95	5.20E-06	0.75	0.25	16.27	1636.23	1608.81	27.42	1764.71	1.55	0.13	0.13	0.26	0.01	1.59
470GN2030	2500	28	226.74	5.20E-06	0.75	0.25	16.25	1632.95	1605.58	27.37	1755.18	1.55	0.13	0.13	0.26	0.01	1.59
505GN1010	2500	28	223.89	5.11E-06	0.74	0.25	16.17	1621.41	1594.43	26.98	1729.19	1.53	0.13	0.13	0.26	0.01	1.56
520G02114	2500	28	228.83	5.23E-06	0.75	0.26	16.37	1640.17	1612.66	27.51	1688.87	1.56	0.13	0.13	0.26	0.01	1.61
520GN1020	2500	28	242.62	5.57E-06	0.79	0.27	17.13	1729.77	1700.57	29.21	1762.01	1.66	0.13	0.13	0.26	0.01	1.71
520GN1040	2500	28	255.03	5.88E-06	0.82	0.29	17.71	1798.12	1767.41	30.71	1773.68	1.75	0.13	0.13	0.26	0.01	1.82
550GN1010	2500	28	241.11	5.52E-06	0.79	0.27	17.11	1724.60	1695.64	28.96	1741.78	1.65	0.13	0.13	0.26	0.01	1.70
564GN2030	2500	28	265.24	6.11E-06	0.85	0.30	18.29	1859.63	1827.82	31.81	1765.73	1.82	0.13	0.13	0.26	0.01	1.90
470GN2100	3000	28	268.47	6.25E-06	0.86	0.30	18.29	1874.20	1841.63	32.57	1847.17	1.86	0.12	0.13	0.25	0.01	1.94
470GN2120	3000	28	223.07	5.12E-06	0.74	0.25	16.08	1619.25	1592.16	27.09	1769.82	1.53	0.12	0.13	0.25	0.01	1.55
470GN2130	3000	28	227.41	5.23E-06	0.75	0.26	16.29	1643.64	1616.02	27.61	1777.11	1.56	0.12	0.13	0.25	0.01	1.59
470GN2140	3000	28	234.56	5.41E-06	0.77	0.26	16.63	1682.88	1654.40	28.48	1783.53	1.62	0.12	0.13	0.26	0.01	1.65
494GN1010	3000	28	220.22	5.02E-06	0.74	0.25	16.01	1602.63	1576.09	26.54	1750.19	1.50	0.12	0.13	0.25	0.01	1.52
494GN1030	3000	28	236.95	5.44E-06	0.78	0.27	16.80	1695.05	1666.47	28.58	1767.72	1.62	0.13	0.13	0.26	0.01	1.67
494GN2030	3000	28	236.73	5.43E-06	0.78	0.27	16.78	1691.76	1663.24	28.52	1758.19	1.62	0.13	0.13	0.26	0.01	1.67
517G02084	3000	28	244.98	5.63E-06	0.79	0.27	17.14	1728.47	1699.03	29.44	1708.13	1.68	0.13	0.13	0.26	0.01	1.75
560GN1020	3250	28	258.63	5.95E-06	0.84	0.29	17.98	1824.11	1793.06	31.05	1765.67	1.77	0.13	0.13	0.26	0.01	1.85
560GN1040	3250	28	272.03	6.28E-06	0.87	0.31	18.61	1898.34	1865.66	32.68	1781.03	1.87	0.13	0.13	0.26	0.01	1.96
517GN1030	3500	28	246.44	5.67E-06	0.80	0.28	17.30	1750.86	1721.19	29.67	1770.07	1.69	0.13	0.13	0.26	0.01	1.75
517GN2030	3500	28	246.23	5.66E-06	0.80	0.28	17.28	1747.68	1718.06	29.62	1761.02	1.69	0.13	0.13	0.26	0.01	1.75
564GN1010	3500	28	246.62	5.65E-06	0.81	0.28	17.40	1757.15	1727.56	29.59	1743.22	1.68	0.13	0.13	0.26	0.01	1.74
564GM1030	4000	28	267.46	6.14E-06	0.86	0.30	18.37	1881.54	1849.67	31.87	1775.26	1.82	0.13	0.13	0.26	0.01	1.90
564GN1030	4000	28	265.46	6.12E-06	0.85	0.30	18.31	1862.92	1831.05	31.87	1775.26	1.82	0.13	0.13	0.26	0.01	1.90
590GN1010	4000	28	256.23	5.87E-06	0.83	0.29	17.92	1814.97	1784.29	30.69	1744.14	1.75	0.13	0.13	0.26	0.01	1.82
630GM1030	4000	28	292.76	6.75E-06	0.92	0.33	19.76	2027.89	1992.91	34.98	1772.75	2.01	0.13	0.13	0.26	0.01	2.13
675GN1010	4500	28	288.34	6.63E-06	0.92	0.32	19.63	2004.78	1970.40	34.38	1749.09	1.97	0.13	0.13	0.26	0.01	2.08
675G02020	5000	28	289.78	6.62E-06	0.93	0.32	19.88	2038.43	2004.21	34.22	1770.52	1.96	0.12	0.13	0.25	0.01	2.08
675RN1010	5000	28	288.11	6.62E-06	0.91	0.32	19.61	2001.39	1967.06	34.33	1739.08	1.97	0.13	0.13	0.26	0.01	2.08

Table 17: Impact Assessment results for ready mix concrete produced at Calportland's Alameda Ready Mix Plant
Calculated Results A1-A3 per m3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
45CF44	4000	28	391.31	9.44E-06	1.11	0.44	22.31	2500.70	2452.13	48.55	2333.61	2.80	0.18	0.14	0.33	0.01	3.00
50C4	4000	28	418.69	1.02E-05	1.19	0.48	23.86	2678.84	2626.51	52.33	2438.63	3.03	0.18	0.14	0.33	0.03	3.26
50CF4	4000	28	345.68	8.41E-06	1.01	0.41	20.27	2265.64	2222.12	43.53	2329.56	2.50	0.18	0.14	0.33	0.01	2.64
592CWP4	4000	28	410.51	1.00E-05	1.16	0.47	23.48	2632.88	2581.59	51.28	2435.05	2.97	0.18	0.14	0.33	0.03	3.19
714EWP4	4000	28	486.03	1.18E-05	1.35	0.56	27.27	3038.30	2978.76	59.55	2351.25	3.47	0.21	0.14	0.35	0.03	3.85
LX752S4	4000	28	609.66	2.35E-05	2.28	0.77	32.97	4751.59	4685.72	65.87	2073.38	11.95	0.20	0.14	0.34	0.03	3.51
OF25C441A	4000	28	392.21	7.57E-06	2.37	0.44	61.72	2990.61	2931.23	59.38	402.02	2.39	0.16	0.14	0.30	0.01	2.60
45C4	4500	28	471.62	1.15E-05	1.32	0.55	26.43	2974.30	2915.68	58.62	2454.64	3.41	0.18	0.14	0.34	0.03	3.71
45EF6Z	5000	28	424.16	1.02E-05	1.19	0.48	24.21	2707.36	2655.70	51.65	2277.09	3.00	0.20	0.14	0.35	0.03	3.28
696CWP4	5000	28	476.47	1.16E-05	1.33	0.55	26.73	3004.95	2945.83	59.12	2483.03	3.44	0.18	0.14	0.33	0.03	3.75
705CWP4	5000	28	481.72	1.18E-05	1.35	0.56	26.92	3030.98	2971.13	59.85	2459.53	3.48	0.18	0.14	0.34	0.03	3.79
720CFWP4	5000	28	422.73	1.03E-05	1.19	0.48	24.00	2698.20	2645.37	52.83	2368.57	3.06	0.18	0.14	0.34	0.03	3.30
827EWP4	5000	28	556.60	1.35E-05	1.52	0.64	30.63	3426.70	3358.72	67.97	2332.10	3.98	0.24	0.14	0.38	0.03	4.46
O45C4	5000	28	492.31	9.93E-06	2.69	0.56	69.13	3596.65	3524.61	72.04	529.68	3.09	0.17	0.14	0.31	0.03	3.41
O50C4	5000	28	448.30	8.80E-06	2.62	0.51	67.91	3361.80	3294.66	67.15	468.43	2.76	0.17	0.14	0.31	0.01	3.02
O50D4	5000	28	510.81	1.05E-05	2.66	0.58	67.27	3656.09	3581.66	74.42	562.00	3.24	0.20	0.14	0.34	0.03	3.61
OF25C7Z45	6000	56	376.48	7.01E-06	2.43	0.43	64.02	2963.98	2905.99	57.99	368.87	2.22	0.16	0.14	0.30	0.01	2.39
O40C4	6000	28	547.95	1.14E-05	2.80	0.63	70.67	3893.62	3815.29	78.35	607.10	3.49	0.17	0.14	0.31	0.03	3.90
O42C6Z	6000	28	516.29	1.05E-05	2.75	0.59	70.13	3743.48	3669.00	74.49	557.76	3.23	0.17	0.14	0.31	0.03	3.58
O45D4	6000	28	562.16	1.18E-05	2.75	0.64	68.68	3930.05	3849.85	80.20	633.45	3.62	0.20	0.14	0.35	0.03	4.07
O40D4	7000	28	626.47	1.35E-05	2.85	0.72	70.21	4268.94	4181.62	87.32	723.64	4.11	0.21	0.14	0.35	0.03	4.63
40C4	4000	7	534.05	1.31E-05	1.48	0.61	29.46	3323.74	3257.59	66.14	2479.05	3.86	0.18	0.14	0.34	0.03	4.25
8000#1R	8000	56	662.45	1.61E-05	1.80	0.77	35.75	4057.13	3976.04	81.09	2406.86	4.76	0.21	0.14	0.37	0.04	5.34
F25C445	5000	56	353.85	8.61E-06	1.02	0.41	20.67	2311.02	2266.53	44.48	2305.72	2.56	0.18	0.14	0.33	0.01	2.71
F40C4405	5000	56	323.57	7.85E-06	0.94	0.38	19.15	2135.92	2095.13	40.79	2190.95	2.34	0.18	0.14	0.33	0.01	2.46
O30D2S8	10000	90	651.93	1.41E-05	2.86	0.75	69.54	4410.45	4321.38	89.07	760.19	4.29	0.20	0.14	0.34	0.03	4.87
O35D2S8	8000	56	558.70	1.18E-05	2.71	0.64	67.29	3913.77	3834.73	79.03	630.04	3.60	0.20	0.14	0.34	0.03	4.04
OCT770D6Z	7000	56	459.35	9.26E-06	2.47	0.52	63.16	3359.33	3292.19	67.12	491.36	2.86	0.18	0.14	0.34	0.03	3.17
OF25C6Z50	5000	56	349.97	6.34E-06	2.38	0.39	63.36	2822.15	2766.75	55.40	332.30	2.03	0.16	0.14	0.30	0.01	2.16
OF40D836	8000	56	391.56	7.48E-06	2.41	0.44	62.68	3032.67	2972.53	60.14	396.09	2.37	0.17	0.14	0.31	0.01	2.56

