APPENDIX B

Air Quality, Greenhouse Gas, and Energy

Humboldt Wind Energy Project

Air District: NCUAQMD

Construction Start: Winter 2019
Construction Duraction: Appx 18 months

Balanced site assumed, per project description: "Approximately 3 million cubic feet of earth would be excavated on site to construct the proposed project. All grading will remain balanced within the project site so no export of soil is proposed."

Below tables served as data inputs from the project description to inform the emissions estimates. Blue highlighted cells with text in italics idicate notes/calculations not specifically included in the table as it is in the Project Description.

Typical Construction Equipment

Equipment Type by Project Phase	CalEEMod or RoadMod Equipment Type Equivalent	Number of Pieces	Equipment Engine Size (horsepower)	Fuel Type	Daily Operation of All Units (hours/day)	Total Working Days per Unit (days)	Daily Construction Workers (Per table 2.0-4) / Vendor Trips (Per Table 2-2)	Total Disturbance Area (Acres) (Per table 2.0-1)	Notes	Construction Phase	Modeling Tool
Access Roads and Pads		21					25	462 acres	*Assume 17 miles * 224' max width.* *Assume accounts for all roadway improvements, new access roads.*	*1*	*RoadMod*
Grader	*Grader*	1	RoadMod Default	Diesel	8	140					
Bulldozer	*Rubber Tired Dozer*	1	RoadMod Default	Diesel	8	140					
Excavator	*Excavator*	1	RoadMod Default	Diesel	8	140					
Loader	*Rubber Tired Loader*	1	RoadMod Default	Diesel	8	140					
Compactor	*Other Construction Equip*	1	RoadMod Default	Diesel	4	140					
Smooth drum compactor	*Other Construction Equip*	1	RoadMod Default	Diesel	4	100					
Off-road dump truck	*Off-Highway Trucks*	1	RoadMod Default	Diesel	6	140					
Belly dump trailers on tractors	*Off-Highway Trucks*	1	RoadMod Default	Diesel	6	140					
Water truck	*On-Road Vehicle*	3	EMFAC	Diesel	12	140					
Truck-mounted hydraulic jackhammer	*Other Construction Equip*	5	RoadMod Default	Diesel	8	45					
Small roller	*Roller*	2	RoadMod Default	Diesel	4	20					
Telescopic forklift	*Forklifts*	1	RoadMod Default	Diesel	8	45					
Large rubber tire roller	*Roller*	2	RoadMod Default	Diesel	6	45					
Backhoe	*Tractor/Loader/Backhoe*	2	RoadMod Default	Diesel	8	140					
Masticator	*Other Construction Equip*	1	RoadMod Default	Diesel	6	100					
Foundations		26					31	240	*4 acres per turbine (60 turbines) = 240 acres of disturbance.*	*1*	*CalEEMod*
Crane (40–60 ton)	*Crane*	1	CalEEMod Default	Diesel	4	60					
Large Excavator	*Excavator*	2	CalEEMod Default	Diesel	8	60					
Bulldozer	*Rubber Tired Dozer*	1	CalEEMod Default	Diesel	8	60					
Track hoe	*Excavator*	2	CalEEMod Default	Diesel	6	60					
Grader	*Grader*	1	CalEEMod Default	Diesel	6	60					
Off-road dump truck	*Off-Highway Trucks*	2	CalEEMod Default	Diesel	6	60					
Compactor	*Other Construction Equip*	1	CalEEMod Default	Diesel	4	60					
Smooth drum compactor	*Other Construction Equip*	1	CalEEMod Default	Diesel	4	60					
Large rubber tire roller	*Rollers*	1	CalEEMod Default	Diesel	4	60					
Belly dump trailers on tractors	*Off-Highway Trucks*	3	CalEEMod Default	Diesel	6	60					
Water truck	*On-Road Vehicle*	3	EMFAC	Diesel		60					
Truck-mounted hydraulic jackhammer	*Other Construction Equip*	2	CalEEMod Default	Diesel	4	45					
Loader	*Rubber Tired Loaders*	1	CalEEMod Default	Diesel	8	55					
Small roller	*Rollers*	1	CalEEMod Default	Diesel	4	45					
Telescopic forklift	*Forklifts*	1	CalEEMod Default	Diesel	2	60					
Remote dual drum compactor	*Other Construction Equip*	1	CalEEMod Default	Diesel	2	50					
Concrete truck or dry mix machine	*On-Road Vehicle*	5	EMFAC	Diesel		60					
Vibrating roller	*Rollers*	1	CalEEMod Default	Diesel	4	60					
Small compaction machine	*Plate Compactor*	2	CalEEMod Default	Diesel	2	60					
Jumping jack	*Other Construction Equip*	2	CalEEMod Default	Diesel	2	60					
Bridgeville Substation Upgrades		8					21			*3*	*CalEEMod*
Vertical drill rig	*Bore/Drill Rig*	2	175	Diesel	8	80					
Cranes (multiple)	*Crane*	1	500	Diesel	4	80					
Telescopic forklift	*Forklifts*	1	150	Diesel	8	80					
Loader	*Rubber Tired Loader*	1	370	Diesel	6	80					
Backhoe	*Tractor/Loader/Backhoe*	1	124	Diesel	8	80					
Trencher	*Other Construction Equip*	2	115	Diesel	6	80					
Transmission Line Construction		26					92	69	*Assume workers for Collection Sytem, Directional Boring, Gen-Tie, and general Laborers (1/2 of them here) are all accounted for here.* *Acres = 19miles * 30 ft width.*	*2*	*RoadMod*
Vertical drill rig	*Bore/Drill Rig*	3	175	Diesel	6	200					
Excavator	*Excavator*	1	350	Diesel	8	200					
Bulldozer	*Rubber Tired Dozer*	1	350	Diesel	6	200					
Off-road dump truck	*Off-Highway Trucks*	5	470	Diesel	6	200					
Water truck	*On-Road Vehicle*	2	EMFAC	Diesel	10	200					
Boom trucks with man b	*On-Road Vehicle*	3	EMFAC	Diesel	8	200					
Concrete truck or dry mi	*On-Road Vehicle*	5	EMFAC	Diesel	6	200					
Compactor	*Other Construction Equip*	2	350	Diesel	4	200					
Smooth drum vibrating compactor	*Other Construction Equip*	2	175	Diesel	4	200					
Remote dual drum compactor	*Other Construction Equip*	2	175	Diesel	4	200					
Large rubber tire roller	*Rollers*	2	175	Diesel	4	200					
Belly dump trailers on tractors	*Off-Highway Trucks*	2	500	Diesel	6	200					
Backhoe	*Tractor/Loader/Backhoe*	1	124	Diesel	6	200					
Man lift	*Aerial Lift*	3	90	Diesel	6	200					
Cranes (multiple)	*Crane*	2	500	Diesel	8	200					
Helicopter	*Other*	1	847	Diesel	8	200					
Rotating boom derrick	*On-Road Vehicle*	5	175	Diesel	8	200					
Project Substation Construction		16					21	3		*3*	*CalEEMod*
Cranes (multiple)		1	500	Diesel	4	84					
Backhoe	*Tractor/Loader/Backhoe*	2	124	Diesel	8	84					
Concrete truck or dry mix machine	*Other Material Handling Equip*	5	EMFAC	Diesel	8	84					
Large Trencher Machine	*Other Construction Equip*	2	115	Diesel	6	84					
Boom trucks with man baskets	*Off-Highway Trucks*	2	EMFAC	Diesel	6	84					

Padding machine	*Other Construction Equip*	2	500	Diese	6	84					
Small compaction machine	*Plate Compactor*	3	20	Diese	4	84					
Man lift	*Aerial Lift*	2	90	Diese	6	84					
Jumping jack	*Other Construction Equip*	3	120	Diese	4	84					
Vibrating roller	*Rollers*	1	175	Diese	4	84					
Turbine Assembly/Erection		17					81	40	*Assume workers for Turbine Erecting, unloading, and Turbine Supplier and Laborers (1/2 of them here) are accounted for here.*	*2*	*CalEEMod*
Cranes (multiple)	*Crane*	1	CalEEMod Default	Diese	6	65					
Cranes (40–60 ton)	*Crane*	3	CalEEMod Default	Diese	6	65					
Telescopic forklift	*Forklifts*	3	CalEEMod Default	Diese	8	65					
Pulling trailer and pulling truck	*On-Road Vehicle*	5	EMFAC	Diese	10	65					
Man lift	*Aerial Lift*	5	CalEEMod Default	Diese	8	65					
Environmental Pre-Construction Surveys							8	0		*0*	*EMFAC2014 Streadsheet*
Pickup and flatbed trucks		8	500	Diese	10	65					
O&M							15	5		*0*	*CalEEMod*
CalEEMod Defaults											

Table 2.0-2 Heavy Truck Trips

Component	Heavy Truck Trips by Component*	Total Heavy Truck Trips	Tips Per Day
Turbines (60)	4	240	*4*
Rock	33	2,000	*5*
Water	91	5,470	*14*
Cement	1	73	*1*
Sand	31	1,890	*5*
Total		9,673	*23*
Number of days of construction (18 months, 5 dys/wk) =			405

Source: Humboldt Wind LLC

* Numbers may not sum due to rounding.

Construction Phasing, per client

1. Applicant indicated construction phasing would begin in Winter 2019 with tree clearing across entire project and grading for access road from Jordan creek off-ramp extending up the hill. Once access road is graded turbine pads would be created. (See yellow highlights on construction equipment chart)

2. Second phase begins the spring of 2020 when turbines would be transported to the staging area at Jordan creek and simultaneously foundations excavated and cement poured to permit erection and installation of turbines. The Gen Tie line would be installed concurrent with turbine erection in spring 2020. (see teal colored equipment list)

3. Final phase would consist of installing on-site project substation and constructing expansion of the existing Bridgeville substation. Then testing will be conducted followed by commissioning of project. (see green highlights).

4. Total duration is approximately 18 months.

Table 2.0-4

Construction Activity	Workforce	Typical Equipment	NOTES
Office Staff/Management	10	Pickup and small vehicles	*Not included in construction - assume typical workforce or*
Foundations	30	Dozer,	*Foundations phase*
Roads	24	Dozer, grader, front end loaders,	*Roadways phase*
Turbine Component Unloading Crew (pad site)	15	Cranes, all-terrain forklifts, pickup trucks with trailers	*Turbine phase*
Turbine Erecting	40	Cranes,	*Turbine phase*
Environmental	8	pickup and flatbed	*Pre-Const phase*
Substation	20	Cranes,	*Substation phase*
Collection System	30	Trenchet,	*Collection System*
Directional Boring	8	boring	*Collection System*
Gen-Tie	53	Cranes,	*Collection System*
Laborers	30	Pickup	*Distributed*
Owner Representatives	7	Pickup	*Distributed throughout*
Turbine Supplier	25	Pickup	*Turbine phase*
Total Number of Workers	300	N/A	

Construction Duration	Duration	Overlapping	Vendor/Hauling	Construction Workers	
Environmental / Tree Clearing	65				8
Access Roads and Pads	140	140		25	24
Foundations	60			25	31
Turbines	65			29	61
Transmission Line Construction	200	200		25	54
Substations	84	84		25	20
O&M Facility			CalEEMod Default	CalEEMod Default	
					198

* This is a part of Transmission Line (GenTie) construction, so not added to the 53 GenTie workers.

* Assume Counted as part of the max daily workers listed for each individual phase.

* Assume max of 1 owner/representative would be on-site daily.

*Transmission Line = GenTie

*Not all workers would be present on the same day - assume 75% of workers present on same day at site.

* Collection System and GenTie construction will take place overlapping with foundation and turbine construction, but max daily nostruction workers assumes maximum of either construction activity not both constructing at max daily simultaneously.

CalEEMod and RoadMod Emissions Modeling Outputs

		Max Daily (lb/day)				Total (tons/phase)						
Construction Element	Construction Phasing	ROG	NO_X	PM_{10} (Total)	$PM_{2.5}$	ROG	NO_X	PM_{10} (Fugitive Dust)	PM_{10} (DPM)	PM_{10}	$PM_{2.5}$	CO2e (MT / year)
Environmental Work												
	Phase 1 (1 month)	0.02	0.11	0.03	0.01	0.0003	0.002	0.0004	0.0000	0.0005	0.0001	2.4143
Roadway Improvements												
	Phase 1 (6 months)	9.10	98.29	27.40	9.97	0.63	6.87	1.62	0.31	1.92	0.70	2,470.99
Foundations												
	Phase 2 (3 months)	7.97	100.96	12.28	6.70	0.24	2.45	0.22	0.10	0.32	0.20	350.79
Collection System												
	Phase 2 (9 months)	19.02	145.64	24.18	9.65	1.89	14.55	1.53	0.50	2.03	0.91	1,947.78
Turbine Delivery/Construction												
	Phase 2 (3 months)	8.20	74.83	3.43	2.26	0.18	1.68	0.04	0.05	0.09	0.06	378.90
Substations												
	Phase 3 (4 months)	7.98	83.80	4.38	3.42	0.33	3.52	0.05	0.14	0.19	0.14	636.82
O&M Facility												
	Phase 3 (3 months)	14.13	40.63	20.26	11.85	0.13	0.55	0.07	0.03	0.10	0.07	69.38
TOTAL ANNUAL												
	Phase 1	9.12	98.40	27.44	9.98	0.63	6.87	1.62	0.31	1.92	0.70	2,473.40
	Phase 2	35.20	321.42	39.90	18.60	2.31	18.68	1.80	0.65	2.45	1.16	2,677.47
	Phase 3	22.11	124.44	24.64	15.27	0.46	4.07	0.12	0.17	0.29	0.21	706.19
	Maximum (Total MT Co2e)	35.20	321.42	39.90	18.60	2.77	22.75	1.92	0.82	2.74	1.37	5,857.07
	Thresholds of Significance	50.00	50.00	80.00	50.00	40.00	40.00	-	-	15.00	10.00	
	Excced Thresholds?	No	Yes	No	No	No	No	No	No	No	No	

Mitigated Emissions

		Max Daily (lb/day)				Max Annual (tons/phase)						
Construction Element	Construction Phasing	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10} (Fugitive Dust)	PM_{10} (DPM)	PM_{10}	$PM_{2.5}$	CO2e (MT / year)
Environmental Work												
	Phase 1 (1 month)	0.02	0.11	0.03	0.01	0.0003	0.002	0.000	0.000	0.0005	0.0001	2.4143
Roadway Improvements												
	Phase 1 (6 months)	2.28	16.97	18.52	4.22	0.16	1.18	1.28	0.02	1.30	0.30	811.51
Foundations												
	Phase 2 (3 months)	2.23	33.58	5.71	2.07	0.06	0.43	0.12	0.01	0.12	0.06	73.07
Collection System												
	Phase 2 (9 months)	12.80	71.42	18.04	5.18	1.27	7.13	1.28	0.18	1.46	1.85	1,947.78
Turbine Delivery/Construction												
	Phase 2 (3 months)	6.69	57.43	2.45	1.36	0.13	1.11	0.04	0.02	0.06	0.03	378.90
Substations												
	Phase 3 (4 months)	2.42	15.82	1.32	0.56	0.10	0.66	0.05	0.01	0.06	0.03	636.82
O&M Facility												
	Phase 3 (3 months)	13.94	2.38	8.34	4.57	0.08	0.06	0.03	0.00	0.04	0.02	69.38
TOTAL ANNUAL												
	Phase 1	2.30	17.08	18.55	4.23	0.16	1.18	1.28	0.02	1.30	0.30	813.92
	Phase 2	21.72	162.43	26.20	8.61	1.46	8.68	1.44	0.20	1.64	1.94	2,399.74
	Phase 3	16.36	18.20	9.66	5.13	0.18	0.72	0.08	0.01	0.10	0.04	706.19
	Maximum (Total MT Co2e)	21.72	162.43	26.20	8.61	1.64	9.39	1.52	0.21	1.74	1.99	3,919.86
	Thresholds of Significance	50.00	50.00	80.00	50.00	40.00	40.00	-	-	15.00	10.00	
	Excced Thresholds?	No	Yes	No	No	No	No	No	No	No	No	

Total construction days (18 month	547
Pounds per ton:	2000

GHG Amortized Emissions:	
Total GHG emissions during construction (MT CO2e):	3,919.86
Amortization period (years):	25
Amortized annual GHG emissions:	156.79

Annual Operational GHG Emissions:	89.35411
Operational + Amortized Construtction:	246.15

Operational Emmissions					
Max Theoretical Generating Capcity	Capacity Factor [a]		Operational Duration	Energy Generation Rate (MWh)	Energy Generation Rate (MMBtu)
155 MW		30%	24 hrs/day; 365 dys/yr	407,340	1,389,844.08
Energy Generation Rate = Generating Capcity * Capcity Factor * Operational Duration					

[a] EIA 2018. Electric Power Monthly. Table 6.7.B. Capacity Factors for Utility Scale Generators Not Primarily Using Fossil Fuels, January 2013 - October 2018. Available at:
1 MWh = 3.412000 MMBtu

GHG emissions offsets from wind power vs. fossil fuels:	
Energy Generation Rate (MW hours per year)	407,340
CO2 emissions from fossil fuel generated electricity (lb/MW hour)[a]	940
Theoretical CO2 emissions if proposed project's electricity were produced via fossil fuel (pounds per year)	382,899,600
Theoretical CO2 emissions if proposed project's electricity were produced via fossil fuel (tons per year)	173,682.12
pounds per metric ton:	2204.6

[a] PG&E 2018. Corporate Responsibility and Sustainability Report.
http://www.pgecorp.com/corp_responsibility/reports/2018/assets/PGE_CRSR_2018.pdf

CalEEMod Operationa Emissions Estimates:

	Annual (Tons/Year)				
Operational Source	ROG	NOX	PM10	PM2.5	MT CO2e
Area	0.0304	0	0	0	0.00011
Energy	0.00011	0.00103	0.00008	0.00008	8.6304
Mobile	0.00171	0.0096	0.00326	0.00092	4.1023
Offroad	0.0102	0.1009	0.00401	0.00369	21.0319
Stationary	0.1026	0.2867	0.0151	0.0151	47.7665
Waste	-	-	0	0	3.7416
Water	-	-	0	0	4.0813
Total Annual Emissions	0.14502	0.39823	0.02245	0.01979	89.35411
NCUAQMD Thresholds	40	40	15	10	-
Exceed Thresholds?	No	No	No	No	No

Operational Energy Demands and Production

Construction Energy Demands

Phase	MT CO_2e/source [a]	Fuel Type [b]		Factor (MT CO_2e/gallon) [c]	Total Gallons
Environmental	2.41	Diesel		0.01016	238
Roadways	2470.99	Diesel		0.01016	243,208
Foundations	349.99	Diesel		0.01016	34,448
Collection System	1453.01	Diesel		0.01016	143,012
Turbines	165.56	Diesel		0.01016	16,295
Substations	636.82	Diesel		0.01016	62,679
Operations & Maintenance Facility	69.38	Diesel		0.01016	6,828
		Total Gallons	Diesel		506,708
		Total Energy	MMBTU		69,973.92
		Amortized Demands (over 25 years)	Diesel		20,268
			MMBTU		2,799

Notes:

Assumed amortization period is 25 years.

