

Appendix F

Energy Consumption Calculations and Conversion Tables

Energy Conversion Sheet

Energy Unit Conversion Sheet

Gasoline

Gallons (gal.)	108,137.00	Barrels (bbl.)	0.00	Btu	0.00
	108137.00 gal. 108.14 Thousand gallons 0.11 Million gallons 2574.69 bbl. 2.57 Thousand bbl. 0.00 Million bbl. 127691.06 U.S. Therms 11871948833.33 British thermal units (Btu) 11871.95 Million Btu (MMBtu)		0.00 gal. 0.00 Thousand gallons 0.00 Million gallons 0.00 bbl. 0.00 Thousand bbl. 0.00 Million bbl. 0.00 U.S. Therms 0.00 British thermal units (Btu) 0.00 Million Btu (MMBtu)		0.00 gal. 0.00 Thousand gallons 0.00 Million gallons 0.00 bbl. 0.00 Thousand bbl. 0.00 Million bbl. 0.00 U.S. Therms 0.00 British thermal units (Btu) 0.00 Million Btu (MMBtu)

Diesel

Gallons (gal.)	19,368.00	Barrels (bbl.)	-	Btu	-
	19,368.00 gal. 19.37 Thousand gallons 0.02 Million gallons 461.14 bbl. 0.46 Thousand bbl. 0.00 Million bbl. 26,552.00 U.S. Therms 2,468,645,280.00 British thermal units (Btu) 2,468.65 Million Btu (MMBtu)		- gal. - Thousand gallons - Million gallons - bbl. - Thousand bbl. - Million bbl. - U.S. Therms - British thermal units (Btu) - Million Btu (MMBtu)		- gal. - Thousand gallons - Million gallons - bbl. - Thousand bbl. - Million bbl. - U.S. Therms - British thermal units (Btu) - Million Btu (MMBtu)

Electricity

Kilowatt-Hours (kWh)	477,585.00	U.S. Therm	-	Btu	-
	477,585.00 Kilowatt-Hours 477.59 Megawatt-Hours 0.48 Gigawatt-Hours 17,526.62 U.S. Therms 1,629,520,020.00 British thermal units (Btu) 1,629.52 Million Btu (MMBtu)		- Kilowatt-Hours - Megawatt-Hours - Gigawatt-Hours - U.S. Therms - British thermal units (Btu) - Million Btu (MMBtu)		- Kilowatt-Hours - Megawatt-Hours - Gigawatt-Hours - U.S. Therms - British thermal units (Btu) - Million Btu (MMBtu)

Natural Gas

Thousand Cubic Feet (Mcf)	-	U.S. Therm	26,880.00	Btu	-
	- Cubic Feet (cf) - Thousand Cubic Feet (Mcf) - Million Cubic Feet (MMcf) - U.S. Therms - British thermal units (Btu) - Million Btu (MMBtu)		2,409,972.15 Cubic Feet (cf) 2,409.97 Thousand Cubic Feet (Mcf) 2.41 Million Cubic Feet (MMcf) 26,880.00 U.S. Therms 2,499,141,120.00 British thermal units (Btu) 2,499.14 Million Btu (MMBtu)		- Cubic Feet (cf) - Thousand Cubic Feet (Mcf) - Million Cubic Feet (MMcf) - U.S. Therms - British thermal units (Btu) - Million Btu (MMBtu)

Sources:

U.S. Energy Information Administration (EIA). May 2017. "Frequently Asked Questions: What are Ccf, Mcf, Btu, and therms? How do I convert natural gas prices in dollars per Ccf or Mcf to dollars per Btu or therm?" <https://www.eia.gov/tools/faqs/faq.php?id=45&t=8>. (accessed February 5, 2018).

Schremp, Gordon. 2017. Senior Fuels Specialist, California Energy Commission. Personal communication via phone and email regarding fuel consumption in California by County and by source with Lance Park, Associate Planner, Rincon Consultants, Inc. August 22, 2017.

Energy Consumption Calculations

1314 Le Borgne Avenue Residential Project

Last Updated: December 10, 2025

Compression-Ignition Engine Brake-Specific Fuel Consumption (BSFC) Factors [1]:

HP: 0 to 100	0.0588	HP: Greater than 100	0.0529
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Values above are expressed in gallons per horsepower-hour/BSFC.