Table 18: Impact Assessment results for ready mix concrete produced at Calportland's El Segundo Ready Mix Plant
Calculated Results A1-A3 per m3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
45CF44	4000	28	400.36	9.50E-06	1.16	0.46	23.70	2629.59	2579.13	50.46	2333.61	2.81	0.18	0.33	0.51	0.01	3.00
50C4	4000	28	427.80	1.03E-05	1.24	0.50	25.26	2808.55	2754.32	54.23	2438.63	3.05	0.18	0.33	0.51	0.03	3.26
50CF4	4000	28	354.55	8.46E-06	1.06	0.41	21.62	2392.02	2346.59	45.43	2329.56	2.51	0.18	0.33	0.51	0.01	2.64
592CWP4	4000	28	419.39	1.01E-05	1.22	0.48	24.84	2759.42	2706.24	53.18	2435.05	2.98	0.18	0.33	0.51	0.03	3.19
714EWP4	4000	28	492.78	1.18E-05	1.39	0.56	28.25	3135.57	3074.13	61.45	2351.25	3.48	0.21	0.33	0.54	0.03	3.85
LX752S4	4000	28	612.83	2.37E-05	2.30	0.77	33.34	4799.81	4732.05	67.76	2073.38	11.97	0.20	0.33	0.52	0.03	3.51
OF25C441A	4000	28	392.76	7.61E-06	2.37	0.44	61.62	3002.74	2941.46	61.28	402.02	2.41	0.16	0.33	0.48	0.01	2.60
45C4	4500	28	480.83	1.16E-05	1.37	0.55	27.85	3105.33	3044.82	60.52	2454.64	3.43	0.18	0.33	0.51	0.03	3.71
45EF6Z	5000	28	430.92	1.02E-05	1.23	0.50	25.19	2804.87	2751.33	53.55	2277.10	3.01	0.20	0.33	0.52	0.03	3.28
696CWP4	5000	28	485.58	1.17E-05	1.39	0.56	28.13	3134.38	3073.37	61.03	2483.04	3.45	0.18	0.33	0.51	0.03	3.75
705CWP4	5000	28	491.04	1.18E-05	1.40	0.56	28.36	3163.63	3101.88	61.75	2459.53	3.49	0.18	0.33	0.51	0.03	3.79
720CFWP4	5000	28	432.19	1.04E-05	1.26	0.50	25.45	2832.72	2777.99	54.72	2368.57	3.07	0.18	0.33	0.51	0.03	3.30
827EWP4	5000	28	563.46	1.36E-05	1.56	0.64	31.64	3525.66	3455.80	69.87	2332.11	3.99	0.24	0.33	0.56	0.03	4.46
O45C4	5000	28	492.81	9.97E-06	2.69	0.56	69.01	3608.08	3534.13	73.94	529.68	3.10	0.17	0.33	0.50	0.03	3.41
O50C4	5000	28	448.51	8.85E-06	2.62	0.51	67.75	3369.38	3300.34	69.05	468.43	2.77	0.17	0.33	0.50	0.01	3.02
O50D4	5000	28	511.58	1.06E-05	2.66	0.59	67.20	3671.36	3595.04	76.32	562.00	3.27	0.20	0.33	0.52	0.03	3.61
OF25C7Z45	6000	56	376.68	7.05E-06	2.43	0.43	63.87	2971.49	2911.59	59.89	368.88	2.24	0.16	0.33	0.48	0.01	2.39
O40C4	6000	28	548.80	1.14E-05	2.80	0.63	70.62	3909.91	3829.68	80.24	607.10	3.51	0.17	0.33	0.50	0.03	3.90
O42C6Z	6000	28	516.89	1.05E-05	2.76	0.59	70.03	3756.41	3680.04	76.38	557.76	3.26	0.17	0.33	0.50	0.03	3.58
O45D4	6000	28	563.26	1.19E-05	2.75	0.64	68.67	3949.81	3867.71	82.10	633.47	3.65	0.20	0.33	0.52	0.03	4.07
O40D4	7000	28	628.00	1.35E-05	2.86	0.72	70.28	4294.55	4205.35	89.22	723.64	4.12	0.21	0.33	0.54	0.03	4.63
40C4	4000	7	543.68	1.31E-05	1.53	0.63	30.93	3460.47	3392.43	68.04	2479.06	3.87	0.18	0.33	0.51	0.03	4.25
8000#1R	8000	56	672.10	1.62E-05	1.86	0.77	37.25	4194.31	4111.32	82.99	2406.86	4.77	0.21	0.33	0.54	0.04	5.34
F25C445	5000	56	362.89	8.66E-06	1.07	0.42	22.05	2439.81	2393.43	46.38	2305.73	2.58	0.18	0.33	0.51	0.01	2.71
F40C4405	5000	56	332.66	7.90E-06	1.01	0.38	20.53	2265.23	2222.53	42.69	2190.96	2.35	0.18	0.33	0.51	0.01	2.46
O30D2S8	10000	90	654.09	1.43E-05	2.88	0.75	69.73	4444.68	4353.71	90.97	760.21	4.30	0.20	0.33	0.52	0.03	4.87
O35D2S8	8000	56	560.18	1.18E-05	2.71	0.64	67.35	3938.71	3857.77	80.92	630.05	3.62	0.20	0.33	0.52	0.03	4.04
OCT770D6Z	7000	56	460.41	9.30E-06	2.49	0.52	63.13	3378.51	3309.48	69.02	491.36	2.88	0.18	0.33	0.51	0.03	3.17
OF25C6Z50	5000	56	349.97	6.38E-06	2.38	0.39	63.16	2826.82	2769.52	57.30	332.30	2.04	0.16	0.33	0.48	0.01	2.16
OF40D836	8000	56	392.39	7.52E-06	2.41	0.44	62.62	3048.69	2986.64	62.04	396.10	2.38	0.17	0.33	0.50	0.01	2.56