Sources:

[a] Modeled by AECOM in 2018;

[b] Conservatively assumed all off-rad and on-road vehicles would be diesel fuel.

[c] U.S. Energy Information Administration 2016 (https://www.eia.gov/environment/emissions/co2_vol_mass.php)

Amortization period (yrs): 25

Conversion Factors		
Category	Amount	Units
Diesel	1.02E-02	MT CO2e/gallon
Gasoline	8.89E-03	MT CO2e/gallon
Diesel (heat content) [a]	5.8	MMBtu/barrel
Gallons per Barrel [a]	42	gallons/barrel

[a] http://www.theclimateregistry.org/wp-content/uploads/2017/05/2017-Climate-Registry-Default-Emission-Factors.pdf

Operational Energy Demand		Unit	MMBtu/year
Facility Energy Demand (natrual gas)	21,060	kBtu/year	21.06
Facility Energy Demand (electricity)	25,680	kWh/year	87.65
Operations Mobile Energy Use*	7,175	gallons Diesel/year	990.87
Total Energy		MMBTU	1,099.58

*Conservatively assumed all mobile operations utilized diesel.

Operations Mobile Energy Use	MT CO_2e/year [a]	Fuel Type [b]		Emissions Factor (MT CO_2e/gallon) [c]	Total Gallons Diesel
Offroad Maintenance Equipment	21.03	Diesel		0.01016	2,070
Emergency Generator	47.77	Diesel		0.01016	4,701
O&M Vehicles	4.10	Diesel		0.01016	404
		Total Gallons	Diesel		7,175
		Total Energy	MMBTU		990.87

Sources:

[a] Modeled by AECOM in 2018;

[b] Conservatively assumed all off-rad and on-road vehicles would be diesel fueled.

[c] U.S. Energy Information Administration 2016 (https://www.eia.gov/environment/emissions/co2_vol_mass.php)

Project Energy Requirements	
Annual Amortized Construction	2,799
Operational Facility + Mobile	1,100
Total Annual Project Energy Requirements	3,899

Operational Energy Generation

Max Theoretical Generating Capcity	Capacity Factor [a]	Operational Duration	Energy Generation Rate (MWh)	Energy Generation Rate (MMBtu)
155 MW	30%	24 hrs/day; 365 dys/yr	407,340	1,389,844.08

Energy Generation Rate = Generating Capcity * Capcity Factor * Operational Duration

[a] EIA 2018. Electric Power Monthly. Table 6.7.B. Capacity Factors for Utility Scale Generators Not Primarily Using Fossil Fuels, January 2013 - October 2018. Available at: https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_6_07_b.

1 MWh = 3.412000 MMBtu

On-Road Construction Emissions from Pre-Construction Environmental Surveys

Worker Trips work days

30

	Max Daily Trips (one-way)	Distance (one-way)	Max Daily Mileage	Calculated Time - Rounded (days)	Total Mileage	Emissions Summary (lbs/day) ROG	NO_x	CO	PM10 (Fugitive Dust)	PM10 (DPM)	PM10	PM2.5	Emissions Summary (tons per phase) ROG	NO_x	CO	PM10 (Fugitive Dust)	PM10 (DPM)	PM10	PM2.5	Total GHG Emissions (MT CO2e)
Worker Trips	8	10	160	30	4,800	0.02	0.11	0.51	0.03	0.00	0.03	0.01	0.00	0.00	0.01	0.00	0.00	0.00	0.00	2.41
Total						**0.02**	**0.11**	**0.51**	**0.03**	**0.00**	**0.03**	**0.01**	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**2.41**

*PM10 fugitive Dust emissions are inclusive of brake and tire wear and on-road fugitive dust generation.

EMFAC2014 Emission Factors:

			Emission Factors (g/mile)									
Vehicle Type	Year	Vehicle Class	ROG	NO_X	CO	PM_{10} (Fugitive Dust)	PM_{10} (DPM)	PM_{10}	$PM_{2.5}$	CO_2	CH4*	N2O*
Truck - Average of Gas and Diesel	2019	MDV	0.055	0.326	1.457	0.045	0.008	0.053	0.025	501.558	0.0051	0.0048

*Source for CH4 and N2O emission factos is: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf
For MDV vehicles aggregate model year 1960 to present.

Global Warming Potential	
CO2	1
CH4	28
N2O	265

*Per IPCC 5th Assessment Report (AR5)

Conversion Factors:	
grams per pound:	453.59237
pounds per ton:	2000
pounds per metric ton:	2204.6

Roadway Construction and Improvements 4RoadMod Emissions Estimates

	Daily (lb/day)						Annual (Tons/Year)						
	ROG	NOX	PM10 (Fugitive Dust)	PM10 (DPM)	PM10	PM2.5	ROG	NOX	PM10 (Fugitive Dust)	PM10 (DPM)	PM10	PM2.5	MT CO2e
On-site	8.0813	86.7772	8.6733	4.2821	12.9554	7.536	0.5657	6.0744	0.6071	0.2997	0.9069	0.5275	649.1507
Off-site	1.02	11.5082	0.894	0.1103	1.0043	0.3537	0.0668	0.7956	0.0591	0.00762	0.0667	0.0238	162.3558
Total Proposed Project	9.1013	98.2854	9.5673	4.3924	13.9597	7.8897	0.6325	6.87	0.6662	0.30732	0.9736	0.5513	2470.99
On-site	1.2603	5.4612	3.903	0.168	4.071	1.7865	0.0882	0.3823	0.2732	0.0118	0.285	0.1251	649.1499
Off-site	1.02	11.5082	0.894	0.1103	1.0043	0.3537	0.0668	0.7956	0.0591	0.00762	0.0667	0.0238	162.3558
Total Mitigated	2.2803	16.9694	4.797	0.2783	5.0753	2.1402	0.155	1.1779	0.3323	0.01942	0.3517	0.1489	811.5057

Foundations and Turbines Construction CalEEMod Outputs

Proposed Action

	Maximum Daily Emissions (lb/day)						Annual Emissions (tons/year)						
	ROG	NO_X	PM_{10} (Fugitive Dust)	PM_{10} (DPM)	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10} (Fugitive Dust)	PM_{10} (DPM)	PM_{10}	$PM_{2.5}$	CO2e (MT / year)
Foundations													
on-site	7.1081	73.3155	6.4198	3.2253	9.6451	6.3209	0.2132	2.1995	0.1926	0.0968	0.2894	0.1896	296.8846
off-site	0.8641	7.2438	0.8469	0.0487	0.8956	0.2786	0.0238	0.2143	0.024	0.00144	0.02544	0.00798	53.1033
Total	7.9722	80.5593	7.2667	3.274	10.5407	6.5995	0.237	2.4138	0.2166	0.09824	0.31484	0.19758	349.9879
Turbines													
on-site	1.9902	23.2853	0	1.0284	1.0284	0.9461	0.0647	0.7568	0	0.0334	0.0334	0.0308	87.191
off-site	1.4604	8.8149	1.3938	0.0604	1.4543	0.436	0.0433	0.2813	0.0427	0.00193	0.04463	0.0135	78.3668
Total	3.4506	32.1002	1.3938	1.0888	2.4827	1.3821	0.108	1.0381	0.0427	0.03533	0.07803	0.0443	165.5578

Mitigated

	ROG	NO_X	PM_{10} (Fugitive Dust)	PM_{10} (DPM)	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10} (Fugitive Dust)	PM_{10} (DPM)	PM_{10}	$PM_{2.5}$	CO2e (MT / year)
Foundations													
on-site	1.37	5.9364	2.8889	0.1827	3.0716	1.6916	0.0411	0.1781	0.0867	0.00548	0.09218	0.0508	0.0508
off-site	0.8641	7.2438	0.8469	0.0487	0.8956	0.2786	0.0238	0.2143	0.024	0.00144	0.02544	0.00798	72.2113
Total	2.2341	13.1802	3.7358	0.2314	3.9672	1.9702	0.0649	0.3924	0.1107	0.00692	0.11762	0.05878	72.2621
Turbines													
on-site	0.4759	5.8854	0	0.0497	0.0497	0.0497	0.0155	0.1913	0	0.00161	0.00161	0.00161	87.1909
off-site	1.4604	8.8149	1.3938	0.0604	1.4543	0.436	0.0433	0.2813	0.0427	0.00193	0.04463	0.0135	78.3668
Total	1.9363	14.7003	1.3938	0.1101	1.504	0.4857	0.0588	0.4726	0.0427	0.00354	0.04624	0.01511	165.5577

Collection and Gen-Tie Construction RoadMod Emissions Estimates

	Daily (lb/day)						Annual (Tons/Year)						
	ROG	NOX	PM10 (Fugitive Dust)	PM10 (DPM)	PM10	PM2.5	ROG	NOX	PM10 (Fugitive Dust)	PM10 (DPM)	PM10	PM2.5	MT CO2e
On-Site	8.0035	83.6398	4.5166	3.5094	8.026	5.7114	0.8004	8.364	0.4517	0.3509	0.8026	0.5711	1247.4036
Off-Site	1.23	7.5729	1.1755	0.0519	1.2274	0.3687	0.1123	0.7437	0.1107	0.00512	0.1158	0.0351	205.6019
Total Unmitigated	9.2335	91.2127	5.6921	3.5613	9.2534	6.0801	0.9127	9.1077	0.5624	0.35602	0.9184	0.6062	1453.0055
On-Site	1.7785	9.4274	2.0325	0.2309	2.2634	1.3481	0.1779	0.9427	0.2033	0.0231	0.2263	0.1348	1247.4022
Off-Site	1.23	7.5729	1.1755	0.0519	1.2274	0.3687	0.1123	0.7437	0.1107	0.00512	0.1158	0.0351	205.6019
Total Mitigated	3.0085	17.0003	3.208	0.2828	3.4908	1.7168	0.2902	1.6864	0.314	0.02822	0.3421	0.1699	1453.0041

Substations Construction - CalEEMod Outputs

	ROG	NO_X	PM10 (Fugitive Dust)	PM10 (DPM)	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM10 (Fugitive Dust)	PM10 (DPM)	PM_{10}	$PM_{2.5}$	CO2e (MT / year)
On-Site	7.3139	76.7416	0	3.2884	3.2884	3.0842	0.3072	3.2232	0	0.1381	0.1381	0.1295	569.0791
Off-Site	0.6628	7.0628	0.6662	0.0469	0.7131	0.2291	0.0258	0.2931	0.0264	0.00194	0.0284	0.00921	67.7401
Total Proposed	7.9767	83.8044	0.6662	3.3353	4.0015	3.3133	0.333	3.5163	0.0264	0.14004	0.1665	0.13871	636.8192
On-Site	1.7576	8.7567	0	0.2302	0.2302	0.2302	0.0738	0.3678	0	0.00967	0.00976	0.00976	569.0784
Off-Site	0.6628	7.0628	0.6602	0.0469	0.7131	0.2291	0.0258	0.2931	0.0264	0.00194	0.0284	0.00921	67.7401
Total Mitigated	2.4204	15.8195	0.6602	0.2771	0.9433	0.4593	0.0996	0.6609	0.0264	0.01161	0.03816	0.01897	636.8185

O&M Facility Construction - CalEEMod Outputs

	ROG	NO_X	PM_{10} (Fugitive Dust)	PM_{10} (DPM)	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10} (Fugitive Dust)	PM_{10} (DPM)	PM_{10}	$PM_{2.5}$	CO2e (MT / year)
Total Proposed	14.1326	40.6317	18.2141	2.0458	20.2599	11.8521	0.1275	0.5503	0.0734	0.0287	0.1021	0.0656	69.3756
Total Mitigated	13.9434	2.3814	8.2777	0.0634	8.3411	4.5714	0.0809	0.0563	0.0341	0.00123	0.03533	0.019	69.3756

Marine Emissions

Tugboat Classification	Engine	Engine Tier	Fuel	# Engines	Engine Rating (hp)	Engine Rating (kW)	Load Factor	Operation (hr/day)	Operation (days/yr)	Emission Factors VOC (g/kW-hr)	NOx	CO	PM10	PM2.5	CO2	CH4	N20	Emissions VOC (lb/day)	NOx	CO	PM10	PM2.5	CO2	CH4	N20	CO2 (MT/yr)	CH4	N20	CO2E
Ocean Tug	Propulsion	4	15 ppm S	2	4,300	3,207	0.41	4.00	30	0.200	1.800	5.000	0.040	0.04	652	0.004	0.031	4.60	41.37	114.93	0.92	0.85	14,987	0.09	0.71	203.93	0.00	0.01	206.54
Ocean Tug	Auxiliary	4	15 ppm S	2	133	99	0.43	4.00	30	0.200	1.800	5.000	0.040	0.04	656	0.004	0.031	0.15	1.35	3.76	0.03	0.03	493	0.00	0.02	6.71	0.00	0.00	6.80
Emission Subtotals																		4.75	42.73	118.69	0.95	0.87	15,480.01	0.09	0.74	210.65	0.00	0.01	213.34

Emission Factors					VOC	NOx	CO	PM10	CO2	CH4	N2O
Engine Type		Model	Tier	Fuel	(g/kW-hr)						
Medium Speed Diesel		2020+	Tier 4	15 ppm S	0.200	1.8	5	0.04	652	0.004	0.031

Notes:
VOC = 1.053 x HC per Conversion Factors for Hydrocarbon Emission Components, EPA-420-R-10-015, July 2010.
EPA Emission Standards for Harbor Craft Emissions (Tier 4) www.epa.gov/otaq/marine.htm
PM2.5 assumed to be 92% of PM10 based on SCAQMD document titled Final PM2.5 Calculation Methodology and PM2.5 Significance Thresholds

	Global Warming Potential*
CO2	1
CH4	28
N2O	265

*Per IPCC 5th Assessment Report (AR5)

Helicopter Criteria Pollutant Daily Exhaust Emissions

Equipment	VOC (lb/day)	CO (lb/day)	NOX (lb/day)	SOX (lb/day)	PM10 (lb/day)	PM2.5 (lb/day)	VOC (tpy)	CO (tpy)	NOX (tpy)	SOX (tpy)	PM10 (tpy)	PM2.5 (tpy)	CO2 (MT/year)
Helicopter (847 horsepower)	9.79	11.17	54.42	28.71	1.49	1.49	0.98	1.12	5.44	2.87	0.15	0.15	494.78

Helicopter Use Summary

Equipment	Number	Days Used/Year	Hours Used/ Day	Total Hours Used/ Day
Helicopter (847 horsepower)	1	200	8.00	8

pounds per ton	2000
pounds per me	2204.6

Table 9. Estimated LTO (Landing and Take-Off Cycle) emissions and one hour operation emissions for helicopter activity

					LTO Emissions					One hour emissions				
Aircraft ICAO	Aircraft Name	Engine Name	Max SHP per engine	Number of Engines	LTO fuel (kg)	LTO NOx (g)	LTO HC (g)	LTO CO (g)	LTO PM non volatile (g)	One hour fuel (kg)	One hour NOx (kg)	One hour HC (kg)	One hour CO (kg)	One hour PM non vol. (kg)
Used Average Emissions from Aircraft listest with Max SHP per engine from 700 to 1000 (equipment list showed 847 max hp)			1500	1	41.77	361.38	218.39	272.57	10.35	271.28	3.09	0.53	0.63	0.08

Source: Guidance on the Determination of Helicopter Emissions, Federal Department of the Environment, Transport, Energy and Communications DETEC, Federal Office of Civil Aviation (FOCA), Division Aviation Policy and Strategy, Swiss Confederation, December 2015.
https://www.bazl.admin.ch/bazl/en/home/specialists/regulations-and-guidelines/environment/pollutant-emissions/triebwerkemissionen/guidance-on-the-determination-

Helicopter Emission Factors

Equipment	VOC (lb/hr)	CO (lb/hr)	NOX (lb/hr)	SOX (lb/hr)	PM10 (lb/hr)	PM2.5 (lb/hr)	CO2e (lb/hr)	N2O (lb/hr)
Helicopter (847 horsepower)	1.224	1.396	6.803	3.588	0.186	0.186	681.74	0.0215

All emission factors except SOx and PM2.5 and from Guidance on the Determination of Helicopter Emissions, Federal Department of the Environment, Transport, Energy and Communications, DETEC, Federal Office of Civil Aviation FOCA, Division Aviation Policy and Strategy, Swiss Confederation, March 2009.

VOC = 1.053 x HC per Conversion Factors for Hydrocarbon Emission Components, EPA-420-R-10-015, July 2010.

Emissions Calculations:

Pollutant	Source	Emission Factor	Units	Maximum Daily (lbs/day)	Annual (lbs/year)	Annual (ton/year)
ROG	1	N/A	lb/ton	—	—	—
NOx	1	17	lb/ton	20.40	81.60	0.04
CO	1	67	lb/ton	80.40	321.60	0.16
SOx	1	2	lb/ton	2.40	9.60	0.00
PM_{10}	2	—	lb/blast	1.74	13.91	0.01
$PM_{2.5}$	2	—	lb/blast	0.10	0.80	0.00

Source/Reference:
1. AP-42, Section 13.3, Table 13.3-1 for ANFO.
2. AP-42, Section 11.9, Table 11.9-1.

$PM_{10} = 0.52 \times 0.000014 \times (A)^{1.5}$, where A is the horizontal area blasted.

$PM_{2.5} = 0.03 \times 0.000014 \times (A)^{1.5}$, where A is the horizontal area blasted.