CONSTRUCTION EQUIPMENT						
Construction Equipment	#	Hours per Day	Horsepower	Load Factor	Construction Phase	Fuel Used (gallons)
Tractors/Loaders/Backhoes	1	8	84	0.37	Demolition	161
Rubber Tired Dozers	1	8	367	0.4	Site Preparation	683
Tractors/Loaders/Backhoes	1	8	84	0.37	Site Preparation	161
Skid Steer Loaders	1	8	71	0.37	Site Preparation	136
Graders	1	8	148	0.41	Grading	282
Excavators	1	8	36	0.38	Grading	71
Tractors/Loaders/Backhoes	1	8	84	0.37	Grading	161
Rubber Tired Dozers	1	8	367	0.4	Grading	2,545
Scrapers	1	8	423	0.48	Grading	3,520
Tractors/Loaders/Backhoes	1	8	84	0.37	Building Construction	599
Air Compressors	1	8	37	0.48	Building Construction	342
Excavators	1	8	36	0.38	Building Construction	264
Skid Steer Loaders	1	8	71	0.37	Building Construction	2,729
Pavers	1	8	81	0.42	Paving	3,535
Rollers	1	8	36	0.38	Paving	1,421
Graders	1	8	148	0.41	Paving	5,671
Tractors/Loaders/Backhoes	1	8	84	0.37	Paving	3,229
Pressure Washers	1	8	14	0.3	Paving	436
Skid Steer Loaders	1	8	71	0.37	Paving	1,124
Air Compressors	1	8	37	0.48	Architectural Coating	760
Total Fuel Used						27,829
						(Gallons)

Construction Phase	Days of Operation
Demolition	11
Site Preparation	11
Grading	41
Building Construction	221
Paving	21
Architectural Coating	91
Total Days	396

WORKER TRIPS				
Constuction Phase	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)
Demolition	24.1	5	18.5	42.22
Site Preparation	24.1	10	18.5	84.44
Grading	24.1	15	18.5	472.10
Building Construction	24.1	78	18.5	13147.67
Paving	24.1	20	18.5	322.41
Architectural Coating	24.1	16	18.5	1082.75
Fuel				15,151.58

HAULING AND VENDOR TRIPS				
Trip Class	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)
HAULING TRIPS				
Demolition	7.5	20	20.0	586.67
Site Preparation	7.5	0	20.0	0.00
Grading	7.5	5	20.0	546.67
Building Construction	7.5	0	20.0	0.00
Paving	7.5	0	20.0	0.00
Architectural Coating	7.5	0	20.0	0.00
Fuel				1,133.33
VENDOR TRIPS				
Demolition	7.5	0	10.2	0.00
Site Preparation	7.5	0	10.2	0.00
Grading	7.5	0	10.2	0.00
Building Construction	7.5	12	10.2	3636.78
Paving	7.5	0	10.2	0.00
Architectural Coating	7.5	0	10.2	0.00
Fuel				3,636.78
Total Gasoline Consumption (gallons)				15,152
Total Diesel Consumption (gallons)				32,599

Sources:

[1] United States Environmental Protection Agency. 2021. *Exhaust and Crankcase Emission Factors for Nonroad Compression-Ignition Engines in MOVES3.0.2*. September. Available at: <https://www.epa.gov/system/files/documents/2021-08/420r21021.pdf>.

[2] United States Department of Transportation, Bureau of Transportation Statistics. 2021. *National Transportation Statistics*. Available at: <https://www.bts.gov/topics/national-transportation-statistics>.

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Last Updated: December 10, 2025

Annual VMT: 2,506,181

Fleet Class	Fleet Mix	Fuel Economy (MPG) [1]	
Light Duty Auto (LDA)	0.604810	Passenger Vehicles	24.7
Light Duty Truck 1 (LDT1)	0.038204	Light-Med Duty Trucks	17.9
Light Duty Truck 2 (LDT2)	0.185149	Heavy Trucks/Other	7.5
Medium Duty Vehicle (MDV)	0.108513	Motorcycles	44
Light Heavy Duty 1 (LHD1)	0.015498		
Light Heavy Duty 2 (LHD2)	0.004981		
Medium Heavy Duty (MHD)	0.012268		
Heavy Heavy Duty (HHD)	0.020156		
Other Bus (OBUS)	0.002083		
Urban Bus (UBUS)	0.001571		
Motorcycle (MCY)	0.005363		
School Bus (SBUS)	0.000620		
Motorhome (MH)	0.000785		

Fleet Mix

Vehicle Type	Percent	Fuel Type	Annual VMT	Fuel Consumption (Gallons)
Passenger Vehicles	60.48%	Gasoline	1,515,763	61,367
Light-Medium Duty Trucks	33.19%	Gasoline	831,716	46,465
Heavy Trucks/Other	5.80%	Diesel	145,263	19,368
Motorcycle	0.54%	Gasoline	13,441	305

Total Gasoline Consumption (gallons) 108,137

Total Diesel Consumption (gallons) 19,368

Sources:

[1] United States Department of Transportation, Bureau of Transportation Statistics. 2021. National Transportation Statistics. Available at: <https://www.bts.gov/topics/national-transportation-statistics>.