Table 19: Impact Assessment results for ready mix concrete produced at Calportland's LAX Ready Mix Plant
Calculated Results A1-A3 per m3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
45CF44	4000	28	399.55	9.46E-06	1.16	0.46	23.74	2614.46	2565.62	48.84	2333.61	2.81	0.18	0.18	0.37	0.01	3.00
50C4	4000	28	426.93	1.02E-05	1.24	0.48	25.27	2792.43	2739.83	52.62	2438.63	3.03	0.18	0.18	0.37	0.03	3.26
50CF4	4000	28	353.80	8.42E-06	1.06	0.41	21.67	2377.79	2333.98	43.80	2329.56	2.50	0.18	0.18	0.37	0.01	2.64
592CWP4	4000	28	418.50	1.00E-05	1.22	0.48	24.86	2743.20	2691.63	51.57	2435.05	2.97	0.18	0.18	0.37	0.03	3.19
714EWP4	4000	28	491.49	1.18E-05	1.39	0.56	28.20	3113.92	3054.09	59.84	2351.25	3.48	0.21	0.18	0.39	0.03	3.85
LX752S4	4000	28	611.23	2.35E-05	2.29	0.77	33.22	4773.85	4707.69	66.16	2073.38	11.95	0.20	0.18	0.38	0.03	3.51
OF25C441A	4000	28	392.62	7.59E-06	2.37	0.44	61.76	2996.75	2937.08	59.67	402.02	2.39	0.16	0.18	0.34	0.01	2.60
45C4	4500	28	479.85	1.15E-05	1.37	0.55	27.85	3087.87	3028.96	58.91	2454.64	3.41	0.18	0.18	0.38	0.03	3.71
45EF6Z	5000	28	429.78	1.02E-05	1.23	0.50	25.18	2785.31	2733.37	51.94	2277.09	3.00	0.20	0.18	0.39	0.03	3.28
696CWP4	5000	28	484.57	1.16E-05	1.39	0.55	28.13	3116.62	3057.22	59.41	2483.03	3.44	0.18	0.18	0.37	0.03	3.75
705CWP4	5000	28	490.05	1.18E-05	1.40	0.56	28.36	3146.06	3085.92	60.14	2459.53	3.48	0.18	0.18	0.38	0.03	3.79
720CFWP4	5000	28	431.35	1.03E-05	1.26	0.50	25.48	2817.21	2764.10	53.12	2368.57	3.06	0.18	0.18	0.38	0.03	3.30
827EWP4	5000	28	562.04	1.35E-05	1.56	0.64	31.56	3502.17	3433.92	68.26	2332.10	3.98	0.24	0.18	0.42	0.03	4.46
O45C4	5000	28	492.53	9.94E-06	2.69	0.56	69.14	3600.29	3527.96	72.33	529.68	3.09	0.17	0.18	0.35	0.03	3.41
O50C4	5000	28	448.33	8.82E-06	2.62	0.51	67.90	3362.95	3295.51	67.44	468.43	2.76	0.17	0.18	0.35	0.01	3.02
O50D4	5000	28	511.19	1.05E-05	2.66	0.58	67.31	3661.96	3587.25	74.71	562.00	3.26	0.20	0.18	0.38	0.03	3.61
OF25C7Z45	6000	56	376.65	7.01E-06	2.43	0.43	64.04	2967.20	2908.92	58.28	368.87	2.22	0.16	0.18	0.34	0.01	2.39
O40C4	6000	28	548.40	1.14E-05	2.80	0.63	70.72	3900.41	3821.79	78.62	607.10	3.49	0.17	0.18	0.35	0.03	3.90
O42C6Z	6000	28	516.56	1.05E-05	2.76	0.59	70.16	3748.11	3673.34	74.78	557.76	3.24	0.17	0.18	0.35	0.03	3.58
O45D4	6000	28	562.75	1.18E-05	2.75	0.64	68.76	3938.83	3858.33	80.49	633.47	3.64	0.20	0.18	0.39	0.03	4.07
O40D4	7000	28	627.33	1.35E-05	2.86	0.72	70.34	4281.48	4193.88	87.59	723.64	4.11	0.21	0.18	0.39	0.03	4.63
40C4	4000	7	542.60	1.31E-05	1.53	0.63	30.92	3441.87	3375.44	66.43	2479.05	3.86	0.18	0.18	0.38	0.03	4.25
8000#1R	8000	56	670.78	1.61E-05	1.86	0.77	37.19	4172.27	4090.89	81.38	2406.86	4.76	0.21	0.18	0.41	0.04	5.34
F25C445	5000	56	362.16	8.62E-06	1.07	0.42	22.10	2425.71	2380.95	44.77	2305.73	2.56	0.18	0.18	0.37	0.01	2.71
F40C4405	5000	56	332.01	7.86E-06	0.99	0.38	20.60	2252.28	2211.19	41.08	2190.95	2.34	0.18	0.18	0.37	0.01	2.46
O30D2S8	10000	90	653.37	1.41E-05	2.88	0.75	69.78	4430.96	4341.60	89.36	760.19	4.29	0.20	0.18	0.38	0.03	4.87
O35D2S8	8000	56	559.68	1.18E-05	2.71	0.64	67.44	3927.87	3848.55	79.31	630.04	3.61	0.20	0.18	0.38	0.03	4.04
OCT770D6Z	7000	56	460.12	9.26E-06	2.47	0.52	63.27	3370.53	3303.12	67.41	491.36	2.86	0.18	0.18	0.38	0.03	3.17
OF25C6Z50	5000	56	349.99	6.34E-06	2.38	0.39	63.34	2823.29	2767.61	55.68	332.30	2.04	0.16	0.18	0.34	0.01	2.16
OF40D836	8000	56	392.32	7.48E-06	2.41	0.44	62.78	3043.87	2983.45	60.43	396.09	2.37	0.17	0.18	0.35	0.01	2.56

Table 20: Impact Assessment results for ready mix concrete produced at Calportland's Live Oak Ready Mix Plant
Calculated Results A1-A3 per m3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
HGG20P8	2000	28	351.49	8.29E-06	1.03	0.41	21.12	2370.19	2320.11	50.08	2134.09	2.46	0.26	0.33	0.59	0.01	2.59
H470CWP4	2500	28	350.86	8.34E-06	1.07	0.41	21.92	2462.09	2411.38	50.70	2419.15	2.49	0.18	0.33	0.51	0.01	2.54
H520C2500	2500	28	382.17	9.12E-06	1.15	0.44	23.43	2634.29	2579.80	54.49	2407.47	2.71	0.20	0.33	0.52	0.01	2.80
H564EWP4	2500	28	404.06	9.63E-06	1.19	0.47	24.12	2703.34	2646.73	56.61	2299.05	2.85	0.21	0.33	0.55	0.03	3.03
H498CWP4	3000	28	368.59	8.78E-06	1.12	0.43	22.80	2561.84	2509.04	52.80	2426.76	2.62	0.18	0.33	0.51	0.01	2.68
HR355W4G	3000	28	380.38	9.06E-06	1.15	0.44	23.37	2625.79	2571.64	54.16	2434.20	2.69	0.18	0.33	0.51	0.01	2.79
HR360W4G1	3000	28	409.69	9.77E-06	1.23	0.47	24.80	2786.25	2728.68	57.56	2447.40	2.90	0.18	0.33	0.51	0.03	3.03
H560C3250	3250	28	407.52	9.73E-06	1.22	0.47	24.68	2776.96	2719.48	57.48	2420.94	2.89	0.20	0.33	0.52	0.01	3.02
H660E3250P	3250	28	464.85	1.11E-05	1.33	0.54	27.13	3043.97	2980.12	63.84	2331.50	3.28	0.24	0.33	0.56	0.03	3.56
H545CWP4	3500	28	398.52	9.50E-06	1.20	0.46	24.29	2731.51	2675.16	56.35	2446.81	2.83	0.18	0.33	0.51	0.01	2.93
H658EWP4	3500	28	463.37	1.11E-05	1.33	0.54	27.01	3035.19	2971.53	63.66	2307.35	3.27	0.24	0.33	0.58	0.03	3.54
H50C4	4000	28	436.46	1.04E-05	1.29	0.51	26.15	2944.77	2883.89	60.89	2448.01	3.10	0.18	0.33	0.51	0.03	3.26
H592CWP4	4000	28	427.94	1.02E-05	1.27	0.50	25.71	2893.97	2834.13	59.84	2443.80	3.03	0.18	0.33	0.51	0.03	3.19
H714EWP4	4000	28	500.29	1.20E-05	1.44	0.58	28.94	3256.06	3187.96	68.10	2363.74	3.53	0.21	0.33	0.54	0.03	3.85
HGC40P4	4000	28	371.43	8.84E-06	1.12	0.43	22.89	2575.38	2522.19	53.19	2375.55	2.63	0.18	0.33	0.51	0.01	2.71
HGC45P4	4000	28	407.45	9.72E-06	1.22	0.47	24.65	2777.25	2719.79	57.46	2386.67	2.89	0.18	0.33	0.51	0.01	3.02
H45C4	4500	28	489.49	1.17E-05	1.43	0.56	28.74	3241.51	3174.34	67.16	2462.15	3.48	0.18	0.33	0.52	0.03	3.71
H50E4	4500	28	497.37	1.19E-05	1.43	0.58	28.76	3236.34	3168.56	67.78	2340.39	3.52	0.21	0.33	0.55	0.03	3.82
H752EWP2	4500	28	493.99	1.18E-05	1.41	0.58	28.62	3214.76	3147.50	67.27	2364.80	3.49	0.22	0.33	0.55	0.03	3.79
H752EWP4	4500	28	524.15	1.26E-05	1.49	0.60	30.10	3388.60	3317.67	70.93	2359.93	3.70	0.24	0.33	0.56	0.03	4.05
H45E4	5000	28	575.05	1.39E-05	1.62	0.67	32.57	3671.48	3594.48	77.00	2359.04	4.07	0.22	0.33	0.56	0.03	4.49
H696CWP4	5000	28	494.20	1.18E-05	1.44	0.58	29.02	3270.08	3202.41	67.67	2491.79	3.51	0.18	0.33	0.51	0.03	3.75
H705CWP4	5000	28	499.77	1.20E-05	1.45	0.58	29.26	3300.72	3232.31	68.41	2467.66	3.54	0.18	0.33	0.52	0.03	3.79
H827EWP4	5000	28	570.97	1.37E-05	1.61	0.65	32.33	3646.05	3569.54	76.52	2342.72	4.04	0.24	0.33	0.56	0.03	4.46
H40E4	6000	28	662.20	1.60E-05	1.83	0.76	36.86	4165.62	4078.20	87.42	2380.90	4.70	0.24	0.33	0.56	0.04	5.23
H40C4	5500	56	552.57	1.32E-05	1.58	0.64	31.87	3599.92	3525.23	74.70	2488.43	3.92	0.18	0.33	0.52	0.03	4.25
H6000#2W	6000	56	507.58	1.21E-05	1.46	0.59	29.49	3338.87	3269.80	69.07	2370.74	3.58	0.20	0.33	0.52	0.03	3.88
H8000#1R	8000	90	679.75	1.63E-05	1.91	0.78	37.97	4316.35	4226.76	89.61	2396.30	4.83	0.21	0.33	0.55	0.04	5.34
HF25C445	4000	56	370.25	8.82E-06	1.12	0.43	22.72	2558.19	2505.17	53.04	2313.24	2.63	0.18	0.33	0.51	0.01	2.71
HF389W4U	6000	56	530.75	1.27E-05	1.53	0.61	30.72	3469.39	3397.36	72.03	2436.67	3.77	0.18	0.33	0.52	0.03	4.07