Notes:
lb = pounds

GHG Emissions Calculation Comparison:

Pollutant	Source	Emission Factor	Units	Maximum Daily (lbs/day)	Annual (lbs/year)	Annual (MT/year)
CO_2	1	10.35	kg/gallon	--	--	0.80
CO_2	2	0.1670	MT/MT	--	--	0.73

Source/Reference:
1. The Climate Registry. 2018 Emission Factors. Table 12.1 U.S. Default Factors for Calculating CO2 Emissions from Combustion of Fossil Fuel and Biomass.
2. Australian Government - Department of Heritage Australian Greenhouse Office. AGO Factors and Methods Workbook. December 2006

Conversion Values:

7.41	lbs/gallon fuel oil
6.00%	composition of fuel oil #2 in ANFO
10.35	kg CO2/gallon fuel oil #2
2000	lbs/ton
1000	kg/MT
1.102	tons/MT

Notes:
MT = metric tons
kg = kilograms
lb = pounds

Temporary Concrete Batch Plant - PM Emissions

Maximum Quantity of Concrete Produced (yd/yr) =	36,000
Days of Operation per Year =	365

Composition of Concrete

Material	lb/yd	ton/yr	
Cement	491	8,838	
Water	167	3,006	[167 = 20 gal/yd X 8.34 lb/gal]
Total Concrete Material Required	4,024	13,158	

Emissions from Concrete Batching

*water spray efficiency 70%

Process	lb/ton	controlled lb/ton	lb/yr	PM10 lb/day	PM10 tpy	PM2.5 lb/day	PM2.5 tpy
Cement delivery to Silo (controlled)		0.00034	3.00E+00				
Central Mix loading (controlled)		0.0048	4.87E+01				
PM10 Emissions from Concrete Batching (lb/yr) =			58.17	0.159	0.029	0.06853	0.01

Emissions from Unpaved Roads	PM10	PM2.5				
Emission Factor of Unpaved Roads (lb/VMT) =	2.17	0.18				
# VMT/yr	-	-				
Abatement Efficiency (%) =	81	81				
PM10 Emissions from Unpaved Roads (lb/yr) =	-	-	0.000	0.000	0.000	0.000

Emissions from Storage Piles	PM10	PM2.5				
Emission Factor of Storage Piles (lb/acre/day)	1.7	0.255				
Area of Storage Piles (acres) =	1	1				
# Days Storage Piles Exist =	48	48				
PM10 Emissions from Storage Piles (lb/yr) =	81.6	12.24	0.224	0.041	0.034	0.006
Total PM10 Emissions (lb/yr) =	139.77		0.383	0.070	0.102	0.019
Total PM10 Emissions (TPY) =	0.07					
Total PM2.5 Emissions (lb/yr) =	37.25					
Total PM2.5 Emissions (TPY) =	0.02					

Pollutant	Silo Fill lb/ton Cement	Silo Fill lb/ton Cement Supp	Central Mix lb/ton Cement & Cement Supp
Arsenic	4.24E-09	1.00E-06	1.87E-08
Beryllium	4.86E-10	9.04E-08	
Cadmium	4.86E-10	1.98E-10	7.10E-10
Chromium (hexavalent)*	2.50E-09	1.59E-07	5.08E-09
Lead	1.08E-08	5.20E-07	3.66E-08
Manganese	1.17E-07	2.56E-07	3.78E-06
Nickel	4.18E-08	2.28E-06	2.48E-07
Phosphorus		3.54E-06	1.20E-06
Selenium		7.24E-08	

Pollutant	TOTAL lb/yr	Machine Max lb/hr
Arsenic	1.54E-03	3.84E-07
Beryllium	1.23E-04	3.07E-08
Cadmium	1.18E-05	2.93E-09
Chromium (hexavalent)	2.83E-04	7.04E-08
Lead	1.15E-03	2.86E-07
Manganese	3.97E-02	9.90E-06
Nickel	5.88E-03	1.47E-06
Phosphorus	1.68E-02	4.19E-06
Selenium	9.51E-05	2.37E-08

Stockpiling Fugitive Dust Emission Factors

Fugitive Dust Emission Factors

$EF_D = k \times (0.0032) \times ((U/5)^{1.3})/((M/2)^{1.4})$

Variable	Amount	Units	
EF (PM_{10})	0.0012	lb/ton	
EF ($PM_{2.5}$)	0.00018	lb/ton	
k (PM_{10})	0.35	factor	
k ($PM_{2.5}$)	0.053	factor	
U (mean wind speed)	6.50	miles/hr	Consistent with Air Quality Report (Figure 1. Bishop Wind Rose)
M (moisture content)	2.40	percent	USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Correction

E (lbs) = EF (lb/ton) x TP (tons)

Amount of material moved:
3 million cy
999 lb/cy *Per USEPA 2016, Volume to Weight Conversion Factors
2,997,000,000 lbs
1,498,500 tons

Stockpiling emissions

			Unmitigated		Mitigated		Unmitigated		Mitigated	
Total Materials Moved (cy)	Total Materials Moved (tons)	Daily Materials Moved (tons/day)	Daily PM_{10} (lbs/day)	Daily $PM_{2.5}$ (lbs/day)	Daily PM_{10} (lbs/day)	Daily $PM_{2.5}$ (lbs/day)	PM_{10} (tons / phase)	$PM_{2.5}$ (tons/phase)	PM_{10} (tons/phase)	$PM_{2.5}$ (tons/phase)
3,000,000	1,498,500	10,703.57	13.0623	1.9780	13.0623	1.9780	0.9144	0.1385	0.9144	0.1385

* Mitigation % reduction in emissions assumed: 0%

* Mitigation percent reduction based on South Coast AQMD Table XI-E, Mitigation Measure Examples: Fugitive Dust From Storage Piles, rev 4/2007 (http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies/fugitive-dust)

To estimate maximum daily emissions, assume total stockpiled material would be moved within the initial construction phase (roadway improvements & pads), although it would likely be distributed throughout other construction acctivities as well.

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Federal Department of the
Environment, Transport, Energy and Communications DETEC

Federal Office of Civil Aviation FOCA
Division Aviation Policy and Strategy

					LTO Emissions					One hour emissions				
Aircraft_ ICAO	Aircraft_Name	Engine_Name	Max SHP per engine	Number_of_ Engines	LTO fuel (kg)	LTO NOx (g)	LTO HC (g)	LTO CO (g)	LTO PM non volatile (g)	One hour fuel (kg)	One hour NOx (kg)	One hour HC (kg)	One hour CO (kg)	One hour PM non vol. (kg)
A109	AGUSTA A109	DDA250-C20R/1	450	2	33.8	139	952	1252	5	210	1.11	1.74	2.17	0.036
A109	AGUSTA A109E	PW206C	550	2	37.1	172	841	1100	6	209	1.24	1.40	1.74	0.039
A109	AGUSTA A109	PW207C	650	2	41.6	212	779	1013	7	237	1.55	1.32	1.63	0.047
A109	AGUSTA A109 K2	ARRIEL1K1	738	2	44.4	245	720	933	8	255	1.79	1.24	1.53	0.053
A109	AGUSTA A109 Power	ARRIUS 2K	670	2	42.2	220	765	993	7	241	1.60	1.30	1.60	0.048
A109	AGUSTA A109A II	DDA250-C20B	420	2	32.8	130	994	1310	5	204	1.04	1.82	2.28	0.034
A109	AGUSTA A109C	DDA250-C20R	450	2	33.8	139	952	1252	5	210	1.11	1.74	2.17	0.036
A119	AGUSTA A119	PT6B-37	900	1	28.5	193	241	305	6	192	1.70	0.60	0.73	0.048
A139	AGUSTA A139	PT6C-67C	1100	2	60.3	376	753	968	12	412	3.54	1.37	1.67	0.101
ALO2	ALOUETTE II	ARTOUSTE IIC5	402	1	18.2	76	384	498	3	110	0.61	0.82	1.02	0.019
ALO2	ALOUETTE II	ARTOUSTE IIC6	402	1	18.2	76	384	498	3	110	0.61	0.82	1.02	0.019
ALO3	SA316B ALOUETTE III	ARTOUSTE IIIB	563	1	21.4	109	312	401	4	135	0.91	0.70	0.87	0.027
ALO3	SA316B ALOUETTE III	ASTAZOU XIVB	590	1	21.9	115	303	389	4	139	0.97	0.69	0.85	0.029
AS32	SUPER PUMA	MAKILA 1A1	1820	2	77.4	652	540	683	19	491	5.60	0.95	1.14	0.153
AS35	AS 350 B3	ARRIEL 2B	848	1	27.5	179	249	316	6	152	1.30	0.51	0.62	0.037
AS35	AS 350 B3	ARRIEL 2B1	848	1	27.5	179	249	316	6	152	1.30	0.51	0.62	0.037
AS35	AS 350 ECUREUIL	ARRIEL 1B	641	1	23.5	129	294	375	4	133	0.97	0.60	0.74	0.029
AS35	AS 350B ECUREUIL	ARRIEL 1D1	732	1	25.2	150	271	346	5	147	1.15	0.57	0.70	0.033
AS50	AS 550 FENNEC	ARRIEL 1D1	732	1	25.2	150	271	346	5	147	1.15	0.57	0.70	0.033
AS55	AS 355	DDA250-C20F	420	2	32.8	130	994	1310	5	204	1.04	1.82	2.28	0.034
AS55	AS 355 N	ARRIUS 1A	480	2	34.8	149	914	1200	5	216	1.19	1.67	2.08	0.038
AS55	AS 555 FENNEC	ARRIEL 1D1	712	2	43.6	235	736	955	8	277	1.91	1.40	1.73	0.057
AS65	AS 365 C1 DAUPHIN	ARRIEL 1A1	641	2	41.3	209	786	1023	7	261	1.69	1.48	1.83	0.051
AS65	AS 365 C2 DAUPHIN	ARRIEL 1A2	641	2	41.3	209	786	1023	7	261	1.69	1.48	1.83	0.051
AS65	AS 365 N DAUPHIN	ARRIEL 1C	660	2	41.9	216	772	1003	7	265	1.75	1.45	1.80	0.053
AS65	AS 365 N1 DAUPHIN	ARRIEL 1C1	700	2	43.2	231	744	965	8	274	1.87	1.41	1.74	0.056
AS65	AS 365 N3 DAUPHIN	ARRIEL 2C	839	2	47.7	285	667	860	9	309	2.34	1.31	1.60	0.068
B06	BELL 206B	DDA250-C20	400	1	18.2	75	385	499	3	109	0.61	0.82	1.03	0.019
B06	BELL 206B	DDA250-C20B	420	1	18.6	79	373	484	3	101	0.58	0.72	0.90	0.018
B06	BELL 206B	DDA250-C20J	420	1	18.6	79	373	484	3	101	0.58	0.72	0.90	0.018
B06	BELL 206B	DDA250-C20R	450	1	19.2	85	358	463	3	105	0.63	0.70	0.86	0.019
B06	BELL 206B	DDA250-C20R/4	450	1	19.2	85	358	463	3	105	0.63	0.70	0.86	0.019
B06	BELL 206L	DDA250-C20R	450	1	19.2	85	358	463	3	117	0.70	0.77	0.96	0.022
B06	BELL 206L	DDA250-C30	650	1	23.7	131	291	372	4	149	1.10	0.66	0.82	0.032
B06	BELL 206L	DDA250-C30P	650	1	23.7	131	291	372	4	149	1.10	0.66	0.82	0.032
B06T	Bell TWIN RANGER	DDA250-C20R	450	2	33.8	139	952	1252	5	210	1.11	1.74	2.17	0.036
B105	BO 105	DDA250-C20	400	2	32.1	123	1025	1353	5	200	0.99	1.88	2.36	0.033
B105	BO 105	DDA250-C20B	420	2	32.8	130	994	1310	5	204	1.04	1.82	2.28	0.034
B222	BELL 222	DDA250-C40B	715	2	43.7	236	734	952	8	278	1.92	1.40	1.72	0.057
B222	BELL 222	LTS101-750C.1	735	2	44.3	244	722	935	8	283	1.98	1.38	1.70	0.059

					LTO Emissions					One hour emissions				
Aircraft_ ICAO	Aircraft_Name	Engine_Name	Max SHP per engine	Number_of_ Engines	LTO fuel (kg)	LTO NOx (g)	LTO HC (g)	LTO CO (g)	LTO PM non volatile (g)	One hour fuel (kg)	One hour NOx (kg)	One hour HC (kg)	One hour CO (kg)	One hour PM non vol. (kg)
B407	Bell 407	DDA250-C47B	650	1	23.7	131	291	372	4	149	1.10	0.66	0.82	0.032
B412	Bell 412	PT6T-3	1800	2	77.0	644	544	688	19	541	6.14	1.06	1.27	0.168
B430	Bell 430	DDA250-C40B	715	2	43.7	236	734	952	8	278	1.92	1.40	1.72	0.057
BK17	BK117	ARRIEL 1E2	738	2	44.4	245	720	933	8	283	1.99	1.38	1.70	0.059
BK17	BK117 C-2	ARRIEL 1E2	738	2	44.4	245	720	933	8	283	1.99	1.38	1.70	0.059
BK17	BK117B	LTS101-750B.1	727	2	44.1	241	727	942	8	281	1.96	1.39	1.71	0.058
EC20	EC 120	ARRIUS 2F	432	1	18.8	82	367	475	3	114	0.67	0.79	0.98	0.021
EC30	EC 130 B4	ARRIEL 2B1	848	1	27.5	179	249	316	6	183	1.56	0.61	0.74	0.045
EC35	EC 135	ARRIUS 2B1	633	2	41.1	206	792	1031	7	259	1.67	1.49	1.84	0.051
EC35	EC 135	ARRIUS 2B2	633	2	41.1	206	792	1031	7	259	1.67	1.49	1.84	0.051
EC55	EC 155 B	ARRIEL 2C1	839	2	47.7	285	667	860	9	309	2.34	1.31	1.60	0.068
EC55	EC 155 B1	ARRIEL 2C2	944	2	51.0	328	622	800	10	337	2.73	1.26	1.54	0.079
EN48	ENSTROM 480	DDA250-C20W	420	1	18.6	79	373	484	3	112	0.64	0.80	1.00	0.020
EXPL	MD 900	PW206A	621	2	40.7	202	802	1045	7	257	1.64	1.50	1.86	0.050
GAZL	SA341 GAZELLE	ASTAZOU IIIA	644	1	23.5	130	293	374	4	148	1.09	0.67	0.82	0.032
GAZL	SA341 GAZELLE	ASTAZOU IIIN2	644	1	23.5	130	293	374	4	148	1.09	0.67	0.82	0.032
GAZL	SA342 GAZELLE	ASTAZOU XIVG	590	1	21.9	115	303	389	4	139	0.97	0.69	0.85	0.029
GAZL	SA342 GAZELLE	ASTAZOU XIVH	590	1	21.9	115	303	389	4	139	0.97	0.69	0.85	0.029
H500	HUGHES 500	DDA250-C18	317	1	16.4	60	446	582	2	99	0.48	0.96	1.20	0.016
H500	HUGHES 501	DDA250-C20B	420	1	18.6	79	373	484	3	112	0.64	0.80	1.00	0.020
H500	MD 500N	DDA250-C20R	450	1	19.2	85	358	463	3	117	0.70	0.77	0.96	0.022
H53	SIKORSKY CH-53G (S-65)	T 64-GE-7	3925	2	125.4	1690	351	433	41	977	17.27	0.82	0.96	0.388
H53S	SIKORSKY SUPER STALLION	T 64-GE-7	3925	3	188.0	2535	526	649	62	1332	21.99	1.27	1.50	0.523
H60	SIKORSKY BLACK HAWK	T700-GE-700	1622	2	72.8	573	581	737	17	508	5.43	1.11	1.34	0.150
KA27	KA-32A12	TV3-117VMA	2200	2	86.2	815	481	605	23	621	7.90	0.98	1.17	0.211
KMAX	K-1200	T53 17A-1	1500	1	43.4	391	210	261	11	284	3.36	0.51	0.61	0.091
LAMA	SA315B LAMA	ARTOUSTE IIIB	563	1	21.4	109	312	401	4	159	1.08	0.83	1.02	0.032
MD52	MD 520N	DDA250-C20	400	1	18.2	75	385	499	3	109	0.61	0.82	1.03	0.019
MD60	MD 600N	DDA250-C47M	650	1	23.7	131	291	372	4	149	1.10	0.66	0.82	0.032
MI8	MIL MI-8	TV2-117	1500	2	70.0	525	611	778	16	485	4.97	1.15	1.39	0.138
S76	SIKORSKY S76	DDA250-C30S	650	2	41.6	212	779	1013	7	263	1.72	1.46	1.81	0.052
S76	SIKORSKY S76	PT6B-36A	981	2	52.2	343	609	782	11	348	2.87	1.24	1.52	0.082
S76	SIKORSKY S-76 C+	ARRIEL 2S1	856	2	48.2	291	659	850	9	313	2.40	1.30	1.59	0.070
S92	SIKORSKY S92A	GE CT7-8A	2740	2	98.5	1066	424	529	29	735	10.59	0.91	1.08	0.271
UH1	BELL UH-1H	T53 L13	1400	1	41.8	361	218	273	10	271	3.09	0.53	0.63	0.084
UH12	HILLER UH-12A	VO-540-1B	320	1	12.3	26	157	12310	1	82	0.16	0.91	82.33	0.006
B47G	Bell 47G	LYC TVO-435-B1A	270	1	9.9	21	134	9873	1	65	0.13	0.76	64.62	0.005
B47G	Bell 47G-3B	LYC VO-435-A1D	220	1	7.8	16	114	7759	1	50	0.10	0.63	49.94	0.003
EN28	ENSTROM 280C	HIO-360	190	1	6.6	14	102	6591	0	42	0.08	0.56	42.00	0.003
EXEC	ROTORWAY EXEC 90	ROTORWAY RI-162	150	1	5.1	11	87	5118	0	32	0.06	0.46	32.07	0.002
H269	SCHWEIZER 269C	HIO-360	190	1	6.6	14	102	6591	0	42	0.08	0.56	42.00	0.003
HU30	HUGHES 300	HIO-360	190	1	6.6	14	102	6591	0	42	0.08	0.56	42.00	0.003
R22	R22 BETA	HO-360	180	1	6.2	13	98	6214	0	39	0.08	0.53	39.46	0.003
R44	R44 RAVEN	HIO-540	245	1	8.8	18	124	8785	1	57	0.11	0.69	57.00	0.004
SCOR	ROTORWAY SCORPION	ROTORWAY RW 133	133	1	4.5	9	80	4519	0	28	0.06	0.42	28.04	0.002
SYCA	BRISTOL SYCAMORE	ALVIS LEONIDES	550	1	34.8	63	349	34826	3	277	0.55	2.52	276.80	0.019

Helicopter Emissions Table Filtered for Horsepower

Aircraft_IC	Aircraft_Na	Engine_Nai	Max SHP per e	Number_of	SHP correc
UH1	BELL UH-1H	T53 L13	1400	1	1

Estimated SHP @ 100% rotortorque	GI1_Time (	TO_Time (M	AP_Time (M	GI2_Time (	GI1 %Powe	TO %Powe
1400	4	3	5.5	1	15	87

AP % Powe	GI2 %Powe	Mean oper	GI1_SHP pe	TO_SPH pe	AP_SHP pe	GI2_SHP pe	Mean oper	GI1_FF per
46	7	80	210	1218	644	98	1120	0.032092

TO_FF per	AP_FF per	GI2_FF per	Mean oper	GI1_EINOx	TO_EINOx	AP_EINOx	GI2_EINOx	Mean oper
0.07965	0.055654	0.022723	0.075356	4.397678	11.92948	8.308144	2.85311	11.37472

GI1_EIHC (g	TO_EIHC (g	AP_EIHC (g	GI2_EIHC (g	Mean oper	GI1_EICO (g	TO_:EICO (g	AP_EICO (g	GI2_EICO (g
11.85006	1.77477	3.532418	26.99146	1.943074	14.96763	2.126904	4.314725	34.87831

Mean oper	G1I_EIPM (	TO_EIPM (g	AP_EIPM (g	GI2_EIPM (	Mean oper	Mean oper	LTO fuel (kg	LTO NOx (g
2.334449	0.153178	0.322618	0.238089	0.12833	0.310426	1	41.76832	361.3807