Table 21: Impact Assessment results for ready mix concrete produced at Calportland's Normandie Ready Mix Plant
Calculated Results A1-A3 per m3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
45CF44	4000	28	399.09	9.46E-06	1.15	0.46	23.62	2607.83	2559.04	48.79	2333.61	2.81	0.18	0.17	0.35	0.01	3.00
50C4	4000	28	426.55	1.02E-05	1.23	0.48	25.18	2787.12	2734.57	52.55	2438.63	3.03	0.18	0.17	0.34	0.03	3.26
50CF4	4000	28	353.20	8.42E-06	1.05	0.41	21.53	2369.30	2325.55	43.75	2329.56	2.50	0.18	0.17	0.34	0.01	2.64
592CWP4	4000	28	418.15	1.00E-05	1.22	0.48	24.76	2738.13	2686.61	51.51	2435.05	2.97	0.18	0.17	0.34	0.03	3.19
714EWP4	4000	28	491.93	1.18E-05	1.39	0.56	28.25	3119.71	3059.94	59.77	2351.25	3.47	0.21	0.17	0.38	0.03	3.85
LX752S4	4000	28	612.30	2.35E-05	2.30	0.77	33.38	4788.31	4722.21	66.09	2073.38	11.95	0.20	0.17	0.35	0.03	3.51
OF25C441A	4000	28	388.40	7.59E-06	2.34	0.44	60.99	2938.57	2878.97	59.60	402.02	2.39	0.16	0.17	0.31	0.01	2.60
45C4	4500	28	479.68	1.15E-05	1.37	0.55	27.79	3085.26	3026.41	58.84	2454.64	3.41	0.18	0.17	0.35	0.03	3.71
45EF6Z	5000	28	429.96	1.02E-05	1.23	0.50	25.16	2787.58	2735.71	51.87	2277.09	3.00	0.20	0.17	0.37	0.03	3.28
696CWP4	5000	28	484.44	1.16E-05	1.39	0.55	28.08	3114.62	3055.27	59.35	2483.03	3.44	0.18	0.17	0.34	0.03	3.75
705CWP4	5000	28	489.91	1.18E-05	1.40	0.56	28.29	3143.67	3083.60	60.07	2459.53	3.48	0.18	0.17	0.35	0.03	3.79
720CFWP4	5000	28	430.94	1.03E-05	1.24	0.50	25.37	2811.27	2758.22	53.05	2368.57	3.06	0.18	0.17	0.35	0.03	3.30
827EWP4	5000	28	562.76	1.35E-05	1.56	0.64	31.65	3511.62	3443.43	68.20	2332.10	3.98	0.24	0.17	0.39	0.03	4.46
O45C4	5000	28	488.35	9.94E-06	2.67	0.56	68.37	3542.74	3470.46	72.26	529.68	3.09	0.17	0.17	0.33	0.03	3.41
O50C4	5000	28	443.89	8.82E-06	2.59	0.51	67.07	3301.89	3234.52	67.37	468.43	2.76	0.17	0.17	0.33	0.01	3.02
O50D4	5000	28	507.41	1.05E-05	2.63	0.58	66.61	3609.89	3535.24	74.64	562.00	3.26	0.20	0.17	0.37	0.03	3.61
OF25C7Z45	6000	56	371.98	7.01E-06	2.39	0.42	63.17	2902.84	2844.62	58.22	368.87	2.22	0.16	0.17	0.31	0.01	2.39
O40C4	6000	28	544.55	1.14E-05	2.77	0.63	70.00	3847.28	3768.73	78.57	607.10	3.49	0.17	0.17	0.34	0.03	3.90
O42C6Z	6000	28	512.47	1.05E-05	2.73	0.59	69.40	3691.65	3616.94	74.71	557.76	3.24	0.17	0.17	0.33	0.03	3.58
O45D4	6000	28	559.27	1.18E-05	2.73	0.64	68.12	3890.85	3810.42	80.43	633.47	3.64	0.20	0.17	0.37	0.03	4.07
O40D4	7000	28	624.26	1.35E-05	2.84	0.72	69.77	4239.04	4151.51	87.54	723.64	4.11	0.21	0.17	0.37	0.03	4.63
40C4	4000	7	542.60	1.31E-05	1.53	0.63	30.89	3441.53	3375.16	66.37	2479.05	3.86	0.18	0.17	0.35	0.03	4.25
8000#1R	8000	56	671.32	1.61E-05	1.86	0.77	37.25	4179.33	4098.02	81.32	2406.86	4.76	0.21	0.17	0.38	0.04	5.34
F25C445	5000	56	361.56	8.62E-06	1.07	0.42	21.96	2417.25	2372.54	44.71	2305.73	2.56	0.18	0.17	0.34	0.01	2.71
F40C4405	5000	56	331.30	7.86E-06	0.99	0.38	20.43	2242.26	2201.24	41.02	2190.95	2.34	0.18	0.17	0.34	0.01	2.46
O30D2S8	10000	90	650.57	1.41E-05	2.85	0.75	69.24	4392.33	4303.04	89.29	760.19	4.29	0.20	0.17	0.37	0.03	4.87
O35D2S8	8000	56	556.31	1.18E-05	2.69	0.64	66.81	3881.38	3802.12	79.26	630.04	3.61	0.20	0.17	0.35	0.03	4.04
OCT770D6Z	7000	56	456.30	9.26E-06	2.46	0.52	62.56	3317.86	3250.52	67.35	491.36	2.86	0.18	0.17	0.35	0.03	3.17
OF25C6Z50	5000	56	345.17	6.34E-06	2.35	0.39	62.45	2756.81	2701.18	55.63	332.30	2.04	0.16	0.17	0.31	0.01	2.16
OF40D836	8000	56	387.94	7.48E-06	2.38	0.44	61.98	2983.37	2923.01	60.36	396.09	2.37	0.17	0.17	0.33	0.01	2.56

Table 22: Impact Assessment results for ready mix concrete produced at Calportland's Sun Valley Ready Mix Plant
Calculated Results A1-A3 per m3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
2470CWP4	2500	28	329.54	8.17E-06	0.93	0.39	18.31	2111.23	2067.52	43.72	2428.47	2.43	0.18	0.22	0.41	0.01	2.54
2564EWP4	2500	28	387.73	9.46E-06	1.09	0.44	21.90	2460.95	2411.34	49.61	2300.27	2.80	0.24	0.22	0.46	0.03	3.03
2498CWP4	3000	28	344.33	8.61E-06	0.98	0.41	19.19	2210.80	2164.97	45.82	2437.34	2.56	0.18	0.22	0.41	0.01	2.68
2611EWP4	3000	28	418.03	1.02E-05	1.16	0.48	23.44	2636.46	2583.25	53.22	2361.45	3.01	0.21	0.22	0.44	0.03	3.30
2560C3250	3250	28	382.73	9.56E-06	1.07	0.46	20.98	2418.90	2368.40	50.50	2429.02	2.84	0.20	0.22	0.42	0.01	3.02
250E4	4000	28	517.99	1.27E-05	1.41	0.60	28.13	3188.56	3123.15	65.41	2382.30	3.74	0.24	0.22	0.46	0.03	4.16
245CF4	4000	28	373.28	9.31E-06	1.05	0.44	20.57	2372.40	2323.10	49.30	2392.35	2.77	0.18	0.22	0.41	0.01	2.93
250C4	4000	28	412.66	1.03E-05	1.15	0.48	22.55	2594.72	2540.80	53.93	2471.89	3.05	0.18	0.22	0.41	0.03	3.27
2592CWP4	4000	28	403.79	1.01E-05	1.12	0.47	22.12	2544.72	2491.84	52.88	2466.83	2.98	0.18	0.22	0.41	0.03	3.19
2660C4000P	4000	28	446.83	1.11E-05	1.23	0.52	24.24	2786.74	2728.75	57.98	2489.17	3.30	0.18	0.22	0.41	0.03	3.56
2714EWP4	4000	28	481.87	1.18E-05	1.32	0.56	26.37	2984.96	2923.88	61.08	2352.49	3.48	0.24	0.22	0.46	0.03	3.85
2F25C445	4000	28	347.33	8.65E-06	0.98	0.41	19.33	2225.53	2179.49	46.05	2322.55	2.58	0.18	0.22	0.41	0.01	2.71
2LX752S4	4000	28	609.86	2.37E-05	2.28	0.77	32.83	4758.17	4690.75	67.41	2083.97	11.97	0.20	0.22	0.42	0.03	3.51
245C4	4500	28	455.68	1.13E-05	1.26	0.54	24.67	2836.33	2777.29	59.04	2492.98	3.36	0.18	0.22	0.41	0.03	3.64
245E6Z	4500	28	563.74	1.37E-05	1.52	0.65	30.32	3458.63	3388.18	70.45	2407.53	4.04	0.22	0.22	0.46	0.03	4.51
2R372W4G	4500	28	455.83	1.13E-05	1.26	0.54	24.71	2838.26	2779.26	59.00	2493.61	3.35	0.18	0.22	0.41	0.03	3.64
245E4	5000	28	571.00	1.40E-05	1.54	0.67	30.74	3485.28	3413.58	71.70	2399.55	4.12	0.24	0.22	0.46	0.03	4.60
240CF4	5000	28	416.80	1.04E-05	1.15	0.50	22.72	2615.29	2560.89	54.40	2385.62	3.07	0.18	0.22	0.41	0.03	3.30
242C4	5000	28	486.06	1.21E-05	1.33	0.58	26.16	3007.13	2944.50	62.64	2508.90	3.57	0.18	0.22	0.41	0.03	3.88
2696CWP4	5000	28	469.61	1.17E-05	1.28	0.55	25.35	2914.64	2853.95	60.69	2500.49	3.45	0.18	0.22	0.41	0.03	3.75
2700C5000P	5000	28	472.12	1.17E-05	1.29	0.55	25.47	2928.66	2867.67	60.99	2501.40	3.47	0.18	0.22	0.41	0.03	3.77
2705CWP4	5000	28	475.30	1.18E-05	1.31	0.56	25.62	2946.52	2885.15	61.37	2503.15	3.49	0.18	0.22	0.41	0.03	3.79
2827EWP4	5000	28	553.29	1.36E-05	1.50	0.64	29.86	3385.68	3316.08	69.60	2388.81	3.99	0.24	0.22	0.46	0.03	4.46
2F389W4U	6000	56	506.01	1.25E-05	1.37	0.59	27.10	3116.88	3051.91	64.97	2444.52	3.71	0.18	0.22	0.42	0.03	4.07
2LX781S4	5000	28	679.15	2.56E-05	2.47	0.85	36.14	5176.37	5100.86	75.51	2090.48	12.71	0.20	0.22	0.42	0.03	4.05
240E4	6000	28	642.45	1.58E-05	1.71	0.75	34.05	3876.54	3796.12	80.44	2388.36	4.64	0.24	0.22	0.46	0.04	5.23
26000#2W	6000	28	485.97	1.20E-05	1.33	0.56	26.36	3024.18	2962.09	62.09	2384.42	3.54	0.20	0.22	0.42	0.03	3.88
28000#1R	8000	56	655.90	1.62E-05	1.75	0.77	34.43	3970.95	3888.33	82.62	2406.86	4.77	0.21	0.22	0.44	0.04	5.34
2F25C440	5000	56	384.08	9.56E-06	1.07	0.46	21.14	2432.93	2382.46	50.47	2348.86	2.84	0.18	0.22	0.41	0.01	3.02
2F25C450	3000	56	311.93	7.81E-06	0.89	0.37	17.57	2027.85	1985.89	41.97	2341.60	2.33	0.18	0.22	0.41	0.01	2.41

Table 23: Assessment results for concrete produced at Calportland's Thousand Palms Ready Mix Plant

Calculated Results A1-A3 per m3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
A470CWP4	2500	28	340.41	8.07E-06	0.99	0.38	20.55	2251.75	2211.17	40.59	2341.20	2.41	0.20	0.41	0.60	0.01	2.54
A564EWP4	2500	28	396.81	9.36E-06	1.15	0.44	23.80	2577.34	2530.82	46.52	2218.62	2.76	0.24	0.41	0.64	0.03	3.03
AR355W4G1	2500	28	368.24	8.76E-06	1.09	0.42	22.30	2430.85	2387.09	43.76	2357.50	2.59	0.20	0.41	0.60	0.01	2.79
CT632EFW4	2500	28	339.83	7.95E-06	1.01	0.38	21.02	2256.27	2216.66	39.60	2094.05	2.34	0.22	0.41	0.63	0.01	2.55
A498CWP4	3000	28	356.13	8.53E-06	1.05	0.41	21.56	2364.49	2321.73	42.76	2385.60	2.54	0.18	0.41	0.59	0.01	2.68
A50C4	3000	28	444.61	1.07E-05	1.28	0.51	26.09	2877.36	2824.19	53.17	2420.53	3.15	0.20	0.41	0.59	0.03	3.43
A57C4	3000	28	393.51	9.42E-06	1.15	0.44	23.49	2579.97	2532.88	47.09	2393.81	2.80	0.20	0.41	0.59	0.01	3.00
A611EWP4	3000	28	427.23	1.01E-05	1.23	0.48	25.37	2753.82	2703.76	50.07	2234.31	2.98	0.24	0.41	0.64	0.03	3.30
AF20C450	3000	28	363.28	8.65E-06	1.07	0.42	22.04	2410.94	2367.56	43.40	2293.15	2.56	0.18	0.41	0.59	0.01	2.73
560C3250	3250	28	395.64	9.50E-06	1.15	0.46	23.50	2588.52	2540.97	47.56	2389.74	2.83	0.20	0.41	0.60	0.01	3.02
F25EX2A	3250	28	388.64	9.10E-06	1.14	0.43	23.69	2545.73	2500.47	45.26	2170.73	2.68	0.20	0.41	0.60	0.01	2.96
A545CWP4	3500	28	386.05	9.23E-06	1.12	0.44	23.07	2533.90	2487.68	46.22	2368.25	2.75	0.20	0.41	0.60	0.01	2.93
CT590CF4	3600	28	320.84	7.63E-06	0.97	0.37	19.87	2166.97	2128.53	38.43	2266.28	2.28	0.18	0.41	0.59	0.01	2.38
CT658EFWP2	3600	28	353.66	8.27E-06	1.05	0.39	21.83	2343.89	2302.70	41.19	2152.21	2.45	0.21	0.41	0.61	0.01	2.66
A40C4	4000	28	546.81	1.31E-05	1.54	0.63	31.40	3469.73	3404.71	65.02	2465.85	3.87	0.20	0.41	0.59	0.03	4.28
A592CWP4	4000	28	416.45	9.97E-06	1.20	0.47	24.65	2709.75	2659.99	49.74	2381.45	2.96	0.20	0.41	0.60	0.03	3.19
A714EWP4	4000	28	494.46	1.17E-05	1.40	0.56	28.87	3149.65	3091.60	58.06	2315.10	3.45	0.22	0.41	0.63	0.03	3.85
AR375W44G	4000	28	490.06	1.17E-05	1.40	0.56	28.53	3141.38	3083.10	58.28	2443.32	3.47	0.20	0.41	0.59	0.03	3.79
CT675CF4	4000	28	362.42	8.62E-06	1.07	0.41	22.01	2402.22	2358.99	43.23	2247.42	2.56	0.20	0.41	0.60	0.01	2.73
A45C4	4500	28	489.92	1.17E-05	1.40	0.56	28.45	3140.13	3081.70	58.43	2442.07	3.47	0.20	0.41	0.59	0.03	3.79
A45CF4	4500	28	404.12	9.64E-06	1.18	0.46	24.13	2649.19	2600.98	48.20	2318.09	2.85	0.18	0.41	0.59	0.03	3.07
A45EF6Z	4500	28	446.83	1.05E-05	1.28	0.50	26.58	2886.88	2834.67	52.23	2216.15	3.10	0.21	0.41	0.61	0.03	3.44
A640CWP4	4500	28	447.63	1.07E-05	1.28	0.51	26.28	2892.19	2838.83	53.35	2399.23	3.17	0.20	0.41	0.60	0.03	3.45
750CSE50P	5000	28	423.42	1.01E-05	1.23	0.48	25.26	2764.47	2714.23	50.24	2327.18	2.98	0.18	0.41	0.59	0.03	3.23
A45E4	5000	28	564.45	1.33E-05	1.58	0.64	32.50	3557.13	3490.94	66.20	2350.91	3.95	0.22	0.41	0.63	0.03	4.43
A50E4	5000	28	578.90	1.37E-05	1.62	0.65	33.16	3631.12	3563.22	67.90	2294.05	4.04	0.25	0.41	0.65	0.03	4.55
A705CWP4	5000	28	489.63	1.17E-05	1.40	0.56	28.43	3135.17	3076.85	58.31	2424.63	3.47	0.20	0.41	0.60	0.03	3.79
A799CWP4	5000	28	550.56	1.32E-05	1.56	0.63	31.60	3489.99	3424.58	65.41	2456.00	3.90	0.20	0.41	0.60	0.03	4.30
A827EWP2	5000	28	567.27	1.35E-05	1.58	0.64	32.65	3568.85	3502.42	66.43	2326.49	3.96	0.24	0.41	0.64	0.03	4.46
CT505CF4	2500	56	280.23	6.67E-06	0.85	0.31	17.71	1926.47	1892.68	33.78	2252.79	1.99	0.18	0.41	0.59	0.01	2.05