LTO HC (g)	LTO CO (g)	LTO PM no	One hour f	One hour N	One hour H	One hour C	One hour PM non vol.
218.3897	272.5703	10.35284	271.2823	3.085759	0.527122	0.633295	0.084213

(kg)

Input for Environmental Work OnRoad Trips

EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Humboldt
Calendar Year: 2019
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for S

Region	CalYr	VehClass	MdlYr
Humboldt	2019	MDV	Aggregated
Humboldt	2019	MDV	Aggregated
Average:			

TREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Speed	Fuel	Population	VMT	Trips	ROG_RUNE	ROG_IDLEX	ROG_STREX
Aggregated	GAS	14866.48	478658.2	89988.59	0.084353	0	0.704748
Aggregated	DSL	215.7205	8745.743	1330.748	0.024867	0	0
					0.05461	0	0.352374

ROG_HOTS	ROG_RUNL	ROG_RESTI	ROG_DIUR	TOG_RUNE	TOG_IDLEX	TOG_STRE	TOG_HOTS	TOG_RUNL
0.361807	1.476583	0.44537	0.510261	0.119589	0	0.771404	0.361807	1.476583
0	0	0	0	0.028309	0	0	0	0
0.180904	0.738292	0.222685	0.255131	0.073949	0	0.385702	0.180904	0.738292

TOG_RESTI	TOG_DIURI	CO_RUNEX	CO_IDLEX	CO_STREX	NOx_RUNE	NOx_IDLEX	NOx_STRE)	CO2_RUNE
0.44537	0.510261	2.605509	0	9.000755	0.50932	0	0.906879	522.0943
0	0	0.308648	0	0	0.141695	0	0	481.0213
0.222685	0.255131	1.457078	0	4.500378	0.325508	0	0.45344	501.5578

CO2_IDLEX	CO2_STRE>	PM10_RUN	PM10_IDLE	PM10_STRI	PM10_PMT	PM10_PMI	PM2_5_RU	PM2_5_IDL
0	119.5667	0.00218	0	0.003631	0.008	0.03675	0.002007	0
0	0	0.01406	0	0	0.008	0.03675	0.013452	0
0	59.78336	0.00812	0	0.001815	0.008	0.03675	0.007729	0

PM2_5_STI	PM2_5_PM	PM2_5_PM	SOx_RUNE	SOx_IDLEX	SOx_STREX
0.003343	0.002	0.01575	0.005256	0	0.001358
0	0.002	0.01575	0.004592	0	0
0.001672	0.002	0.01575	0.004924	0	0.000679

Paved Roads Fugitive Dust Emissions

Paved Roads	100%

				Paved Road Dust Emissions (lb/dy)			
	Vehicle Type	**Trips per Year**	**Miles Per Trip Per Vehicle**	PM10	PM2.5	PM10	PM2.5
Phase II	Worker Pickup / Car	480	20	0.01	0.00	0.00304	0.00075

Paved Road Dust $EF_{DUST} = [(k(sL)^{0.91} \times (W)^{1.02}](1 - P/4N))$

Source: AP-42 Section 13.2.1 (Paved Roads) - http://www.epa.gov/ttnchie1/ap42/ch13/final/c13s0201.pdf

Variable	Value	Description
k (PM10)	0.0022	particle size multiplier for particle size rangeand units of interest (lb/VMT)
k (PM2.5)	0.00054	particle size multiplier for particle size rangeand units of interest (lb/VMT)
sL	0.1	road surface silt loading (g/m^2)
W	2.4	average weight (tons) of pickup truck
W	14.75	haul truck tons
P	60	number of "wet" days with at least 0.254 mm of precipitation during the averaging period (https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca3650)
N	365	number of days in averaging period

Pickup and Worker

EF (PM10)	0.000633889	lb/VMT
EF (PM2.5)	0.000155591	lb/VMT

Haul Truck

EF (PM10)	0.004039854	lb/VMT
EF (PM2.5)	0.000991601	lb/VMT

PM2_5_STI	PM2_5_PM	PM2_5_PM	SOx_RUNE	SOx_IDLEX	SOx_STREX
0.003343	0.002	0.01575	0.005256	0	0.001358
0	0.002	0.01575	0.004592	0	0
0.001672	0.002	0.01575	0.004924	0	0.000679

CalEEMod Output Files

Humboldt Wind Energy - Roadway Improvements & Pads

Humboldt County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	20,120.00	1000sqft	461.89	20,120,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Humboldt Wind Energy - Roadway Improvements & Pads - Humboldt County, Winter

Project Characteristics -

Land Use -

Construction Phase - Activity duration per Table 2-5.

Off-road Equipment - Construction equipment per Table 2-5.

Trips and VMT - Trips per data in Tables 2-2 and 2-4.

Grading - Balanced Site.

Construction Off-road Equipment Mitigation - Mitigation includes Tier 4 equipment and watering exposed areas twice daily.

Vehicle Trips - Modeling is for construction only. Operations modeled separately.

Consumer Products - Modeling is for construction only. Operations modeled separately.

Area Coating - Modeling is for construction only. Operations modeled separately.

Landscape Equipment - Modeling is for construction only. Operations modeled separately.

Energy Use - Modeling is for construction only. Operations modeled separately.

Water And Wastewater - Modeling is for construction only. Operations modeled separately.

Solid Waste - Modeling is for construction only. Operations modeled separately.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	10060000	0
tblAreaCoating	Area_Nonresidential_Interior	30180000	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	775.00	140.00
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	NT24E	1.85	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	T24E	0.62	0.00
tblEnergyUse	T24NG	3.20	0.00
tblGrading	AcresOfGrading	70.00	350.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblSolidWaste	SolidWasteGenerationRate	24,948.80	0.00
tblTripsAndVMT	VendorTripNumber	0.00	74.00
tblTripsAndVMT	WorkerTripNumber	53.00	48.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	4,652,750,000.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	9.1013	98.2854	62.5168	0.1268	9.5673	4.3924	13.9597	3.8448	4.0449	7.8897	0.0000	12,660.8763	12,660.8763	3.3661	0.0000	12,745.0289
Maximum	**9.1013**	**98.2854**	**62.5168**	**0.1268**	**9.5673**	**4.3924**	**13.9597**	**3.8448**	**4.0449**	**7.8897**	**0.0000**	**12,660.8763**	**12,660.8763**	**3.3661**	**0.0000**	**12,745.0289**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	2.2802	16.9694	71.9648	0.1268	4.7970	0.2784	5.0753	1.8668	0.2734	2.1402	0.0000	12,660.8763	12,660.8763	3.3661	0.0000	12,745.0289
Maximum	**2.2802**	**16.9694**	**71.9648**	**0.1268**	**4.7970**	**0.2784**	**5.0753**	**1.8668**	**0.2734**	**2.1402**	**0.0000**	**12,660.8763**	**12,660.8763**	**3.3661**	**0.0000**	**12,745.0289**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**74.95**	**82.73**	**-15.11**	**0.00**	**49.86**	**93.66**	**63.64**	**51.45**	**93.24**	**72.87**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1926	0.0189	2.0623	1.5000e-004		7.3800e-003	7.3800e-003		7.3800e-003	7.3800e-003		4.4033	4.4033	0.0117		4.6957
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.1926**	**0.0189**	**2.0623**	**1.5000e-004**	**0.0000**	**7.3800e-003**	**7.3800e-003**	**0.0000**	**7.3800e-003**	**7.3800e-003**		**4.4033**	**4.4033**	**0.0117**	**0.0000**	**4.6957**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1926	0.0189	2.0623	1.5000e-004		7.3800e-003	7.3800e-003		7.3800e-003	7.3800e-003		4.4033	4.4033	0.0117		4.6957
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.1926**	**0.0189**	**2.0623**	**1.5000e-004**	**0.0000**	**7.3800e-003**	**7.3800e-003**	**0.0000**	**7.3800e-003**	**7.3800e-003**		**4.4033**	**4.4033**	**0.0117**	**0.0000**	**4.6957**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	6/1/2019	12/13/2019	5	140	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 350

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Humboldt Wind Energy - Roadway Improvements & Pads - Humboldt County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	8.00	158	0.38
Grading	Forklifts	1	8.00	89	0.20
Grading	Graders	1	8.00	187	0.41
Grading	Off-Highway Trucks	2	6.00	402	0.38
Grading	Other Construction Equipment	2	4.00	172	0.42
Grading	Other Construction Equipment	5	8.00	172	0.42
Grading	Other Construction Equipment	1	6.00	172	0.42
Grading	Rollers	2	4.00	80	0.38
Grading	Rollers	2	6.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	21	48.00	74.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	8.0813	86.7772	55.6308	0.1024		4.2821	4.2821		3.9395	3.9395		10,142.1522	10,142.1522	3.2089		10,222.3739
Total	**8.0813**	**86.7772**	**55.6308**	**0.1024**	**8.6733**	**4.2821**	**12.9554**	**3.5965**	**3.9395**	**7.5360**		**10,142.1522**	**10,142.1522**	**3.2089**		**10,222.3739**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5576	11.0746	3.5760	0.0204	0.4997	0.1063	0.6060	0.1437	0.1017	0.2454		2,132.9110	2,132.9110	0.1263		2,136.0689
Worker	0.4624	0.4336	3.3100	3.9100e-003	0.3943	4.0000e-003	0.3983	0.1046	3.7000e-003	0.1083		385.8132	385.8132	0.0309		386.5860
Total	**1.0200**	**11.5082**	**6.8860**	**0.0243**	**0.8940**	**0.1103**	**1.0043**	**0.2483**	**0.1054**	**0.3537**		**2,518.7241**	**2,518.7241**	**0.1572**		**2,522.6550**

3.2 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	1.2603	5.4612	65.0788	0.1024		0.1680	0.1680		0.1680	0.1680	0.0000	10,142.1522	10,142.1522	3.2089		10,222.3739
Total	**1.2603**	**5.4612**	**65.0788**	**0.1024**	**3.9030**	**0.1680**	**4.0710**	**1.6184**	**0.1680**	**1.7865**	**0.0000**	**10,142.1522**	**10,142.1522**	**3.2089**		**10,222.3739**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5576	11.0746	3.5760	0.0204	0.4997	0.1063	0.6060	0.1437	0.1017	0.2454		2,132.9110	2,132.9110	0.1263		2,136.0689
Worker	0.4624	0.4336	3.3100	3.9100e-003	0.3943	4.0000e-003	0.3983	0.1046	3.7000e-003	0.1083		385.8132	385.8132	0.0309		386.5860
Total	**1.0200**	**11.5082**	**6.8860**	**0.0243**	**0.8940**	**0.1103**	**1.0043**	**0.2483**	**0.1054**	**0.3537**		**2,518.7241**	**2,518.7241**	**0.1572**		**2,522.6550**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.479770	0.048374	0.208987	0.137651	0.044565	0.007238	0.014792	0.045519	0.003292	0.001618	0.005746	0.001515	0.000933

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1926	0.0189	2.0623	1.5000e-004		7.3800e-003	7.3800e-003		7.3800e-003	7.3800e-003		4.4033	4.4033	0.0117		4.6957
Unmitigated	0.1926	0.0189	2.0623	1.5000e-004		7.3800e-003	7.3800e-003		7.3800e-003	7.3800e-003		4.4033	4.4033	0.0117		4.6957

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.1926	0.0189	2.0623	1.5000e-004		7.3800e-003	7.3800e-003		7.3800e-003	7.3800e-003		4.4033	4.4033	0.0117		4.6957
Total	**0.1926**	**0.0189**	**2.0623**	**1.5000e-004**		**7.3800e-003**	**7.3800e-003**		**7.3800e-003**	**7.3800e-003**		**4.4033**	**4.4033**	**0.0117**		**4.6957**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.1926	0.0189	2.0623	1.5000e-004		7.3800e-003	7.3800e-003		7.3800e-003	7.3800e-003		4.4033	4.4033	0.0117		4.6957
Total	**0.1926**	**0.0189**	**2.0623**	**1.5000e-004**		**7.3800e-003**	**7.3800e-003**		**7.3800e-003**	**7.3800e-003**		**4.4033**	**4.4033**	**0.0117**		**4.6957**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Humboldt Wind Energy - Roadway Improvements & Pads

Humboldt County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	20,120.00	1000sqft	461.89	20,120,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Humboldt Wind Energy - Roadway Improvements & Pads - Humboldt County, Summer

Project Characteristics -

Land Use -

Construction Phase - Activity duration per Table 2-5.

Off-road Equipment - Construction equipment per Table 2-5.

Trips and VMT - Trips per data in Tables 2-2 and 2-4.

Grading - Balanced Site.

Construction Off-road Equipment Mitigation - Mitigation includes Tier 4 equipment and watering exposed areas twice daily.

Vehicle Trips - Modeling is for construction only. Operations modeled separately.

Consumer Products - Modeling is for construction only. Operations modeled separately.

Area Coating - Modeling is for construction only. Operations modeled separately.

Landscape Equipment - Modeling is for construction only. Operations modeled separately.

Energy Use - Modeling is for construction only. Operations modeled separately.

Water And Wastewater - Modeling is for construction only. Operations modeled separately.

Solid Waste - Modeling is for construction only. Operations modeled separately.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	10060000	0
tblAreaCoating	Area_Nonresidential_Interior	30180000	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	775.00	140.00
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	NT24E	1.85	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	T24E	0.62	0.00
tblEnergyUse	T24NG	3.20	0.00
tblGrading	AcresOfGrading	70.00	350.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblSolidWaste	SolidWasteGenerationRate	24,948.80	0.00
tblTripsAndVMT	VendorTripNumber	0.00	74.00
tblTripsAndVMT	WorkerTripNumber	53.00	48.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	4,652,750,000.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	8.9903	98.1045	61.8249	0.1273	9.5673	4.3899	13.9572	3.8448	4.0426	7.8874	0.0000	12,718.6429	12,718.6429	3.3537	0.0000	12,802.4848
Maximum	**8.9903**	**98.1045**	**61.8249**	**0.1273**	**9.5673**	**4.3899**	**13.9572**	**3.8448**	**4.0426**	**7.8874**	**0.0000**	**12,718.6429**	**12,718.6429**	**3.3537**	**0.0000**	**12,802.4848**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	2.1692	16.7885	71.2729	0.1273	4.7970	0.2759	5.0729	1.8668	0.2711	2.1379	0.0000	12,718.6429	12,718.6429	3.3537	0.0000	12,802.4848
Maximum	**2.1692**	**16.7885**	**71.2729**	**0.1273**	**4.7970**	**0.2759**	**5.0729**	**1.8668**	**0.2711**	**2.1379**	**0.0000**	**12,718.6429**	**12,718.6429**	**3.3537**	**0.0000**	**12,802.4848**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**75.87**	**82.89**	**-15.28**	**0.00**	**49.86**	**93.71**	**63.65**	**51.45**	**93.29**	**72.90**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1926	0.0189	2.0623	1.5000e-004		7.3800e-003	7.3800e-003		7.3800e-003	7.3800e-003		4.4033	4.4033	0.0117		4.6957
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.1926**	**0.0189**	**2.0623**	**1.5000e-004**	**0.0000**	**7.3800e-003**	**7.3800e-003**	**0.0000**	**7.3800e-003**	**7.3800e-003**		**4.4033**	**4.4033**	**0.0117**	**0.0000**	**4.6957**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1926	0.0189	2.0623	1.5000e-004		7.3800e-003	7.3800e-003		7.3800e-003	7.3800e-003		4.4033	4.4033	0.0117		4.6957
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.1926**	**0.0189**	**2.0623**	**1.5000e-004**	**0.0000**	**7.3800e-003**	**7.3800e-003**	**0.0000**	**7.3800e-003**	**7.3800e-003**		**4.4033**	**4.4033**	**0.0117**	**0.0000**	**4.6957**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	6/1/2019	12/13/2019	5	140	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 350

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	8.00	158	0.38
Grading	Forklifts	1	8.00	89	0.20
Grading	Graders	1	8.00	187	0.41
Grading	Off-Highway Trucks	2	6.00	402	0.38
Grading	Other Construction Equipment	2	4.00	172	0.42
Grading	Other Construction Equipment	5	8.00	172	0.42
Grading	Other Construction Equipment	1	6.00	172	0.42
Grading	Rollers	2	4.00	80	0.38
Grading	Rollers	2	6.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	21	48.00	74.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	8.0813	86.7772	55.6308	0.1024		4.2821	4.2821		3.9395	3.9395		10,142.1522	10,142.1522	3.2089		10,222.3739
Total	**8.0813**	**86.7772**	**55.6308**	**0.1024**	**8.6733**	**4.2821**	**12.9554**	**3.5965**	**3.9395**	**7.5360**		**10,142.1522**	**10,142.1522**	**3.2089**		**10,222.3739**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5259	10.9675	3.1414	0.0210	0.4997	0.1039	0.6035	0.1437	0.0994	0.2431		2,189.4812	2,189.4812	0.1149		2,192.3528
Worker	0.3830	0.3598	3.0527	3.9100e-003	0.3943	4.0000e-003	0.3983	0.1046	3.7000e-003	0.1083		387.0096	387.0096	0.0299		387.7582
Total	**0.9090**	**11.3274**	**6.1941**	**0.0249**	**0.8940**	**0.1079**	**1.0018**	**0.2483**	**0.1031**	**0.3514**		**2,576.4907**	**2,576.4907**	**0.1448**		**2,580.1109**

3.2 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.9030	0.0000	3.9030	1.6184	0.0000	1.6184			0.0000			0.0000
Off-Road	1.2603	5.4612	65.0788	0.1024		0.1680	0.1680		0.1680	0.1680	0.0000	10,142.1522	10,142.1522	3.2089		10,222.3739
Total	**1.2603**	**5.4612**	**65.0788**	**0.1024**	**3.9030**	**0.1680**	**4.0710**	**1.6184**	**0.1680**	**1.7865**	**0.0000**	**10,142.1522**	**10,142.1522**	**3.2089**		**10,222.3739**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5259	10.9675	3.1414	0.0210	0.4997	0.1039	0.6035	0.1437	0.0994	0.2431		2,189.4812	2,189.4812	0.1149		2,192.3528
Worker	0.3830	0.3598	3.0527	3.9100e-003	0.3943	4.0000e-003	0.3983	0.1046	3.7000e-003	0.1083		387.0096	387.0096	0.0299		387.7582
Total	**0.9090**	**11.3274**	**6.1941**	**0.0249**	**0.8940**	**0.1079**	**1.0018**	**0.2483**	**0.1031**	**0.3514**		**2,576.4907**	**2,576.4907**	**0.1448**		**2,580.1109**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.479770	0.048374	0.208987	0.137651	0.044565	0.007238	0.014792	0.045519	0.003292	0.001618	0.005746	0.001515	0.000933

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1926	0.0189	2.0623	1.5000e-004		7.3800e-003	7.3800e-003		7.3800e-003	7.3800e-003		4.4033	4.4033	0.0117		4.6957
Unmitigated	0.1926	0.0189	2.0623	1.5000e-004		7.3800e-003	7.3800e-003		7.3800e-003	7.3800e-003		4.4033	4.4033	0.0117		4.6957

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.1926	0.0189	2.0623	1.5000e-004		7.3800e-003	7.3800e-003		7.3800e-003	7.3800e-003		4.4033	4.4033	0.0117		4.6957
Total	**0.1926**	**0.0189**	**2.0623**	**1.5000e-004**		**7.3800e-003**	**7.3800e-003**		**7.3800e-003**	**7.3800e-003**		**4.4033**	**4.4033**	**0.0117**		**4.6957**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.1926	0.0189	2.0623	1.5000e-004		7.3800e-003	7.3800e-003		7.3800e-003	7.3800e-003		4.4033	4.4033	0.0117		4.6957
Total	**0.1926**	**0.0189**	**2.0623**	**1.5000e-004**		**7.3800e-003**	**7.3800e-003**		**7.3800e-003**	**7.3800e-003**		**4.4033**	**4.4033**	**0.0117**		**4.6957**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Humboldt Wind Energy - Roadway Improvements & Pads

Humboldt County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	20,120.00	1000sqft	461.89	20,120,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Humboldt Wind Energy - Roadway Improvements & Pads - Humboldt County, Annual

Project Characteristics -

Land Use -

Construction Phase - Activity duration per Table 2-5.