Table 24: Assessment results for ready mix concrete produced at Calportland's Lompoc Ready Mix Plant
Calculated Results A1-A3 per m3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
611G03010	2000	28	442.06	1.03E-05	1.32	0.50	27.90	2926.70	2870.00	56.70	2223.12	3.03	0.25	0.16	0.39	0.03	3.30
470GN1010	2500	28	275.39	6.41E-06	0.92	0.31	19.63	2021.44	1983.27	38.17	2273.47	1.92	0.17	0.16	0.31	0.01	1.90
470GN1030	2500	28	295.68	6.92E-06	0.97	0.34	20.63	2136.13	2095.51	40.62	2308.17	2.07	0.17	0.16	0.31	0.01	2.08
470GN2030	2500	28	295.53	6.91E-06	0.97	0.34	20.63	2133.67	2093.11	40.56	2295.70	2.07	0.17	0.16	0.33	0.01	2.08
505GN1010	2500	28	291.63	6.79E-06	0.97	0.34	20.50	2116.29	2076.25	40.05	2261.71	2.03	0.17	0.16	0.33	0.01	2.04
520G02114	2500	28	298.49	6.95E-06	0.98	0.34	20.82	2146.16	2105.42	40.74	2208.97	2.08	0.17	0.16	0.31	0.01	2.11
520GN1020	2500	28	316.20	7.39E-06	1.03	0.37	21.75	2258.83	2215.88	42.95	2304.63	2.21	0.17	0.16	0.31	0.01	2.24
520GN1040	2500	28	332.49	7.80E-06	1.07	0.38	22.52	2349.18	2304.25	44.93	2319.90	2.33	0.17	0.16	0.33	0.01	2.38
550GN1010	2500	28	314.17	7.32E-06	1.02	0.37	21.71	2251.44	2208.80	42.64	2278.17	2.18	0.17	0.16	0.31	0.01	2.22
564GN2030	2500	28	345.99	8.10E-06	1.10	0.39	23.31	2431.52	2385.14	46.37	2309.50	2.42	0.17	0.16	0.33	0.01	2.49
470GN2100	3000	28	349.67	8.28E-06	1.11	0.41	23.22	2443.20	2395.84	47.36	2416.03	2.47	0.16	0.16	0.31	0.01	2.54
470GN2120	3000	28	290.04	6.80E-06	0.95	0.34	20.27	2106.27	2066.08	40.19	2314.85	2.04	0.16	0.16	0.31	0.01	2.03
470GN2130	3000	28	295.74	6.95E-06	0.97	0.34	20.56	2138.49	2097.61	40.87	2324.38	2.08	0.16	0.16	0.31	0.01	2.08
470GN2140	3000	28	305.14	7.18E-06	0.99	0.35	21.01	2190.55	2148.56	42.01	2332.78	2.15	0.16	0.16	0.31	0.01	2.16
494GN1010	3000	28	286.81	6.68E-06	0.95	0.33	20.27	2091.26	2051.77	39.47	2289.17	2.00	0.16	0.16	0.31	0.01	1.99
494GN1030	3000	28	308.78	7.22E-06	1.01	0.35	21.33	2213.42	2171.28	42.14	2312.10	2.16	0.17	0.16	0.31	0.01	2.18
494GN2030	3000	28	308.62	7.21E-06	1.01	0.35	21.32	2210.96	2168.88	42.06	2299.64	2.16	0.17	0.16	0.33	0.01	2.18
517G02084	3000	28	319.85	7.47E-06	1.03	0.37	21.87	2264.78	2221.51	43.27	2234.16	2.22	0.17	0.16	0.33	0.01	2.29
560GN1020	3250	28	337.18	7.89E-06	1.09	0.39	22.86	2382.76	2337.39	45.37	2309.43	2.35	0.17	0.16	0.31	0.01	2.42
560GN1040	3250	28	354.78	8.32E-06	1.12	0.41	23.71	2480.88	2433.39	47.50	2329.51	2.49	0.17	0.16	0.33	0.01	2.56
517GN1030	3500	28	321.22	7.52E-06	1.03	0.37	21.99	2286.75	2243.19	43.57	2315.18	2.25	0.17	0.16	0.31	0.01	2.29
517GN2030	3500	28	321.08	7.51E-06	1.03	0.37	21.99	2284.43	2240.92	43.50	2303.34	2.24	0.17	0.16	0.33	0.01	2.29
564GN1010	3500	28	321.40	7.49E-06	1.05	0.37	22.10	2294.20	2250.73	43.46	2280.06	2.24	0.17	0.16	0.31	0.01	2.28
564GM1030	4000	28	348.74	8.14E-06	1.11	0.41	23.39	2458.06	2411.61	46.45	2321.96	2.42	0.17	0.16	0.31	0.01	2.49
564GN1030	4000	28	346.14	8.11E-06	1.10	0.39	23.32	2433.98	2387.53	46.45	2321.96	2.42	0.17	0.16	0.31	0.01	2.49
590GN1010	4000	28	334.00	7.78E-06	1.07	0.38	22.78	2370.11	2325.21	44.90	2281.26	2.33	0.17	0.16	0.31	0.01	2.38
630GM1030	4000	28	381.91	8.93E-06	1.20	0.43	25.23	2650.65	2600.15	50.51	2318.68	2.66	0.17	0.16	0.33	0.01	2.79
675GN1010	4500	28	376.06	8.78E-06	1.19	0.43	25.03	2619.38	2569.65	49.73	2287.74	2.62	0.17	0.16	0.31	0.01	2.72
675G02020	5000	28	378.44	8.76E-06	1.22	0.43	25.44	2670.11	2620.60	49.52	2315.78	2.60	0.16	0.16	0.31	0.01	2.72
675RN1010	5000	28	375.89	8.76E-06	1.19	0.43	25.03	2616.78	2567.13	49.66	2274.64	2.62	0.17	0.16	0.33	0.01	2.72

Table 25: Impact Assessment results for ready mix concrete produced at Calportland's Paso Robles Ready Mix Plant Calculated Results A1-A3 per m3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
611RM1090	5000	28	400.14	8.96E-06	1.27	0.44	27.36	2817.30	2769.36	47.94	2348.02	2.66	0.17	0.17	0.33	0.01	2.80
611R03010	2000	28	442.94	1.02E-05	1.36	0.50	28.89	2983.60	2929.68	53.91	2210.64	3.02	0.24	0.17	0.41	0.03	3.30
470CN2030	2500	28	306.85	6.84E-06	1.05	0.34	22.77	2281.98	2244.17	37.81	2311.89	2.04	0.17	0.17	0.33	0.01	2.08
470RN1030	2500	28	306.58	6.84E-06	1.03	0.34	22.73	2278.23	2240.44	37.79	2295.07	2.04	0.17	0.17	0.33	0.01	2.08
470RN2030	2500	28	306.35	6.84E-06	1.03	0.34	22.69	2274.89	2237.12	37.79	2280.12	2.04	0.17	0.17	0.34	0.01	2.08
470RN4010	2500	28	286.11	6.34E-06	0.98	0.31	21.70	2161.22	2125.86	35.35	2260.37	1.90	0.17	0.17	0.33	0.01	1.90
505RN1010	2500	28	302.19	6.72E-06	1.03	0.34	22.52	2253.60	2216.39	37.21	2261.69	2.01	0.17	0.17	0.33	0.01	2.04
520RN1010	2500	28	310.38	6.92E-06	1.05	0.34	22.98	2304.75	2266.57	38.18	2263.81	2.07	0.17	0.17	0.33	0.01	2.11
550RN1010	2500	28	324.49	7.25E-06	1.09	0.35	23.71	2385.52	2345.72	39.80	2265.08	2.16	0.17	0.17	0.33	0.01	2.22
470RN2013	3000	28	301.38	6.71E-06	1.03	0.34	22.48	2253.66	2216.44	37.24	2258.14	2.01	0.17	0.17	0.33	0.01	2.03
494RN1010	3000	28	297.18	6.61E-06	1.02	0.33	22.27	2225.97	2189.34	36.64	2261.12	1.98	0.17	0.17	0.33	0.01	1.99
494RN1030	3000	28	319.56	7.15E-06	1.07	0.35	23.40	2353.81	2314.51	39.30	2298.38	2.13	0.17	0.17	0.33	0.01	2.18
494RN2030	3000	28	319.56	7.15E-06	1.07	0.35	23.40	2353.81	2314.51	39.30	2298.38	2.13	0.17	0.17	0.33	0.01	2.18
517CN1030	3000	28	332.17	7.46E-06	1.11	0.37	24.09	2429.52	2388.76	40.76	2318.90	2.22	0.17	0.17	0.33	0.01	2.29
517CN2030	3000	28	332.17	7.46E-06	1.11	0.37	24.09	2429.52	2388.76	40.76	2318.90	2.22	0.17	0.17	0.33	0.01	2.29
517RN2030	3000	28	331.91	7.44E-06	1.10	0.37	24.04	2425.78	2385.03	40.74	2302.08	2.22	0.17	0.17	0.33	0.01	2.29
520RN2080	3000	28	331.80	7.46E-06	1.10	0.37	23.94	2413.05	2372.36	40.70	2286.34	2.22	0.17	0.17	0.34	0.01	2.29
517RM2190	3500	28	344.23	7.72E-06	1.14	0.38	24.69	2510.65	2468.62	42.04	2319.22	2.30	0.17	0.17	0.33	0.01	2.37
520CH2000	3500	28	394.40	8.96E-06	1.27	0.44	27.30	2798.73	2750.65	48.08	2433.00	2.67	0.17	0.17	0.33	0.01	2.80
530CH1040	3500	28	350.53	7.87E-06	1.16	0.39	25.11	2552.09	2509.26	42.81	2351.24	2.34	0.17	0.17	0.33	0.01	2.43
590RN1010	3600	28	344.10	7.72E-06	1.14	0.38	24.73	2501.10	2459.04	42.06	2268.17	2.30	0.17	0.17	0.33	0.01	2.38
564RN1010	4000	28	331.64	7.42E-06	1.11	0.37	24.08	2427.32	2386.68	40.64	2266.95	2.21	0.17	0.17	0.33	0.01	2.28
564RN1030	4000	28	356.59	8.03E-06	1.16	0.39	25.33	2569.85	2526.24	43.61	2308.87	2.39	0.17	0.17	0.33	0.01	2.49
564RN1040	4000	28	367.46	8.31E-06	1.19	0.41	25.88	2631.96	2587.06	44.90	2327.07	2.47	0.17	0.17	0.33	0.01	2.58
564RN2030	4000	28	356.59	8.03E-06	1.16	0.39	25.33	2569.85	2526.24	43.61	2308.87	2.39	0.17	0.17	0.33	0.01	2.49
630RN1030	4000	28	391.74	8.87E-06	1.26	0.43	27.17	2775.93	2728.24	47.69	2318.04	2.64	0.17	0.17	0.33	0.01	2.79
658RN1040	5000	28	419.47	9.53E-06	1.33	0.47	28.59	2936.26	2885.31	50.94	2344.04	2.84	0.17	0.17	0.33	0.01	3.01
675RN1010	5000	28	385.73	8.71E-06	1.24	0.43	26.92	2744.47	2697.58	46.89	2274.64	2.59	0.17	0.17	0.33	0.01	2.72
665ZN2210	5000	28	381.32	8.59E-06	1.24	0.42	26.75	2725.75	2679.35	46.41	2275.31	2.56	0.17	0.17	0.33	0.01	2.68
675RS1110	5000	28	394.28	9.47E-06	1.28	0.44	27.41	2988.50	2940.09	48.41	2275.10	2.86	0.17	0.17	0.33	0.01	2.72