Off-road Equipment - Construction equipment per Table 2-5.

Trips and VMT - Trips per data in Tables 2-2 and 2-4.

Grading - Balanced Site.

Construction Off-road Equipment Mitigation - Mitigation includes Tier 4 equipment and watering exposed areas twice daily.

Vehicle Trips - Modeling is for construction only. Operations modeled separately.

Consumer Products - Modeling is for construction only. Operations modeled separately.

Area Coating - Modeling is for construction only. Operations modeled separately.

Landscape Equipment - Modeling is for construction only. Operations modeled separately.

Energy Use - Modeling is for construction only. Operations modeled separately.

Water And Wastewater - Modeling is for construction only. Operations modeled separately.

Solid Waste - Modeling is for construction only. Operations modeled separately.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	10060000	0
tblAreaCoating	Area_Nonresidential_Interior	30180000	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	775.00	140.00
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	NT24E	1.85	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	T24E	0.62	0.00
tblEnergyUse	T24NG	3.20	0.00
tblGrading	AcresOfGrading	70.00	350.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblSolidWaste	SolidWasteGenerationRate	24,948.80	0.00
tblTripsAndVMT	VendorTripNumber	0.00	74.00
tblTripsAndVMT	WorkerTripNumber	53.00	48.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	4,652,750,000.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.6325	6.8700	4.3494	8.8900e-003	0.6663	0.3074	0.9736	0.2683	0.2831	0.5513	0.0000	806.1737	806.1737	0.2133	0.0000	811.5065
Maximum	**0.6325**	**6.8700**	**4.3494**	**8.8900e-003**	**0.6663**	**0.3074**	**0.9736**	**0.2683**	**0.2831**	**0.5513**	**0.0000**	**806.1737**	**806.1737**	**0.2133**	**0.0000**	**811.5065**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1550	1.1779	5.0107	8.8900e-003	0.3323	0.0194	0.3517	0.1298	0.0191	0.1489	0.0000	806.1730	806.1730	0.2133	0.0000	811.5058
Maximum	**0.1550**	**1.1779**	**5.0107**	**8.8900e-003**	**0.3323**	**0.0194**	**0.3517**	**0.1298**	**0.0191**	**0.1489**	**0.0000**	**806.1730**	**806.1730**	**0.2133**	**0.0000**	**811.5058**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**75.49**	**82.85**	**-15.21**	**0.00**	**50.12**	**93.69**	**63.88**	**51.61**	**93.27**	**73.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	6-1-2019	8-31-2019	3.5188	0.6229
2	9-1-2019	9-30-2019	1.1474	0.2031
		Highest	3.5188	0.6229

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	6/1/2019	12/13/2019	5	140	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 350

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	8.00	158	0.38
Grading	Forklifts	1	8.00	89	0.20
Grading	Graders	1	8.00	187	0.41
Grading	Off-Highway Trucks	2	6.00	402	0.38
Grading	Other Construction Equipment	2	4.00	172	0.42
Grading	Other Construction Equipment	5	8.00	172	0.42
Grading	Other Construction Equipment	1	6.00	172	0.42
Grading	Rollers	2	4.00	80	0.38
Grading	Rollers	2	6.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	21	48.00	74.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6071	0.0000	0.6071	0.2518	0.0000	0.2518	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.5657	6.0744	3.8942	7.1700e-003		0.2997	0.2997		0.2758	0.2758	0.0000	644.0564	644.0564	0.2038	0.0000	649.1507
Total	**0.5657**	**6.0744**	**3.8942**	**7.1700e-003**	**0.6071**	**0.2997**	**0.9069**	**0.2518**	**0.2758**	**0.5275**	**0.0000**	**644.0564**	**644.0564**	**0.2038**	**0.0000**	**649.1507**

3.2 Grading - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0378	0.7683	0.2333	1.4500e-003	0.0332	7.3400e-003	0.0406	9.6300e-003	7.0200e-003	0.0167	0.0000	137.5274	137.5274	7.6100e-003	0.0000	137.7176
Worker	0.0291	0.0273	0.2220	2.7000e-004	0.0259	2.8000e-004	0.0262	6.9100e-003	2.6000e-004	7.1600e-003	0.0000	24.5900	24.5900	1.9300e-003	0.0000	24.6382
Total	**0.0668**	**0.7956**	**0.4552**	**1.7200e-003**	**0.0591**	**7.6200e-003**	**0.0667**	**0.0165**	**7.2800e-003**	**0.0238**	**0.0000**	**162.1173**	**162.1173**	**9.5400e-003**	**0.0000**	**162.3558**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2732	0.0000	0.2732	0.1133	0.0000	0.1133	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0882	0.3823	4.5555	7.1700e-003		0.0118	0.0118		0.0118	0.0118	0.0000	644.0556	644.0556	0.2038	0.0000	649.1499
Total	**0.0882**	**0.3823**	**4.5555**	**7.1700e-003**	**0.2732**	**0.0118**	**0.2850**	**0.1133**	**0.0118**	**0.1251**	**0.0000**	**644.0556**	**644.0556**	**0.2038**	**0.0000**	**649.1499**

3.2 Grading - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0378	0.7683	0.2333	1.4500e-003	0.0332	7.3400e-003	0.0406	9.6300e-003	7.0200e-003	0.0167	0.0000	137.5274	137.5274	7.6100e-003	0.0000	137.7176
Worker	0.0291	0.0273	0.2220	2.7000e-004	0.0259	2.8000e-004	0.0262	6.9100e-003	2.6000e-004	7.1600e-003	0.0000	24.5900	24.5900	1.9300e-003	0.0000	24.6382
Total	**0.0668**	**0.7956**	**0.4552**	**1.7200e-003**	**0.0591**	**7.6200e-003**	**0.0667**	**0.0165**	**7.2800e-003**	**0.0238**	**0.0000**	**162.1173**	**162.1173**	**9.5400e-003**	**0.0000**	**162.3558**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.479770	0.048374	0.208987	0.137651	0.044565	0.007238	0.014792	0.045519	0.003292	0.001618	0.005746	0.001515	0.000933

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Humboldt Wind Energy - Foundations and Turbines

Humboldt County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	10,454.40	1000sqft	240.00	10,454,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Humboldt Wind Energy - Foundations and Turbines - Humboldt County, Winter

Project Characteristics -

Land Use - 4 acres per Turbine.

Construction Phase - Activity duration per Table 2.0-5 of the Project Description.

Off-road Equipment - Construction equipment per Table 2.0-5 of Project Description.

Off-road Equipment - Construction equipment per Table 2.0-5 of Project Description.

Off-road Equipment - Construction equipment per Table 2.0-5 of Project Description.

Trips and VMT - Trips based on data in Tables 2-2 and 2-4 of Project Description.

Grading - Balanced site.

Vehicle Trips - Modeling for construction only. Operations modeled separately.

Consumer Products - Modeling for construction only. Operations modeled separately.

Area Coating - Modeling for construction only. Operations modeled separately.

Landscape Equipment - Modeling for construction only. Operations modeled separately.

Energy Use - Modeling for construction only. Operations modeled separately.

Water And Wastewater - Modeling for construction only. Operations modeled separately.

Solid Waste - Modeling for construction only. Operations modeled separately.

Construction Off-road Equipment Mitigation - Construction mitigation - Tier 4 equipment and water exposed areas 2x/day (55% PM10 and PM2.5 reduction)

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	5227200	0
tblAreaCoating	Area_Nonresidential_Interior	15681600	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	4,650.00	65.00
tblConstructionPhase	NumDays	465.00	60.00
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	NT24E	1.85	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	T24E	0.62	0.00
tblEnergyUse	T24NG	3.20	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00

tblOffRoadEquipment	UsageHours	8.00	6.00
tblSolidWaste	SolidWasteGenerationRate	12,963.46	0.00
tblTripsAndVMT	VendorTripNumber	0.00	50.00
tblTripsAndVMT	VendorTripNumber	1,713.00	58.00
tblTripsAndVMT	WorkerTripNumber	65.00	62.00
tblTripsAndVMT	WorkerTripNumber	4,391.00	122.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	2,417,580,000.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	11.4227	112.6595	79.8184	0.1864	8.6605	4.3629	13.0234	3.9639	4.0177	7.9816	0.0000	18,302.7769	18,302.7769	4.7165	0.0000	18,420.6889
Maximum	**11.4227**	**112.6595**	**79.8184**	**0.1864**	**8.6605**	**4.3629**	**13.0234**	**3.9639**	**4.0177**	**7.9816**	**0.0000**	**18,302.7769**	**18,302.7769**	**4.7165**	**0.0000**	**18,420.6889**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	4.1703	27.8805	95.9989	0.1864	5.1297	0.3415	5.4711	2.1196	0.3362	2.4559	0.0000	18,302.7769	18,302.7769	4.7165	0.0000	18,420.6889
Maximum	**4.1703**	**27.8805**	**95.9989**	**0.1864**	**5.1297**	**0.3415**	**5.4711**	**2.1196**	**0.3362**	**2.4559**	**0.0000**	**18,302.7769**	**18,302.7769**	**4.7165**	**0.0000**	**18,420.6889**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**63.49**	**75.25**	**-20.27**	**0.00**	**40.77**	**92.17**	**57.99**	**46.53**	**91.63**	**69.23**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1001	9.8300e-003	1.0716	8.0000e-005		3.8300e-003	3.8300e-003		3.8300e-003	3.8300e-003		2.2880	2.2880	6.0800e-003		2.4399
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.1001**	**9.8300e-003**	**1.0716**	**8.0000e-005**	**0.0000**	**3.8300e-003**	**3.8300e-003**	**0.0000**	**3.8300e-003**	**3.8300e-003**		**2.2880**	**2.2880**	**6.0800e-003**	**0.0000**	**2.4399**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1001	9.8300e-003	1.0716	8.0000e-005		3.8300e-003	3.8300e-003		3.8300e-003	3.8300e-003		2.2880	2.2880	6.0800e-003		2.4399
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.1001**	**9.8300e-003**	**1.0716**	**8.0000e-005**	**0.0000**	**3.8300e-003**	**3.8300e-003**	**0.0000**	**3.8300e-003**	**3.8300e-003**		**2.2880**	**2.2880**	**6.0800e-003**	**0.0000**	**2.4399**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Foundations	Grading	3/1/2020	5/22/2020	5	60	
2	Turbines	Building Construction	3/1/2020	5/29/2020	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Foundations	Cranes	1	4.00	231	0.29
Foundations	Excavators	2	8.00	158	0.38
Foundations	Excavators	2	6.00	158	0.38
Foundations	Forklifts	1	2.00	89	0.20
Foundations	Graders	1	6.00	187	0.41
Foundations	Off-Highway Trucks	5	6.00	402	0.38
Foundations	Other Construction Equipment	4	4.00	172	0.42
Foundations	Other Construction Equipment	3	2.00	172	0.42
Foundations	Plate Compactors	2	2.00	8	0.43
Foundations	Rollers	3	4.00	80	0.38
Foundations	Rubber Tired Dozers	1	8.00	247	0.40
Foundations	Rubber Tired Loaders	1	8.00	203	0.36
Turbines	Aerial Lifts	5	8.00	63	0.31
Turbines	Cranes	4	6.00	231	0.29
Turbines	Forklifts	3	8.00	89	0.20

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Foundations	26	62.00	50.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Turbines	12	122.00	58.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Foundations - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4198	0.0000	6.4198	3.3532	0.0000	3.3532			0.0000			0.0000
Off-Road	7.1081	73.3155	48.4868	0.1118		3.2253	3.2253		2.9677	2.9677		10,821.2415	10,821.2415	3.4960		10,908.6421
Total	**7.1081**	**73.3155**	**48.4868**	**0.1118**	**6.4198**	**3.2253**	**9.6451**	**3.3532**	**2.9677**	**6.3209**		**10,821.2415**	**10,821.2415**	**3.4960**		**10,908.6421**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2969	6.7337	2.0479	0.0138	0.3376	0.0438	0.3814	0.0971	0.0419	0.1390		1,438.0244	1,438.0244	0.0766		1,439.9383
Worker	0.5672	0.5101	3.8918	4.9100e-003	0.5093	4.9100e-003	0.5142	0.1351	4.5400e-003	0.1396		485.8381	485.8381	0.0358		486.7338
Total	**0.8641**	**7.2438**	**5.9398**	**0.0187**	**0.8469**	**0.0487**	**0.8956**	**0.2322**	**0.0464**	**0.2786**		**1,923.8625**	**1,923.8625**	**0.1124**		**1,926.6721**

3.2 Foundations - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8889	0.0000	2.8889	1.5089	0.0000	1.5089			0.0000			0.0000
Off-Road	1.3700	5.9364	62.3705	0.1118		0.1827	0.1827		0.1827	0.1827	0.0000	10,821.2415	10,821.2415	3.4960		10,908.6421
Total	**1.3700**	**5.9364**	**62.3705**	**0.1118**	**2.8889**	**0.1827**	**3.0716**	**1.5089**	**0.1827**	**1.6916**	**0.0000**	**10,821.2415**	**10,821.2415**	**3.4960**		**10,908.6421**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2969	6.7337	2.0479	0.0138	0.3376	0.0438	0.3814	0.0971	0.0419	0.1390		1,438.0244	1,438.0244	0.0766		1,439.9383
Worker	0.5672	0.5101	3.8918	4.9100e-003	0.5093	4.9100e-003	0.5142	0.1351	4.5400e-003	0.1396		485.8381	485.8381	0.0358		486.7338
Total	**0.8641**	**7.2438**	**5.9398**	**0.0187**	**0.8469**	**0.0487**	**0.8956**	**0.2322**	**0.0464**	**0.2786**		**1,923.8625**	**1,923.8625**	**0.1124**		**1,926.6721**

3.3 Turbines - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9902	23.2853	15.3581	0.0303		1.0284	1.0284		0.9461	0.9461		2,933.5606	2,933.5606	0.9488		2,957.2800
Total	**1.9902**	**23.2853**	**15.3581**	**0.0303**		**1.0284**	**1.0284**		**0.9461**	**0.9461**		**2,933.5606**	**2,933.5606**	**0.9488**		**2,957.2800**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3444	7.8111	2.3756	0.0160	0.3916	0.0508	0.4424	0.1127	0.0486	0.1612		1,668.1083	1,668.1083	0.0888		1,670.3284
Worker	1.1160	1.0038	7.6581	9.6700e-003	1.0022	9.6700e-003	1.0119	0.2658	8.9300e-003	0.2748		956.0040	956.0040	0.0705		957.7664
Total	**1.4604**	**8.8149**	**10.0337**	**0.0256**	**1.3938**	**0.0604**	**1.4543**	**0.3785**	**0.0575**	**0.4360**		**2,624.1123**	**2,624.1123**	**0.1593**		**2,628.0948**

3.3 Turbines - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4759	5.8854	17.6550	0.0303		0.0497	0.0497		0.0497	0.0497	0.0000	2,933.5606	2,933.5606	0.9488		2,957.2800
Total	**0.4759**	**5.8854**	**17.6550**	**0.0303**		**0.0497**	**0.0497**		**0.0497**	**0.0497**	**0.0000**	**2,933.5606**	**2,933.5606**	**0.9488**		**2,957.2800**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3444	7.8111	2.3756	0.0160	0.3916	0.0508	0.4424	0.1127	0.0486	0.1612		1,668.1083	1,668.1083	0.0888		1,670.3284
Worker	1.1160	1.0038	7.6581	9.6700e-003	1.0022	9.6700e-003	1.0119	0.2658	8.9300e-003	0.2748		956.0040	956.0040	0.0705		957.7664
Total	**1.4604**	**8.8149**	**10.0337**	**0.0256**	**1.3938**	**0.0604**	**1.4543**	**0.3785**	**0.0575**	**0.4360**		**2,624.1123**	**2,624.1123**	**0.1593**		**2,628.0948**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.479770	0.048374	0.208987	0.137651	0.044565	0.007238	0.014792	0.045519	0.003292	0.001618	0.005746	0.001515	0.000933

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1001	9.8300e-003	1.0716	8.0000e-005		3.8300e-003	3.8300e-003		3.8300e-003	3.8300e-003		2.2880	2.2880	6.0800e-003		2.4399
Unmitigated	0.1001	9.8300e-003	1.0716	8.0000e-005		3.8300e-003	3.8300e-003		3.8300e-003	3.8300e-003		2.2880	2.2880	6.0800e-003		2.4399

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.1001	9.8300e-003	1.0716	8.0000e-005		3.8300e-003	3.8300e-003		3.8300e-003	3.8300e-003		2.2880	2.2880	6.0800e-003		2.4399
Total	**0.1001**	**9.8300e-003**	**1.0716**	**8.0000e-005**		**3.8300e-003**	**3.8300e-003**		**3.8300e-003**	**3.8300e-003**		**2.2880**	**2.2880**	**6.0800e-003**		**2.4399**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.1001	9.8300e-003	1.0716	8.0000e-005		3.8300e-003	3.8300e-003		3.8300e-003	3.8300e-003		2.2880	2.2880	6.0800e-003		2.4399
Total	**0.1001**	**9.8300e-003**	**1.0716**	**8.0000e-005**		**3.8300e-003**	**3.8300e-003**		**3.8300e-003**	**3.8300e-003**		**2.2880**	**2.2880**	**6.0800e-003**		**2.4399**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Humboldt Wind Energy - Foundations and Turbines

Humboldt County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	10,454.40	1000sqft	240.00	10,454,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Humboldt Wind Energy - Foundations and Turbines - Humboldt County, Summer

Project Characteristics -

Land Use - 4 acres per Turbine.

Construction Phase - Activity duration per Table 2.0-5 of the Project Description.

Off-road Equipment - Construction equipment per Table 2.0-5 of Project Description.

Off-road Equipment - Construction equipment per Table 2.0-5 of Project Description.

Off-road Equipment - Construction equipment per Table 2.0-5 of Project Description.

Trips and VMT - Trips based on data in Tables 2-2 and 2-4 of Project Description.

Grading - Balanced site.

Vehicle Trips - Modeling for construction only. Operations modeled separately.

Consumer Products - Modeling for construction only. Operations modeled separately.

Area Coating - Modeling for construction only. Operations modeled separately.

Landscape Equipment - Modeling for construction only. Operations modeled separately.

Energy Use - Modeling for construction only. Operations modeled separately.

Water And Wastewater - Modeling for construction only. Operations modeled separately.

Solid Waste - Modeling for construction only. Operations modeled separately.

Construction Off-road Equipment Mitigation - Construction mitigation - Tier 4 equipment and water exposed areas 2x/day (55% PM10 and PM2.5 reduction)

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	5227200	0
tblAreaCoating	Area_Nonresidential_Interior	15681600	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

Humboldt Wind Energy - Foundations and Turbines - Humboldt County, Summer

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	4,650.00	65.00
tblConstructionPhase	NumDays	465.00	60.00
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	NT24E	1.85	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	T24E	0.62	0.00
tblEnergyUse	T24NG	3.20	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00

tblOffRoadEquipment	UsageHours	8.00	6.00
tblSolidWaste	SolidWasteGenerationRate	12,963.46	0.00
tblTripsAndVMT	VendorTripNumber	0.00	50.00
tblTripsAndVMT	VendorTripNumber	1,713.00	58.00
tblTripsAndVMT	WorkerTripNumber	65.00	62.00
tblTripsAndVMT	WorkerTripNumber	4,391.00	122.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	2,417,580,000.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	11.0907	112.2933	78.3907	0.1873	8.6605	4.3603	13.0209	3.9639	4.0153	7.9792	0.0000	18,392.5271	18,392.5271	4.6980	0.0000	18,509.9767
Maximum	**11.0907**	**112.2933**	**78.3907**	**0.1873**	**8.6605**	**4.3603**	**13.0209**	**3.9639**	**4.0153**	**7.9792**	**0.0000**	**18,392.5271**	**18,392.5271**	**4.6980**	**0.0000**	**18,509.9767**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.8382	27.5144	94.5712	0.1873	5.1297	0.3389	5.4686	2.1196	0.3338	2.4534	0.0000	18,392.5271	18,392.5271	4.6980	0.0000	18,509.9767
Maximum	**3.8382**	**27.5144**	**94.5712**	**0.1873**	**5.1297**	**0.3389**	**5.4686**	**2.1196**	**0.3338**	**2.4534**	**0.0000**	**18,392.5271**	**18,392.5271**	**4.6980**	**0.0000**	**18,509.9767**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**65.39**	**75.50**	**-20.64**	**0.00**	**40.77**	**92.23**	**58.00**	**46.53**	**91.69**	**69.25**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1001	9.8300e-003	1.0716	8.0000e-005		3.8300e-003	3.8300e-003		3.8300e-003	3.8300e-003		2.2880	2.2880	6.0800e-003		2.4399
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.1001**	**9.8300e-003**	**1.0716**	**8.0000e-005**	**0.0000**	**3.8300e-003**	**3.8300e-003**	**0.0000**	**3.8300e-003**	**3.8300e-003**		**2.2880**	**2.2880**	**6.0800e-003**	**0.0000**	**2.4399**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1001	9.8300e-003	1.0716	8.0000e-005		3.8300e-003	3.8300e-003		3.8300e-003	3.8300e-003		2.2880	2.2880	6.0800e-003		2.4399
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.1001**	**9.8300e-003**	**1.0716**	**8.0000e-005**	**0.0000**	**3.8300e-003**	**3.8300e-003**	**0.0000**	**3.8300e-003**	**3.8300e-003**		**2.2880**	**2.2880**	**6.0800e-003**	**0.0000**	**2.4399**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Foundations	Grading	3/1/2020	5/22/2020	5	60	
2	Turbines	Building Construction	3/1/2020	5/29/2020	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Foundations	Cranes	1	4.00	231	0.29
Foundations	Excavators	2	8.00	158	0.38
Foundations	Excavators	2	6.00	158	0.38
Foundations	Forklifts	1	2.00	89	0.20
Foundations	Graders	1	6.00	187	0.41
Foundations	Off-Highway Trucks	5	6.00	402	0.38
Foundations	Other Construction Equipment	4	4.00	172	0.42
Foundations	Other Construction Equipment	3	2.00	172	0.42
Foundations	Plate Compactors	2	2.00	8	0.43
Foundations	Rollers	3	4.00	80	0.38
Foundations	Rubber Tired Dozers	1	8.00	247	0.40
Foundations	Rubber Tired Loaders	1	8.00	203	0.36
Turbines	Aerial Lifts	5	8.00	63	0.31
Turbines	Cranes	4	6.00	231	0.29
Turbines	Forklifts	3	8.00	89	0.20

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Foundations	26	62.00	50.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Turbines	12	122.00	58.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Foundations - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4198	0.0000	6.4198	3.3532	0.0000	3.3532			0.0000			0.0000
Off-Road	7.1081	73.3155	48.4868	0.1118		3.2253	3.2253		2.9677	2.9677		10,821.2415	10,821.2415	3.4960		10,908.6421
Total	**7.1081**	**73.3155**	**48.4868**	**0.1118**	**6.4198**	**3.2253**	**9.6451**	**3.3532**	**2.9677**	**6.3209**		**10,821.2415**	**10,821.2415**	**3.4960**		**10,908.6421**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2781	6.6835	1.7922	0.0141	0.3376	0.0426	0.3802	0.0971	0.0407	0.1379		1,477.5023	1,477.5023	0.0694		1,479.2367
Worker	0.4689	0.4233	3.5969	4.9200e-003	0.5093	4.9100e-003	0.5142	0.1351	4.5400e-003	0.1396		487.3470	487.3470	0.0348		488.2175
Total	**0.7471**	**7.1068**	**5.3891**	**0.0191**	**0.8469**	**0.0475**	**0.8944**	**0.2322**	**0.0453**	**0.2775**		**1,964.8493**	**1,964.8493**	**0.1042**		**1,967.4542**

3.2 Foundations - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.8889	0.0000	2.8889	1.5089	0.0000	1.5089			0.0000			0.0000
Off-Road	1.3700	5.9364	62.3705	0.1118		0.1827	0.1827		0.1827	0.1827	0.0000	10,821.2415	10,821.2415	3.4960		10,908.6421
Total	**1.3700**	**5.9364**	**62.3705**	**0.1118**	**2.8889**	**0.1827**	**3.0716**	**1.5089**	**0.1827**	**1.6916**	**0.0000**	**10,821.2415**	**10,821.2415**	**3.4960**		**10,908.6421**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2781	6.6835	1.7922	0.0141	0.3376	0.0426	0.3802	0.0971	0.0407	0.1379		1,477.5023	1,477.5023	0.0694		1,479.2367
Worker	0.4689	0.4233	3.5969	4.9200e-003	0.5093	4.9100e-003	0.5142	0.1351	4.5400e-003	0.1396		487.3470	487.3470	0.0348		488.2175
Total	**0.7471**	**7.1068**	**5.3891**	**0.0191**	**0.8469**	**0.0475**	**0.8944**	**0.2322**	**0.0453**	**0.2775**		**1,964.8493**	**1,964.8493**	**0.1042**		**1,967.4542**

3.3 Turbines - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9902	23.2853	15.3581	0.0303		1.0284	1.0284		0.9461	0.9461		2,933.5606	2,933.5606	0.9488		2,957.2800
Total	**1.9902**	**23.2853**	**15.3581**	**0.0303**		**1.0284**	**1.0284**		**0.9461**	**0.9461**		**2,933.5606**	**2,933.5606**	**0.9488**		**2,957.2800**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3226	7.7529	2.0790	0.0164	0.3916	0.0494	0.4410	0.1127	0.0473	0.1599		1,713.9026	1,713.9026	0.0805		1,715.9146
Worker	0.9227	0.8329	7.0777	9.6900e-003	1.0022	9.6700e-003	1.0119	0.2658	8.9300e-003	0.2748		958.9731	958.9731	0.0685		960.6860
Total	**1.2454**	**8.5858**	**9.1567**	**0.0261**	**1.3938**	**0.0591**	**1.4529**	**0.3785**	**0.0562**	**0.4347**		**2,672.8757**	**2,672.8757**	**0.1490**		**2,676.6006**

3.3 Turbines - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4759	5.8854	17.6550	0.0303		0.0497	0.0497		0.0497	0.0497	0.0000	2,933.5606	2,933.5606	0.9488		2,957.2800
Total	**0.4759**	**5.8854**	**17.6550**	**0.0303**		**0.0497**	**0.0497**		**0.0497**	**0.0497**	**0.0000**	**2,933.5606**	**2,933.5606**	**0.9488**		**2,957.2800**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3226	7.7529	2.0790	0.0164	0.3916	0.0494	0.4410	0.1127	0.0473	0.1599		1,713.9026	1,713.9026	0.0805		1,715.9146
Worker	0.9227	0.8329	7.0777	9.6900e-003	1.0022	9.6700e-003	1.0119	0.2658	8.9300e-003	0.2748		958.9731	958.9731	0.0685		960.6860
Total	**1.2454**	**8.5858**	**9.1567**	**0.0261**	**1.3938**	**0.0591**	**1.4529**	**0.3785**	**0.0562**	**0.4347**		**2,672.8757**	**2,672.8757**	**0.1490**		**2,676.6006**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.479770	0.048374	0.208987	0.137651	0.044565	0.007238	0.014792	0.045519	0.003292	0.001618	0.005746	0.001515	0.000933

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1001	9.8300e-003	1.0716	8.0000e-005		3.8300e-003	3.8300e-003		3.8300e-003	3.8300e-003		2.2880	2.2880	6.0800e-003		2.4399
Unmitigated	0.1001	9.8300e-003	1.0716	8.0000e-005		3.8300e-003	3.8300e-003		3.8300e-003	3.8300e-003		2.2880	2.2880	6.0800e-003		2.4399

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.1001	9.8300e-003	1.0716	8.0000e-005		3.8300e-003	3.8300e-003		3.8300e-003	3.8300e-003		2.2880	2.2880	6.0800e-003		2.4399
Total	**0.1001**	**9.8300e-003**	**1.0716**	**8.0000e-005**		**3.8300e-003**	**3.8300e-003**		**3.8300e-003**	**3.8300e-003**		**2.2880**	**2.2880**	**6.0800e-003**		**2.4399**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.1001	9.8300e-003	1.0716	8.0000e-005		3.8300e-003	3.8300e-003		3.8300e-003	3.8300e-003		2.2880	2.2880	6.0800e-003		2.4399
Total	**0.1001**	**9.8300e-003**	**1.0716**	**8.0000e-005**		**3.8300e-003**	**3.8300e-003**		**3.8300e-003**	**3.8300e-003**		**2.2880**	**2.2880**	**6.0800e-003**		**2.4399**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Humboldt Wind Energy - Foundations and Turbines

Humboldt County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	10,454.40	1000sqft	240.00	10,454,400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Humboldt Wind Energy - Foundations and Turbines - Humboldt County, Annual

Project Characteristics -

Land Use - 4 acres per Turbine.

Construction Phase - Activity duration per Table 2.0-5 of the Project Description.

Off-road Equipment - Construction equipment per Table 2.0-5 of Project Description.

Off-road Equipment - Construction equipment per Table 2.0-5 of Project Description.

Off-road Equipment - Construction equipment per Table 2.0-5 of Project Description.

Trips and VMT - Trips based on data in Tables 2-2 and 2-4 of Project Description.

Grading - Balanced site.

Vehicle Trips - Modeling for construction only. Operations modeled separately.

Consumer Products - Modeling for construction only. Operations modeled separately.

Area Coating - Modeling for construction only. Operations modeled separately.

Landscape Equipment - Modeling for construction only. Operations modeled separately.

Energy Use - Modeling for construction only. Operations modeled separately.

Water And Wastewater - Modeling for construction only. Operations modeled separately.

Solid Waste - Modeling for construction only. Operations modeled separately.

Construction Off-road Equipment Mitigation - Construction mitigation - Tier 4 equipment and water exposed areas 2x/day (55% PM10 and PM2.5 reduction)

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	5227200	0
tblAreaCoating	Area_Nonresidential_Interior	15681600	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	4,650.00	65.00
tblConstructionPhase	NumDays	465.00	60.00
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	NT24E	1.85	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	T24E	0.62	0.00
tblEnergyUse	T24NG	3.20	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	UsageHours	7.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00

tblOffRoadEquipment	UsageHours	8.00	6.00
tblSolidWaste	SolidWasteGenerationRate	12,963.46	0.00
tblTripsAndVMT	VendorTripNumber	0.00	50.00
tblTripsAndVMT	VendorTripNumber	1,713.00	58.00
tblTripsAndVMT	WorkerTripNumber	65.00	62.00
tblTripsAndVMT	WorkerTripNumber	4,391.00	122.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	2,417,580,000.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3451	3.4518	2.4334	5.7500e-003	0.2592	0.1336	0.3928	0.1189	0.1230	0.2419	0.0000	512.2812	512.2812	0.1306	0.0000	515.5456
Maximum	**0.3451**	**3.4518**	**2.4334**	**5.7500e-003**	**0.2592**	**0.1336**	**0.3928**	**0.1189**	**0.1230**	**0.2419**	**0.0000**	**512.2812**	**512.2812**	**0.1306**	**0.0000**	**515.5456**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.1237	0.8649	2.9245	5.7500e-003	0.1533	0.0105	0.1638	0.0635	0.0103	0.0738	0.0000	512.2807	512.2807	0.1306	0.0000	515.5452
Maximum	**0.1237**	**0.8649**	**2.9245**	**5.7500e-003**	**0.1533**	**0.0105**	**0.1638**	**0.0635**	**0.0103**	**0.0738**	**0.0000**	**512.2807**	**512.2807**	**0.1306**	**0.0000**	**515.5452**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**64.15**	**74.94**	**-20.18**	**0.00**	**40.86**	**92.16**	**58.31**	**46.55**	**91.62**	**69.47**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	3-1-2020	5-31-2020	3.7530	0.9776
		Highest	3.7530	0.9776

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Foundations	Grading	3/1/2020	5/22/2020	5	60	
2	Turbines	Building Construction	3/1/2020	5/29/2020	5	65	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Foundations	Cranes	1	4.00	231	0.29
Foundations	Excavators	2	8.00	158	0.38
Foundations	Excavators	2	6.00	158	0.38
Foundations	Forklifts	1	2.00	89	0.20
Foundations	Graders	1	6.00	187	0.41
Foundations	Off-Highway Trucks	5	6.00	402	0.38
Foundations	Other Construction Equipment	4	4.00	172	0.42
Foundations	Other Construction Equipment	3	2.00	172	0.42
Foundations	Plate Compactors	2	2.00	8	0.43
Foundations	Rollers	3	4.00	80	0.38
Foundations	Rubber Tired Dozers	1	8.00	247	0.40
Foundations	Rubber Tired Loaders	1	8.00	203	0.36
Turbines	Aerial Lifts	5	8.00	63	0.31
Turbines	Cranes	4	6.00	231	0.29
Turbines	Forklifts	3	8.00	89	0.20

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Foundations	26	62.00	50.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Turbines	12	122.00	58.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Foundations - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1926	0.0000	0.1926	0.1006	0.0000	0.1006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2132	2.1995	1.4546	3.3500e-003		0.0968	0.0968		0.0890	0.0890	0.0000	294.5060	294.5060	0.0952	0.0000	296.8846
Total	**0.2132**	**2.1995**	**1.4546**	**3.3500e-003**	**0.1926**	**0.0968**	**0.2894**	**0.1006**	**0.0890**	**0.1896**	**0.0000**	**294.5060**	**294.5060**	**0.0952**	**0.0000**	**296.8846**

3.2 Foundations - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.5800e-003	0.2005	0.0572	4.2000e-004	9.6200e-003	1.2900e-003	0.0109	2.7900e-003	1.2400e-003	4.0200e-003	0.0000	39.7591	39.7591	1.9700e-003	0.0000	39.8084
Worker	0.0153	0.0137	0.1120	1.5000e-004	0.0143	1.5000e-004	0.0145	3.8200e-003	1.4000e-004	3.9600e-003	0.0000	13.2708	13.2708	9.6000e-004	0.0000	13.2948
Total	**0.0238**	**0.2143**	**0.1691**	**5.7000e-004**	**0.0240**	**1.4400e-003**	**0.0254**	**6.6100e-003**	**1.3800e-003**	**7.9800e-003**	**0.0000**	**53.0299**	**53.0299**	**2.9300e-003**	**0.0000**	**53.1033**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0867	0.0000	0.0867	0.0453	0.0000	0.0453	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0411	0.1781	1.8711	3.3500e-003		5.4800e-003	5.4800e-003		5.4800e-003	5.4800e-003	0.0000	294.5056	294.5056	0.0952	0.0000	296.8843
Total	**0.0411**	**0.1781**	**1.8711**	**3.3500e-003**	**0.0867**	**5.4800e-003**	**0.0922**	**0.0453**	**5.4800e-003**	**0.0508**	**0.0000**	**294.5056**	**294.5056**	**0.0952**	**0.0000**	**296.8843**

3.2 Foundations - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.5800e-003	0.2005	0.0572	4.2000e-004	9.6200e-003	1.2900e-003	0.0109	2.7900e-003	1.2400e-003	4.0200e-003	0.0000	39.7591	39.7591	1.9700e-003	0.0000	39.8084
Worker	0.0153	0.0137	0.1120	1.5000e-004	0.0143	1.5000e-004	0.0145	3.8200e-003	1.4000e-004	3.9600e-003	0.0000	13.2708	13.2708	9.6000e-004	0.0000	13.2948
Total	**0.0238**	**0.2143**	**0.1691**	**5.7000e-004**	**0.0240**	**1.4400e-003**	**0.0254**	**6.6100e-003**	**1.3800e-003**	**7.9800e-003**	**0.0000**	**53.0299**	**53.0299**	**2.9300e-003**	**0.0000**	**53.1033**

3.3 Turbines - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0647	0.7568	0.4991	9.8000e-004		0.0334	0.0334		0.0308	0.0308	0.0000	86.4917	86.4917	0.0280	0.0000	87.1910
Total	**0.0647**	**0.7568**	**0.4991**	**9.8000e-004**		**0.0334**	**0.0334**		**0.0308**	**0.0308**	**0.0000**	**86.4917**	**86.4917**	**0.0280**	**0.0000**	**87.1910**

3.3 Turbines - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0108	0.2520	0.0718	5.3000e-004	0.0121	1.6200e-003	0.0137	3.5000e-003	1.5500e-003	5.0600e-003	0.0000	49.9640	49.9640	2.4800e-003	0.0000	50.0259
Worker	0.0325	0.0293	0.2387	3.2000e-004	0.0306	3.1000e-004	0.0309	8.1500e-003	2.9000e-004	8.4400e-003	0.0000	28.2897	28.2897	2.0500e-003	0.0000	28.3409
Total	**0.0433**	**0.2813**	**0.3105**	**8.5000e-004**	**0.0427**	**1.9300e-003**	**0.0446**	**0.0117**	**1.8400e-003**	**0.0135**	**0.0000**	**78.2536**	**78.2536**	**4.5300e-003**	**0.0000**	**78.3668**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0155	0.1913	0.5738	9.8000e-004		1.6100e-003	1.6100e-003		1.6100e-003	1.6100e-003	0.0000	86.4915	86.4915	0.0280	0.0000	87.1909
Total	**0.0155**	**0.1913**	**0.5738**	**9.8000e-004**		**1.6100e-003**	**1.6100e-003**		**1.6100e-003**	**1.6100e-003**	**0.0000**	**86.4915**	**86.4915**	**0.0280**	**0.0000**	**87.1909**

3.3 Turbines - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0108	0.2520	0.0718	5.3000e-004	0.0121	1.6200e-003	0.0137	3.5000e-003	1.5500e-003	5.0600e-003	0.0000	49.9640	49.9640	2.4800e-003	0.0000	50.0259
Worker	0.0325	0.0293	0.2387	3.2000e-004	0.0306	3.1000e-004	0.0309	8.1500e-003	2.9000e-004	8.4400e-003	0.0000	28.2897	28.2897	2.0500e-003	0.0000	28.3409
Total	**0.0433**	**0.2813**	**0.3105**	**8.5000e-004**	**0.0427**	**1.9300e-003**	**0.0446**	**0.0117**	**1.8400e-003**	**0.0135**	**0.0000**	**78.2536**	**78.2536**	**4.5300e-003**	**0.0000**	**78.3668**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.479770	0.048374	0.208987	0.137651	0.044565	0.007238	0.014792	0.045519	0.003292	0.001618	0.005746	0.001515	0.000933

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Humboldt Wind Energy - Collection System & GenTie

Humboldt County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	3,006.00	1000sqft	69.01	3,006,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Humboldt Wind Energy - Collection System & GenTie - Humboldt County, Winter

Project Characteristics -

Land Use -

Construction Phase - Construction activity duration per Table 2-5.