Table 26: Impact Assessment results for concrete produced at Calportland's San Luis Obispo Ready Mix Plant
Calculated Results A1-A3 per m3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
611G03010	2000	28	441.96	1.01E-05	1.33	0.48	28.41	2910.69	2859.73	50.96	2223.11	3.00	0.25	0.17	0.41	0.03	3.30
470GN1010	2500	28	277.61	6.28E-06	0.94	0.31	20.55	2037.49	2005.05	32.44	2273.44	1.88	0.17	0.17	0.33	0.01	1.90
470GN1030	2500	28	298.06	6.79E-06	0.99	0.33	21.57	2154.21	2119.31	34.88	2308.15	2.03	0.17	0.17	0.33	0.01	2.08
470GN2030	2500	28	297.72	6.78E-06	0.99	0.33	21.53	2149.21	2114.39	34.82	2295.69	2.03	0.17	0.17	0.33	0.01	2.08
505GN1010	2500	28	293.82	6.66E-06	0.98	0.33	21.40	2131.76	2097.44	34.31	2261.69	1.99	0.17	0.17	0.33	0.01	2.04
470GN2100	3000	28	353.08	8.15E-06	1.14	0.39	24.33	2475.41	2433.78	41.62	2416.01	2.43	0.16	0.17	0.33	0.01	2.54
470GN2120	3000	28	293.12	6.67E-06	0.98	0.33	21.35	2134.03	2099.57	34.45	2314.84	2.00	0.16	0.17	0.33	0.01	2.03
470GN2130	3000	28	298.85	6.81E-06	0.99	0.34	21.63	2166.68	2131.54	35.14	2324.36	2.04	0.16	0.17	0.33	0.01	2.08
470GN2140	3000	28	308.30	7.05E-06	1.02	0.34	22.09	2219.21	2182.93	36.27	2332.77	2.11	0.16	0.17	0.33	0.01	2.16
494GN1010	3000	28	289.04	6.55E-06	0.97	0.33	21.19	2107.40	2073.65	33.75	2289.16	1.96	0.16	0.17	0.33	0.01	1.99
494GN1030	3000	28	311.14	7.09E-06	1.02	0.35	22.26	2231.22	2194.82	36.40	2312.09	2.12	0.17	0.17	0.33	0.01	2.18
494GN2030	3000	28	310.81	7.09E-06	1.02	0.34	22.22	2226.22	2189.90	36.33	2299.61	2.11	0.17	0.17	0.33	0.01	2.18
517G02084	3000	28	321.47	7.34E-06	1.05	0.35	22.67	2272.48	2234.96	37.53	2234.14	2.18	0.17	0.17	0.33	0.01	2.29
520G02114	3000	28	300.16	6.81E-06	0.99	0.34	21.63	2154.61	2119.61	35.00	2208.96	2.03	0.17	0.17	0.33	0.01	2.11
517GN1030	3500	28	323.56	7.39E-06	1.06	0.37	22.93	2304.29	2266.45	37.84	2315.16	2.20	0.17	0.17	0.33	0.01	2.29
517GN2030	3500	28	323.23	7.38E-06	1.06	0.37	22.89	2299.44	2261.68	37.76	2303.33	2.20	0.17	0.17	0.33	0.01	2.29
550GN1010	3500	28	316.34	7.19E-06	1.05	0.35	22.63	2266.74	2229.85	36.90	2278.16	2.15	0.17	0.17	0.33	0.01	2.22
564GN1010	3500	28	323.56	7.36E-06	1.06	0.37	23.01	2309.33	2271.60	37.73	2280.03	2.20	0.17	0.17	0.33	0.01	2.28
564CN1040	4000	28	359.18	8.24E-06	1.15	0.41	24.79	2511.00	2469.06	41.95	2342.64	2.45	0.17	0.17	0.33	0.01	2.58
564GM1030	4000	28	351.07	8.00E-06	1.12	0.39	24.31	2475.61	2434.91	40.70	2321.95	2.38	0.17	0.17	0.33	0.01	2.49
564GN1030	4000	28	348.44	7.98E-06	1.12	0.39	24.25	2450.94	2410.24	40.70	2321.95	2.38	0.17	0.17	0.33	0.01	2.49
564GN2030	4000	28	348.10	7.97E-06	1.12	0.39	24.21	2445.96	2405.32	40.64	2309.47	2.37	0.17	0.17	0.33	0.01	2.49
590GN1010	4000	28	336.12	7.66E-06	1.10	0.38	23.67	2384.75	2345.59	39.16	2281.25	2.28	0.17	0.17	0.33	0.01	2.38
600ZN2120	4000	28	359.92	8.25E-06	1.15	0.41	24.80	2516.31	2474.24	42.08	2275.57	2.46	0.18	0.17	0.34	0.01	2.59
630GM1030	4000	28	387.34	8.85E-06	1.22	0.43	26.20	2692.35	2647.58	44.77	2318.66	2.62	0.17	0.17	0.33	0.01	2.79
675GN1010	4500	28	378.09	8.65E-06	1.20	0.42	25.92	2632.75	2588.76	43.99	2287.72	2.58	0.17	0.17	0.33	0.01	2.72
675RN1010	5000	28	377.75	8.63E-06	1.20	0.42	25.88	2627.62	2583.70	43.92	2274.63	2.56	0.17	0.17	0.33	0.01	2.72
730ZM2490	6000	28	456.13	1.05E-05	1.40	0.51	29.81	3097.88	3045.09	52.79	2371.86	3.10	0.17	0.17	0.33	0.03	3.35
611RM1090	5000	28	388.54	8.89E-06	1.23	0.43	26.25	2695.03	2650.06	44.97	2348.01	2.63	0.17	0.17	0.33	0.01	2.80
650RM4070	6000	28	390.20	8.91E-06	1.23	0.43	26.39	2710.02	2665.07	44.95	2320.81	2.63	0.17	0.17	0.33	0.01	2.80