Off-road Equipment - Construction equipment per Table 2-5.

Off-road Equipment - Construction Equipment per Tabe 2-5.

Trips and VMT - Construction trips per data in Tables 2-2 and 2-4.

Grading - Balanced Site.

Construction Off-road Equipment Mitigation - Tier 4 Equipment and Watering Exposed Area applied as mitigation.

Vehicle Trips - Modeling for construction only. Operations modeled separately.

Consumer Products - Modeling for construction only. Operations modeled separately.

Area Coating - Modeling for construction only. Operations modeled separately.

Landscape Equipment - Modeling for construction only. Operations modeled separately.

Energy Use - Modeling for construction only. Operations modeled separately.

Water And Wastewater - Modeling for construction only. Operations modeled separately.

Solid Waste - Modeling for construction only. Operations modeled separately.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	1503000	0
tblAreaCoating	Area_Nonresidential_Interior	4509000	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

Humboldt Wind Energy - Collection System & GenTie - Humboldt County, Winter

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	110.00	200.00
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	NT24E	1.85	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	T24E	0.62	0.00
tblEnergyUse	T24NG	3.20	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblSolidWaste	SolidWasteGenerationRate	3,727.44	0.00
tblTripsAndVMT	VendorTripNumber	0.00	50.00
tblTripsAndVMT	WorkerTripNumber	65.00	102.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00

tblWater	IndoorWaterUseRate	695,137,500.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	9.2335	91.2128	62.1640	0.1627	5.6921	3.5613	9.2534	2.8020	3.2780	6.0801	0.0000	15,877.2917	15,877.2917	4.5470	0.0000	15,990.9653
Maximum	**9.2335**	**91.2128**	**62.1640**	**0.1627**	**5.6921**	**3.5613**	**9.2534**	**2.8020**	**3.2780**	**6.0801**	**0.0000**	**15,877.2917**	**15,877.2917**	**4.5470**	**0.0000**	**15,990.9653**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	3.0085	17.0003	81.9581	0.1627	3.2080	0.2828	3.4908	1.4366	0.2803	1.7168	0.0000	15,877.2917	15,877.2917	4.5470	0.0000	15,990.9652
Maximum	**3.0085**	**17.0003**	**81.9581**	**0.1627**	**3.2080**	**0.2828**	**3.4908**	**1.4366**	**0.2803**	**1.7168**	**0.0000**	**15,877.2917**	**15,877.2917**	**4.5470**	**0.0000**	**15,990.9652**

Humboldt Wind Energy - Collection System & GenTie - Humboldt County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**67.42**	**81.36**	**-31.84**	**0.00**	**43.64**	**92.06**	**62.28**	**48.73**	**91.45**	**71.76**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0288	2.8300e-003	0.3081	2.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003		0.6579	0.6579	1.7500e-003		0.7016
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0288**	**2.8300e-003**	**0.3081**	**2.0000e-005**	**0.0000**	**1.1000e-003**	**1.1000e-003**	**0.0000**	**1.1000e-003**	**1.1000e-003**		**0.6579**	**0.6579**	**1.7500e-003**	**0.0000**	**0.7016**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0288	2.8300e-003	0.3081	2.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003		0.6579	0.6579	1.7500e-003		0.7016
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0288**	**2.8300e-003**	**0.3081**	**2.0000e-005**	**0.0000**	**1.1000e-003**	**1.1000e-003**	**0.0000**	**1.1000e-003**	**1.1000e-003**		**0.6579**	**0.6579**	**1.7500e-003**	**0.0000**	**0.7016**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Collection System / GenTie Construction	Grading	3/1/2020	12/4/2020	5	200	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Collection System / GenTie Construction	Aerial Lifts	3	6.00	63	0.31
Collection System / GenTie Construction	Bore/Drill Rigs	3	6.00	221	0.50
Collection System / GenTie Construction	Cranes	2	8.00	231	0.29
Collection System / GenTie Construction	Excavators	1	8.00	158	0.38
Collection System / GenTie Construction	Off-Highway Trucks	7	6.00	402	0.38
Collection System / GenTie Construction	Other Construction Equipment	6	4.00	172	0.42
Collection System / GenTie Construction	Rollers	2	4.00	80	0.38
Collection System / GenTie Construction	Rubber Tired Dozers	1	6.00	247	0.40
Collection System / GenTie Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Collection System / GenTie Construction	26	102.00	50.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Collection System / GenTie Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.5166	0.0000	4.5166	2.4827	0.0000	2.4827			0.0000			0.0000
Off-Road	8.0035	83.6398	53.7134	0.1409		3.5094	3.5094		3.2287	3.2287		13,639.9853	13,639.9853	4.4115		13,750.2714
Total	**8.0035**	**83.6398**	**53.7134**	**0.1409**	**4.5166**	**3.5094**	**8.0260**	**2.4827**	**3.2287**	**5.7114**		**13,639.9853**	**13,639.9853**	**4.4115**		**13,750.2714**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2969	6.7337	2.0479	0.0138	0.3376	0.0438	0.3814	0.0971	0.0419	0.1390		1,438.0244	1,438.0244	0.0766		1,439.9383
Worker	0.9331	0.8392	6.4027	8.0800e-003	0.8379	8.0800e-003	0.8460	0.2223	7.4700e-003	0.2297		799.2820	799.2820	0.0589		800.7555
Total	**1.2300**	**7.5729**	**8.4506**	**0.0219**	**1.1755**	**0.0519**	**1.2274**	**0.3194**	**0.0493**	**0.3687**		**2,237.3064**	**2,237.3064**	**0.1355**		**2,240.6938**

3.2 Collection System / GenTie Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.0325	0.0000	2.0325	1.1172	0.0000	1.1172			0.0000			0.0000
Off-Road	1.7785	9.4274	73.5075	0.1409		0.2309	0.2309		0.2309	0.2309	0.0000	13,639.9852	13,639.9852	4.4115		13,750.2714
Total	**1.7785**	**9.4274**	**73.5075**	**0.1409**	**2.0325**	**0.2309**	**2.2634**	**1.1172**	**0.2309**	**1.3481**	**0.0000**	**13,639.9852**	**13,639.9852**	**4.4115**		**13,750.2714**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2969	6.7337	2.0479	0.0138	0.3376	0.0438	0.3814	0.0971	0.0419	0.1390		1,438.0244	1,438.0244	0.0766		1,439.9383
Worker	0.9331	0.8392	6.4027	8.0800e-003	0.8379	8.0800e-003	0.8460	0.2223	7.4700e-003	0.2297		799.2820	799.2820	0.0589		800.7555
Total	**1.2300**	**7.5729**	**8.4506**	**0.0219**	**1.1755**	**0.0519**	**1.2274**	**0.3194**	**0.0493**	**0.3687**		**2,237.3064**	**2,237.3064**	**0.1355**		**2,240.6938**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.479770	0.048374	0.208987	0.137651	0.044565	0.007238	0.014792	0.045519	0.003292	0.001618	0.005746	0.001515	0.000933

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0288	2.8300e-003	0.3081	2.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003		0.6579	0.6579	1.7500e-003		0.7016
Unmitigated	0.0288	2.8300e-003	0.3081	2.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003		0.6579	0.6579	1.7500e-003		0.7016

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0288	2.8300e-003	0.3081	2.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003		0.6579	0.6579	1.7500e-003		0.7016
Total	**0.0288**	**2.8300e-003**	**0.3081**	**2.0000e-005**		**1.1000e-003**	**1.1000e-003**		**1.1000e-003**	**1.1000e-003**		**0.6579**	**0.6579**	**1.7500e-003**		**0.7016**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0288	2.8300e-003	0.3081	2.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003		0.6579	0.6579	1.7500e-003		0.7016
Total	**0.0288**	**2.8300e-003**	**0.3081**	**2.0000e-005**		**1.1000e-003**	**1.1000e-003**		**1.1000e-003**	**1.1000e-003**		**0.6579**	**0.6579**	**1.7500e-003**		**0.7016**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Humboldt Wind Energy - Collection System & GenTie

Humboldt County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	3,006.00	1000sqft	69.01	3,006,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Humboldt Wind Energy - Collection System & GenTie - Humboldt County, Summer

Project Characteristics -

Land Use -

Construction Phase - Construction activity duration per Table 2-5.

Off-road Equipment - Construction equipment per Table 2-5.

Off-road Equipment - Construction Equipment per Tabe 2-5.

Trips and VMT - Construction trips per data in Tables 2-2 and 2-4.

Grading - Balanced Site.

Construction Off-road Equipment Mitigation - Tier 4 Equipment and Watering Exposed Area applied as mitigation.

Vehicle Trips - Modeling for construction only. Operations modeled separately.

Consumer Products - Modeling for construction only. Operations modeled separately.

Area Coating - Modeling for construction only. Operations modeled separately.

Landscape Equipment - Modeling for construction only. Operations modeled separately.

Energy Use - Modeling for construction only. Operations modeled separately.

Water And Wastewater - Modeling for construction only. Operations modeled separately.

Solid Waste - Modeling for construction only. Operations modeled separately.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	1503000	0
tblAreaCoating	Area_Nonresidential_Interior	4509000	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

Humboldt Wind Energy - Collection System & GenTie - Humboldt County, Summer

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	110.00	200.00
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	NT24E	1.85	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	T24E	0.62	0.00
tblEnergyUse	T24NG	3.20	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblSolidWaste	SolidWasteGenerationRate	3,727.44	0.00
tblTripsAndVMT	VendorTripNumber	0.00	50.00
tblTripsAndVMT	WorkerTripNumber	65.00	102.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00

tblWater	IndoorWaterUseRate	695,137,500.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	9.0531	91.0197	61.4230	0.1631	5.6921	3.5601	9.2522	2.8020	3.2769	6.0789	0.0000	15,919.2519	15,919.2519	4.5381	0.0000	16,032.7046
Maximum	**9.0531**	**91.0197**	**61.4230**	**0.1631**	**5.6921**	**3.5601**	**9.2522**	**2.8020**	**3.2769**	**6.0789**	**0.0000**	**15,919.2519**	**15,919.2519**	**4.5381**	**0.0000**	**16,032.7046**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.8281	16.8073	81.2171	0.1631	3.2080	0.2816	3.4896	1.4366	0.2791	1.7157	0.0000	15,919.2519	15,919.2519	4.5381	0.0000	16,032.7046
Maximum	**2.8281**	**16.8073**	**81.2171**	**0.1631**	**3.2080**	**0.2816**	**3.4896**	**1.4366**	**0.2791**	**1.7157**	**0.0000**	**15,919.2519**	**15,919.2519**	**4.5381**	**0.0000**	**16,032.7046**

Humboldt Wind Energy - Collection System & GenTie - Humboldt County, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**68.76**	**81.53**	**-32.23**	**0.00**	**43.64**	**92.09**	**62.28**	**48.73**	**91.48**	**71.78**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0288	2.8300e-003	0.3081	2.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003		0.6579	0.6579	1.7500e-003		0.7016
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0288**	**2.8300e-003**	**0.3081**	**2.0000e-005**	**0.0000**	**1.1000e-003**	**1.1000e-003**	**0.0000**	**1.1000e-003**	**1.1000e-003**		**0.6579**	**0.6579**	**1.7500e-003**	**0.0000**	**0.7016**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0288	2.8300e-003	0.3081	2.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003		0.6579	0.6579	1.7500e-003		0.7016
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0288**	**2.8300e-003**	**0.3081**	**2.0000e-005**	**0.0000**	**1.1000e-003**	**1.1000e-003**	**0.0000**	**1.1000e-003**	**1.1000e-003**		**0.6579**	**0.6579**	**1.7500e-003**	**0.0000**	**0.7016**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Collection System / GenTie Construction	Grading	3/1/2020	12/4/2020	5	200	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Collection System / GenTie Construction	Aerial Lifts	3	6.00	63	0.31
Collection System / GenTie Construction	Bore/Drill Rigs	3	6.00	221	0.50
Collection System / GenTie Construction	Cranes	2	8.00	231	0.29
Collection System / GenTie Construction	Excavators	1	8.00	158	0.38
Collection System / GenTie Construction	Off-Highway Trucks	7	6.00	402	0.38
Collection System / GenTie Construction	Other Construction Equipment	6	4.00	172	0.42
Collection System / GenTie Construction	Rollers	2	4.00	80	0.38
Collection System / GenTie Construction	Rubber Tired Dozers	1	6.00	247	0.40
Collection System / GenTie Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Collection System / GenTie Construction	26	102.00	50.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Collection System / GenTie Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.5166	0.0000	4.5166	2.4827	0.0000	2.4827			0.0000			0.0000
Off-Road	8.0035	83.6398	53.7134	0.1409		3.5094	3.5094		3.2287	3.2287		13,639.9853	13,639.9853	4.4115		13,750.2714
Total	**8.0035**	**83.6398**	**53.7134**	**0.1409**	**4.5166**	**3.5094**	**8.0260**	**2.4827**	**3.2287**	**5.7114**		**13,639.9853**	**13,639.9853**	**4.4115**		**13,750.2714**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2781	6.6835	1.7922	0.0141	0.3376	0.0426	0.3802	0.0971	0.0407	0.1379		1,477.5023	1,477.5023	0.0694		1,479.2367
Worker	0.7715	0.6964	5.9174	8.1000e-003	0.8379	8.0800e-003	0.8460	0.2223	7.4700e-003	0.2297		801.7644	801.7644	0.0573		803.1965
Total	**1.0496**	**7.3799**	**7.7097**	**0.0222**	**1.1755**	**0.0507**	**1.2262**	**0.3194**	**0.0482**	**0.3676**		**2,279.2667**	**2,279.2667**	**0.1267**		**2,282.4332**

3.2 Collection System / GenTie Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.0325	0.0000	2.0325	1.1172	0.0000	1.1172			0.0000			0.0000
Off-Road	1.7785	9.4274	73.5075	0.1409		0.2309	0.2309		0.2309	0.2309	0.0000	13,639.9852	13,639.9852	4.4115		13,750.2714
Total	**1.7785**	**9.4274**	**73.5075**	**0.1409**	**2.0325**	**0.2309**	**2.2634**	**1.1172**	**0.2309**	**1.3481**	**0.0000**	**13,639.9852**	**13,639.9852**	**4.4115**		**13,750.2714**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2781	6.6835	1.7922	0.0141	0.3376	0.0426	0.3802	0.0971	0.0407	0.1379		1,477.5023	1,477.5023	0.0694		1,479.2367
Worker	0.7715	0.6964	5.9174	8.1000e-003	0.8379	8.0800e-003	0.8460	0.2223	7.4700e-003	0.2297		801.7644	801.7644	0.0573		803.1965
Total	**1.0496**	**7.3799**	**7.7097**	**0.0222**	**1.1755**	**0.0507**	**1.2262**	**0.3194**	**0.0482**	**0.3676**		**2,279.2667**	**2,279.2667**	**0.1267**		**2,282.4332**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.479770	0.048374	0.208987	0.137651	0.044565	0.007238	0.014792	0.045519	0.003292	0.001618	0.005746	0.001515	0.000933

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0288	2.8300e-003	0.3081	2.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003		0.6579	0.6579	1.7500e-003		0.7016
Unmitigated	0.0288	2.8300e-003	0.3081	2.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003		0.6579	0.6579	1.7500e-003		0.7016

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0288	2.8300e-003	0.3081	2.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003		0.6579	0.6579	1.7500e-003		0.7016
Total	**0.0288**	**2.8300e-003**	**0.3081**	**2.0000e-005**		**1.1000e-003**	**1.1000e-003**		**1.1000e-003**	**1.1000e-003**		**0.6579**	**0.6579**	**1.7500e-003**		**0.7016**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0288	2.8300e-003	0.3081	2.0000e-005		1.1000e-003	1.1000e-003		1.1000e-003	1.1000e-003		0.6579	0.6579	1.7500e-003		0.7016
Total	**0.0288**	**2.8300e-003**	**0.3081**	**2.0000e-005**		**1.1000e-003**	**1.1000e-003**		**1.1000e-003**	**1.1000e-003**		**0.6579**	**0.6579**	**1.7500e-003**		**0.7016**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Humboldt Wind Energy - Collection System & GenTie

Humboldt County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	3,006.00	1000sqft	69.01	3,006,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Humboldt Wind Energy - Collection System & GenTie - Humboldt County, Annual

Project Characteristics -

Land Use -

Construction Phase - Construction activity duration per Table 2-5.

Off-road Equipment - Construction equipment per Table 2-5.

Off-road Equipment - Construction Equipment per Tabe 2-5.

Trips and VMT - Construction trips per data in Tables 2-2 and 2-4.

Grading - Balanced Site.

Construction Off-road Equipment Mitigation - Tier 4 Equipment and Watering Exposed Area applied as mitigation.