Table 27: Impact Assessment results for ready mix concrete produced at Calportland's Santa Maria Ready Mix Plant
Calculated Results A1-A3 per m3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
611G03010	2000	28	436.53	1.02E-05	1.29	0.50	27.24	2843.50	2789.71	53.78	2223.11	3.02	0.25	0.17	0.41	0.03	3.30
470GN1010	2500	28	270.16	6.34E-06	0.89	0.31	19.04	1942.63	1907.37	35.26	2273.45	1.90	0.17	0.17	0.33	0.01	1.90
470GN1030	2500	28	290.47	6.85E-06	0.94	0.34	20.04	2057.60	2019.88	37.71	2308.17	2.04	0.17	0.17	0.33	0.01	2.08
470GN2030	2500	28	290.35	6.84E-06	0.94	0.34	20.04	2055.44	2017.80	37.64	2295.70	2.04	0.17	0.17	0.33	0.01	2.08
505GN1010	2500	28	286.22	6.72E-06	0.93	0.33	19.85	2034.79	1997.65	37.13	2261.69	2.01	0.17	0.17	0.33	0.01	2.04
520G02114	2500	28	293.06	6.88E-06	0.94	0.34	20.18	2064.52	2026.69	37.83	2208.96	2.05	0.17	0.17	0.33	0.01	2.11
520GN1020	2500	28	310.70	7.32E-06	0.99	0.35	21.10	2176.39	2136.34	40.05	2304.62	2.18	0.17	0.17	0.33	0.01	2.24
520GN1040	2500	28	327.03	7.73E-06	1.03	0.38	21.88	2267.02	2225.01	42.02	2319.90	2.30	0.17	0.17	0.33	0.01	2.38
550GN1010	2500	28	308.49	7.26E-06	0.99	0.35	21.03	2166.42	2126.70	39.72	2278.16	2.17	0.17	0.17	0.33	0.01	2.22
564GN2030	2500	28	340.29	8.03E-06	1.07	0.39	22.63	2346.15	2302.70	43.46	2309.49	2.39	0.17	0.17	0.33	0.01	2.49
470GN2100	3000	28	344.44	8.21E-06	1.07	0.39	22.61	2364.29	2319.83	44.44	2416.02	2.45	0.16	0.17	0.33	0.01	2.54
470GN2120	3000	28	284.74	6.74E-06	0.93	0.33	19.67	2026.37	1989.09	37.28	2314.85	2.01	0.16	0.17	0.33	0.01	2.03
470GN2130	3000	28	290.44	6.88E-06	0.94	0.34	19.95	2058.69	2020.72	37.97	2324.37	2.05	0.16	0.17	0.33	0.01	2.08
470GN2140	3000	28	299.86	7.12E-06	0.97	0.35	20.40	2110.95	2071.85	39.09	2332.77	2.13	0.16	0.17	0.33	0.01	2.16
494GN1010	3000	28	281.44	6.61E-06	0.93	0.33	19.65	2010.53	1973.96	36.57	2289.16	1.98	0.16	0.17	0.33	0.01	1.99
494GN1030	3000	28	303.44	7.15E-06	0.98	0.35	20.70	2133.06	2093.83	39.23	2312.09	2.13	0.17	0.17	0.33	0.01	2.18
494GN2030	3000	28	303.31	7.14E-06	0.98	0.35	20.70	2130.91	2091.75	39.16	2299.62	2.13	0.17	0.17	0.33	0.01	2.18
517G02084	3000	28	314.48	7.40E-06	0.99	0.37	21.24	2184.08	2143.73	40.35	2234.15	2.21	0.17	0.17	0.33	0.01	2.29
560GN1020	3250	28	331.47	7.82E-06	1.05	0.38	22.18	2297.28	2254.81	42.47	2309.42	2.33	0.17	0.17	0.33	0.01	2.42
560GN1040	3250	28	349.09	8.25E-06	1.10	0.41	23.03	2395.69	2351.11	44.59	2329.51	2.46	0.17	0.17	0.33	0.01	2.56
517GN1030	3500	28	315.75	7.46E-06	1.01	0.37	21.35	2204.65	2163.99	40.66	2315.18	2.22	0.17	0.17	0.33	0.01	2.29
517GN2030	3500	28	315.63	7.44E-06	1.01	0.37	21.35	2202.64	2162.05	40.59	2303.33	2.22	0.17	0.17	0.33	0.01	2.29
564GN1010	3500	28	315.65	7.43E-06	1.01	0.37	21.41	2208.11	2167.56	40.56	2280.04	2.21	0.17	0.17	0.33	0.01	2.28
564GM1030	4000	28	343.02	8.07E-06	1.07	0.39	22.69	2372.60	2329.07	43.53	2321.95	2.39	0.17	0.17	0.33	0.01	2.49
564GN1030	4000	28	340.41	8.04E-06	1.07	0.39	22.63	2348.29	2304.76	43.53	2321.95	2.39	0.17	0.17	0.33	0.01	2.49
590GN1010	4000	28	328.09	7.72E-06	1.05	0.38	22.07	2281.98	2240.00	41.99	2281.26	2.30	0.17	0.17	0.33	0.01	2.38
630GM1030	4000	28	375.80	8.87E-06	1.16	0.43	24.47	2559.74	2512.14	47.60	2318.67	2.64	0.17	0.17	0.33	0.01	2.79
675GN1010	4500	28	369.68	8.71E-06	1.15	0.42	24.24	2524.74	2477.92	46.81	2287.72	2.59	0.17	0.17	0.33	0.01	2.72
675G02020	5000	28	372.18	8.70E-06	1.18	0.42	24.67	2577.04	2530.43	46.62	2315.76	2.58	0.16	0.17	0.31	0.01	2.72
675RN1010	5000	28	369.54	8.70E-06	1.15	0.42	24.24	2522.45	2475.70	46.75	2274.64	2.59	0.17	0.17	0.33	0.01	2.72

Table 28: Impact Assessment results for ready mix concrete produced at Calportland's Solvang Ready Mix Plant
Calculated Results A1-A3 per m3

Indicator/LCI Metric	Stength		GWP	ODP	AP	EP	POCP	PEC	NRE	RE	NRM	RM	CBW	CWW	TW	CHW	CNHW
Mix Name	PSI	# Days	kg CO2	kg CFC-11	kg SO2	kg N	kg O3	MJ	MJ	MJ	kg	kg	m3	m3	m3	kg	kg
611G03010	2000	28	440.78	1.02E-05	1.32	0.50	28.13	2897.07	2845.13	51.94	2223.11	3.01	0.25	0.17	0.42	0.03	3.30
470GN1010	2500	28	276.61	6.30E-06	0.93	0.31	20.30	2026.24	1992.82	33.42	2273.45	1.88	0.17	0.17	0.34	0.01	1.90
470GN1030	2500	28	296.84	6.80E-06	0.98	0.33	21.28	2140.11	2104.24	35.86	2308.15	2.03	0.17	0.17	0.34	0.01	2.08
470GN2030	2500	28	296.56	6.80E-06	0.98	0.33	21.25	2135.82	2100.02	35.80	2295.69	2.03	0.17	0.17	0.34	0.01	2.08
505GN1010	2500	28	292.84	6.68E-06	0.97	0.33	21.15	2120.72	2085.43	35.29	2261.69	2.00	0.17	0.17	0.34	0.01	2.04
520G02114	2500	28	299.30	6.84E-06	0.98	0.34	21.41	2145.26	2109.28	35.98	2208.96	2.04	0.17	0.17	0.34	0.01	2.11
520GN1020	2500	28	317.33	7.29E-06	1.03	0.35	22.41	2262.45	2224.26	38.21	2304.62	2.17	0.17	0.17	0.34	0.01	2.24
520GN1040	2500	28	333.57	7.69E-06	1.07	0.38	23.16	2351.85	2311.68	40.17	2319.88	2.29	0.17	0.17	0.34	0.01	2.38
550GN1010	2500	28	315.36	7.22E-06	1.03	0.35	22.38	2255.69	2217.81	37.88	2278.16	2.16	0.17	0.17	0.34	0.01	2.22
564GN2030	2500	28	346.92	7.99E-06	1.11	0.39	23.92	2432.30	2390.70	41.61	2309.49	2.38	0.17	0.17	0.34	0.01	2.49
470GN2100	3000	28	351.15	8.17E-06	1.12	0.39	23.92	2451.36	2408.76	42.60	2416.01	2.43	0.16	0.17	0.33	0.01	2.54
470GN2120	3000	28	291.76	6.70E-06	0.97	0.33	21.03	2117.90	2082.47	35.43	2314.84	2.00	0.16	0.17	0.33	0.01	2.03
470GN2130	3000	28	297.44	6.84E-06	0.98	0.34	21.31	2149.80	2113.67	36.11	2324.37	2.04	0.16	0.17	0.33	0.01	2.08
470GN2140	3000	28	306.79	7.08E-06	1.01	0.34	21.75	2201.12	2163.87	37.25	2332.77	2.12	0.16	0.17	0.34	0.01	2.16
494GN1010	3000	28	288.04	6.57E-06	0.97	0.33	20.94	2096.16	2061.45	34.71	2289.16	1.96	0.16	0.17	0.33	0.01	1.99
494GN1030	3000	28	309.92	7.12E-06	1.02	0.35	21.97	2217.04	2179.66	37.38	2312.09	2.12	0.17	0.17	0.34	0.01	2.18
494GN2030	3000	28	309.63	7.10E-06	1.02	0.35	21.95	2212.74	2175.43	37.30	2299.62	2.12	0.17	0.17	0.34	0.01	2.18
517G02084	3000	28	320.42	7.36E-06	1.03	0.35	22.42	2260.75	2222.25	38.51	2234.15	2.20	0.17	0.17	0.34	0.01	2.29
560GN1020	3250	28	338.28	7.78E-06	1.10	0.38	23.52	2385.84	2345.23	40.61	2309.41	2.32	0.17	0.17	0.34	0.01	2.42
560GN1040	3250	28	355.80	8.21E-06	1.14	0.41	24.34	2482.93	2440.19	42.74	2329.50	2.45	0.17	0.17	0.34	0.01	2.56
517GN1030	3500	28	322.33	7.42E-06	1.05	0.37	22.63	2290.04	2251.23	38.81	2315.16	2.21	0.17	0.17	0.34	0.01	2.29
517GN2030	3500	28	322.06	7.40E-06	1.05	0.37	22.60	2285.88	2247.14	38.74	2303.33	2.21	0.17	0.17	0.34	0.01	2.29
564GN1010	3500	28	322.57	7.39E-06	1.06	0.37	22.76	2298.26	2259.56	38.70	2280.04	2.20	0.17	0.17	0.34	0.01	2.28
564GM1030	4000	28	349.82	8.03E-06	1.12	0.39	24.03	2460.96	2419.28	41.68	2321.95	2.38	0.17	0.17	0.34	0.01	2.49
564GN1030	4000	28	347.21	8.00E-06	1.11	0.39	23.95	2436.61	2394.92	41.68	2321.95	2.38	0.17	0.17	0.34	0.01	2.49
590GN1010	4000	28	335.14	7.68E-06	1.09	0.38	23.44	2373.89	2333.76	40.14	2281.25	2.29	0.17	0.17	0.34	0.01	2.38
630GM1030	4000	28	382.92	8.83E-06	1.20	0.43	25.85	2652.38	2606.63	45.75	2318.67	2.63	0.17	0.17	0.34	0.01	2.79
675GN1010	4500	28	377.13	8.67E-06	1.20	0.42	25.68	2622.15	2577.18	44.97	2287.72	2.58	0.17	0.17	0.34	0.01	2.72
675G02020	5000	28	379.02	8.66E-06	1.22	0.42	26.00	2666.16	2621.41	44.76	2315.75	2.56	0.16	0.17	0.33	0.01	2.72
675RN1010	5000	28	376.83	8.66E-06	1.19	0.42	25.65	2617.72	2572.82	44.90	2274.63	2.58	0.17	0.17	0.34	0.01	2.72

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