Vehicle Trips - Modeling for construction only. Operations modeled separately.

Consumer Products - Modeling for construction only. Operations modeled separately.

Area Coating - Modeling for construction only. Operations modeled separately.

Landscape Equipment - Modeling for construction only. Operations modeled separately.

Energy Use - Modeling for construction only. Operations modeled separately.

Water And Wastewater - Modeling for construction only. Operations modeled separately.

Solid Waste - Modeling for construction only. Operations modeled separately.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	1503000	0
tblAreaCoating	Area_Nonresidential_Interior	4509000	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

Humboldt Wind Energy - Collection System & GenTie - Humboldt County, Annual

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	110.00	200.00
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	NT24E	1.85	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	T24E	0.62	0.00
tblEnergyUse	T24NG	3.20	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblOffRoadEquipment	UsageHours	8.00	6.00
tblSolidWaste	SolidWasteGenerationRate	3,727.44	0.00
tblTripsAndVMT	VendorTripNumber	0.00	50.00
tblTripsAndVMT	WorkerTripNumber	65.00	102.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00

tblWater	IndoorWaterUseRate	695,137,500.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.9126	9.1077	6.1759	0.0163	0.5624	0.3561	0.9184	0.2785	0.3277	0.6063	0.0000	1,442.7045	1,442.7045	0.4120	0.0000	1,453.0056
Maximum	**0.9126**	**9.1077**	**6.1759**	**0.0163**	**0.5624**	**0.3561**	**0.9184**	**0.2785**	**0.3277**	**0.6063**	**0.0000**	**1,442.7045**	**1,442.7045**	**0.4120**	**0.0000**	**1,453.0056**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.2901	1.6865	8.1553	0.0163	0.3140	0.0282	0.3422	0.1420	0.0280	0.1699	0.0000	1,442.7030	1,442.7030	0.4120	0.0000	1,453.0041
Maximum	**0.2901**	**1.6865**	**8.1553**	**0.0163**	**0.3140**	**0.0282**	**0.3422**	**0.1420**	**0.0280**	**0.1699**	**0.0000**	**1,442.7030**	**1,442.7030**	**0.4120**	**0.0000**	**1,453.0041**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**68.21**	**81.48**	**-32.05**	**0.00**	**44.17**	**92.08**	**62.74**	**49.03**	**91.47**	**71.97**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**3-1-2020**	**5-31-2020**	3.2922	0.6493
2	**6-1-2020**	**8-31-2020**	3.2881	0.6452
3	**9-1-2020**	**9-30-2020**	1.0722	0.2104
		Highest	3.2922	0.6493

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Collection System / GenTie Construction	Grading	3/1/2020	12/4/2020	5	200	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Collection System / GenTie Construction	Aerial Lifts	3	6.00	63	0.31
Collection System / GenTie Construction	Bore/Drill Rigs	3	6.00	221	0.50
Collection System / GenTie Construction	Cranes	2	8.00	231	0.29
Collection System / GenTie Construction	Excavators	1	8.00	158	0.38
Collection System / GenTie Construction	Off-Highway Trucks	7	6.00	402	0.38
Collection System / GenTie Construction	Other Construction Equipment	6	4.00	172	0.42
Collection System / GenTie Construction	Rollers	2	4.00	80	0.38
Collection System / GenTie Construction	Rubber Tired Dozers	1	6.00	247	0.40
Collection System / GenTie Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Collection System / GenTie Construction	26	102.00	50.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Collection System / GenTie Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4517	0.0000	0.4517	0.2483	0.0000	0.2483	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.8004	8.3640	5.3713	0.0141		0.3509	0.3509		0.3229	0.3229	0.0000	1,237.3987	1,237.3987	0.4002	0.0000	1,247.4036
Total	**0.8004**	**8.3640**	**5.3713**	**0.0141**	**0.4517**	**0.3509**	**0.8026**	**0.2483**	**0.3229**	**0.5711**	**0.0000**	**1,237.3987**	**1,237.3987**	**0.4002**	**0.0000**	**1,247.4036**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0286	0.6684	0.1905	1.4000e-003	0.0321	4.3100e-003	0.0364	9.2900e-003	4.1200e-003	0.0134	0.0000	132.5304	132.5304	6.5800e-003	0.0000	132.6948
Worker	0.0837	0.0754	0.6140	8.1000e-004	0.0787	8.1000e-004	0.0795	0.0210	7.5000e-004	0.0217	0.0000	72.7755	72.7755	5.2700e-003	0.0000	72.9071
Total	**0.1123**	**0.7437**	**0.8045**	**2.2100e-003**	**0.1107**	**5.1200e-003**	**0.1158**	**0.0303**	**4.8700e-003**	**0.0351**	**0.0000**	**205.3059**	**205.3059**	**0.0119**	**0.0000**	**205.6019**

3.2 Collection System / GenTie Construction - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2033	0.0000	0.2033	0.1117	0.0000	0.1117	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1779	0.9427	7.3507	0.0141		0.0231	0.0231		0.0231	0.0231	0.0000	1,237.3972	1,237.3972	0.4002	0.0000	1,247.4022
Total	**0.1779**	**0.9427**	**7.3507**	**0.0141**	**0.2033**	**0.0231**	**0.2263**	**0.1117**	**0.0231**	**0.1348**	**0.0000**	**1,237.3972**	**1,237.3972**	**0.4002**	**0.0000**	**1,247.4022**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0286	0.6684	0.1905	1.4000e-003	0.0321	4.3100e-003	0.0364	9.2900e-003	4.1200e-003	0.0134	0.0000	132.5304	132.5304	6.5800e-003	0.0000	132.6948
Worker	0.0837	0.0754	0.6140	8.1000e-004	0.0787	8.1000e-004	0.0795	0.0210	7.5000e-004	0.0217	0.0000	72.7755	72.7755	5.2700e-003	0.0000	72.9071
Total	**0.1123**	**0.7437**	**0.8045**	**2.2100e-003**	**0.1107**	**5.1200e-003**	**0.1158**	**0.0303**	**4.8700e-003**	**0.0351**	**0.0000**	**205.3059**	**205.3059**	**0.0119**	**0.0000**	**205.6019**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.479770	0.048374	0.208987	0.137651	0.044565	0.007238	0.014792	0.045519	0.003292	0.001618	0.005746	0.001515	0.000933

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**					**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Humboldt Wind Energy - Substations

Humboldt County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	130.68	1000sqft	3.00	130,680.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Humboldt Wind Energy - Substations - Humboldt County, Winter

Project Characteristics -

Land Use - 3 acres for new substation. Upgrades to existing Bridgeville substation.

Construction Phase - Construction equipment and duration identified in Table 2-5 of Project Description.

Off-road Equipment -

Trips and VMT - Trips per data in Tables 2-2 and 2-4 from Project Description.

Demolition -

Grading - Balanced site.

Vehicle Trips - Construction only - no operations modeled.

Consumer Products - Construction only. Operations not modeled.

Area Coating - Construction only. Operations not modeled.

Landscape Equipment - Construction only. Operations not modeled.

Energy Use - Construction only. Operations not modeled.

Water And Wastewater - Construction only. Operations not modeled.

Solid Waste - Construction only. Operations not modeled.

Construction Off-road Equipment Mitigation - Construction Mitigation - Tier 4 Equipment and water exposed area 2x/day (55% PM10 and PM2.5 reduction).

Off-road Equipment - Construction equipment for Substation Construction per Table 2-5 from the Project Description. 1 Generator Set added for Batch Plant (250 KW ~ 335hp), assumed running 24 hours per day.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	65340	0
tblAreaCoating	Area_Nonresidential_Interior	196020	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	6.00	84.00
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	NT24E	1.85	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	T24E	0.62	0.00
tblEnergyUse	T24NG	3.20	0.00
tblOffRoadEquipment	HorsePower	84.00	335.00
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.20	0.20
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.37	0.37

tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.31	0.31
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblSolidWaste	SolidWasteGenerationRate	162.04	0.00
tblTripsAndVMT	VendorTripNumber	0.00	50.00
tblTripsAndVMT	WorkerTripNumber	60.00	40.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	30,219,750.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	7.9767	83.8044	57.5411	0.1593	0.6662	3.3353	4.0015	0.1843	3.1290	3.3133	0.0000	16,621.9815	16,621.9815	2.7099	0.0000	16,689.7288
Maximum	**7.9767**	**83.8044**	**57.5411**	**0.1593**	**0.6662**	**3.3353**	**4.0015**	**0.1843**	**3.1290**	**3.3133**	**0.0000**	**16,621.9815**	**16,621.9815**	**2.7099**	**0.0000**	**16,689.7288**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.4204	15.8195	82.2762	0.1593	0.6662	0.2772	0.9434	0.1843	0.2750	0.4593	0.0000	16,621.9815	16,621.9815	2.7099	0.0000	16,689.7288
Maximum	**2.4204**	**15.8195**	**82.2762**	**0.1593**	**0.6662**	**0.2772**	**0.9434**	**0.1843**	**0.2750**	**0.4593**	**0.0000**	**16,621.9815**	**16,621.9815**	**2.7099**	**0.0000**	**16,689.7288**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**69.66**	**81.12**	**-42.99**	**0.00**	**0.00**	**91.69**	**76.42**	**0.00**	**91.21**	**86.14**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.7978	1.2000e-004	0.0134	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0286	0.0286	8.0000e-005		0.0305
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**2.7978**	**1.2000e-004**	**0.0134**	**0.0000**	**0.0000**	**5.0000e-005**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**5.0000e-005**		**0.0286**	**0.0286**	**8.0000e-005**	**0.0000**	**0.0305**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.7978	1.2000e-004	0.0134	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0286	0.0286	8.0000e-005		0.0305
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**2.7978**	**1.2000e-004**	**0.0134**	**0.0000**	**0.0000**	**5.0000e-005**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**5.0000e-005**		**0.0286**	**0.0286**	**8.0000e-005**	**0.0000**	**0.0305**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Substation Construction & Improvements	Grading	8/1/2020	11/26/2020	5	84	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Humboldt Wind Energy - Substations - Humboldt County, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Substation Construction & Improvements	Bore/Drill Rigs	2	8.00	221	0.50
Substation Construction & Improvements	Cranes	2	4.00	231	0.29
Substation Construction & Improvements	Forklifts	1	8.00	89	0.20
Substation Construction & Improvements	Rubber Tired Loaders	1	6.00	203	0.36
Substation Construction & Improvements	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Substation Construction & Improvements	Other Construction Equipment	5	6.00	172	0.42
Substation Construction & Improvements	Plate Compactors	3	4.00	8	0.43
Substation Construction & Improvements	Aerial Lifts	2	6.00	63	0.31
Substation Construction & Improvements	Other Construction Equipment	3	4.00	172	0.42
Substation Construction & Improvements	Rollers	1	4.00	80	0.38
Substation Construction & Improvements	Generator Sets	1	24.00	335	0.74

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Substation Construction & Improv	24	40.00	50.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Substation Construction & Improvements - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	7.3139	76.7416	52.9824	0.1424		3.2884	3.2884		3.0842	3.0842		14,870.5131	14,870.5131	2.6102		14,935.7687
Total	**7.3139**	**76.7416**	**52.9824**	**0.1424**		**3.2884**	**3.2884**		**3.0842**	**3.0842**		**14,870.5131**	**14,870.5131**	**2.6102**		**14,935.7687**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2969	6.7337	2.0479	0.0138	0.3376	0.0438	0.3814	0.0971	0.0419	0.1390		1,438.0244	1,438.0244	0.0766		1,439.9383
Worker	0.3659	0.3291	2.5109	3.1700e-003	0.3286	3.1700e-003	0.3318	0.0872	2.9300e-003	0.0901		313.4439	313.4439	0.0231		314.0218
Total	**0.6628**	**7.0628**	**4.5588**	**0.0169**	**0.6662**	**0.0469**	**0.7131**	**0.1843**	**0.0448**	**0.2291**		**1,751.4683**	**1,751.4683**	**0.0997**		**1,753.9601**

3.2 Substation Construction & Improvements - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7576	8.7567	77.7175	0.1424		0.2302	0.2302		0.2302	0.2302	0.0000	14,870.5131	14,870.5131	2.6102		14,935.7687
Total	**1.7576**	**8.7567**	**77.7175**	**0.1424**		**0.2302**	**0.2302**		**0.2302**	**0.2302**	**0.0000**	**14,870.5131**	**14,870.5131**	**2.6102**		**14,935.7687**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2969	6.7337	2.0479	0.0138	0.3376	0.0438	0.3814	0.0971	0.0419	0.1390		1,438.0244	1,438.0244	0.0766		1,439.9383
Worker	0.3659	0.3291	2.5109	3.1700e-003	0.3286	3.1700e-003	0.3318	0.0872	2.9300e-003	0.0901		313.4439	313.4439	0.0231		314.0218
Total	**0.6628**	**7.0628**	**4.5588**	**0.0169**	**0.6662**	**0.0469**	**0.7131**	**0.1843**	**0.0448**	**0.2291**		**1,751.4683**	**1,751.4683**	**0.0997**		**1,753.9601**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.479770	0.048374	0.208987	0.137651	0.044565	0.007238	0.014792	0.045519	0.003292	0.001618	0.005746	0.001515	0.000933

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.7978	1.2000e-004	0.0134	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0286	0.0286	8.0000e-005		0.0305
Unmitigated	2.7978	1.2000e-004	0.0134	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0286	0.0286	8.0000e-005		0.0305

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.7966					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.2500e-003	1.2000e-004	0.0134	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0286	0.0286	8.0000e-005		0.0305
Total	**2.7978**	**1.2000e-004**	**0.0134**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0286**	**0.0286**	**8.0000e-005**		**0.0305**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.7966					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.2500e-003	1.2000e-004	0.0134	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0286	0.0286	8.0000e-005		0.0305
Total	**2.7978**	**1.2000e-004**	**0.0134**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0286**	**0.0286**	**8.0000e-005**		**0.0305**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Humboldt Wind Energy - Substations

Humboldt County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	130.68	1000sqft	3.00	130,680.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Humboldt Wind Energy - Substations - Humboldt County, Summer

Project Characteristics -

Land Use - 3 acres for new substation. Upgrades to existing Bridgeville substation.

Construction Phase - Construction equipment and duration identified in Table 2-5 of Project Description.

Off-road Equipment -

Trips and VMT - Trips per data in Tables 2-2 and 2-4 from Project Description.

Demolition -

Grading - Balanced site.

Vehicle Trips - Construction only - no operations modeled.

Consumer Products - Construction only. Operations not modeled.

Area Coating - Construction only. Operations not modeled.

Landscape Equipment - Construction only. Operations not modeled.

Energy Use - Construction only. Operations not modeled.

Water And Wastewater - Construction only. Operations not modeled.

Solid Waste - Construction only. Operations not modeled.

Construction Off-road Equipment Mitigation - Construction Mitigation - Tier 4 Equipment and water exposed area 2x/day (55% PM10 and PM2.5 reduction).

Off-road Equipment - Construction equipment for Substation Construction per Table 2-5 from the Project Description. 1 Generator Set added for Batch Plant (250 KW ~ 335hp), assumed running 24 hours per day.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	65340	0
tblAreaCoating	Area_Nonresidential_Interior	196020	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	6.00	84.00
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	NT24E	1.85	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	T24E	0.62	0.00
tblEnergyUse	T24NG	3.20	0.00
tblOffRoadEquipment	HorsePower	84.00	335.00
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.20	0.20
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.37	0.37

tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.31	0.31
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblSolidWaste	SolidWasteGenerationRate	162.04	0.00
tblTripsAndVMT	VendorTripNumber	0.00	50.00
tblTripsAndVMT	WorkerTripNumber	60.00	40.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	30,219,750.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	7.8946	83.6982	57.0951	0.1597	0.6662	3.3341	4.0003	0.1843	3.1279	3.3121	0.0000	16,662.4328	16,662.4328	2.7021	0.0000	16,729.9844
Maximum	**7.8946**	**83.6982**	**57.0951**	**0.1597**	**0.6662**	**3.3341**	**4.0003**	**0.1843**	**3.1279**	**3.3121**	**0.0000**	**16,662.4328**	**16,662.4328**	**2.7021**	**0.0000**	**16,729.9844**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	2.3383	15.7133	81.8303	0.1597	0.6662	0.2760	0.9422	0.1843	0.2739	0.4582	0.0000	16,662.4328	16,662.4328	2.7021	0.0000	16,729.9844
Maximum	**2.3383**	**15.7133**	**81.8303**	**0.1597**	**0.6662**	**0.2760**	**0.9422**	**0.1843**	**0.2739**	**0.4582**	**0.0000**	**16,662.4328**	**16,662.4328**	**2.7021**	**0.0000**	**16,729.9844**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**70.38**	**81.23**	**-43.32**	**0.00**	**0.00**	**91.72**	**76.45**	**0.00**	**91.24**	**86.17**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.7978	1.2000e-004	0.0134	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0286	0.0286	8.0000e-005		0.0305
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**2.7978**	**1.2000e-004**	**0.0134**	**0.0000**	**0.0000**	**5.0000e-005**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**5.0000e-005**		**0.0286**	**0.0286**	**8.0000e-005**	**0.0000**	**0.0305**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.7978	1.2000e-004	0.0134	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0286	0.0286	8.0000e-005		0.0305
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**2.7978**	**1.2000e-004**	**0.0134**	**0.0000**	**0.0000**	**5.0000e-005**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**5.0000e-005**		**0.0286**	**0.0286**	**8.0000e-005**	**0.0000**	**0.0305**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Substation Construction & Improvements	Grading	8/1/2020	11/26/2020	5	84	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Humboldt Wind Energy - Substations - Humboldt County, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Substation Construction & Improvements	Bore/Drill Rigs	2	8.00	221	0.50
Substation Construction & Improvements	Cranes	2	4.00	231	0.29
Substation Construction & Improvements	Forklifts	1	8.00	89	0.20
Substation Construction & Improvements	Rubber Tired Loaders	1	6.00	203	0.36
Substation Construction & Improvements	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Substation Construction & Improvements	Other Construction Equipment	5	6.00	172	0.42
Substation Construction & Improvements	Plate Compactors	3	4.00	8	0.43
Substation Construction & Improvements	Aerial Lifts	2	6.00	63	0.31
Substation Construction & Improvements	Other Construction Equipment	3	4.00	172	0.42
Substation Construction & Improvements	Rollers	1	4.00	80	0.38
Substation Construction & Improvements	Generator Sets	1	24.00	335	0.74

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Substation Construction & Improv	24	40.00	50.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Substation Construction & Improvements - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	7.3139	76.7416	52.9824	0.1424		3.2884	3.2884		3.0842	3.0842		14,870.5131	14,870.5131	2.6102		14,935.7687
Total	**7.3139**	**76.7416**	**52.9824**	**0.1424**		**3.2884**	**3.2884**		**3.0842**	**3.0842**		**14,870.5131**	**14,870.5131**	**2.6102**		**14,935.7687**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2781	6.6835	1.7922	0.0141	0.3376	0.0426	0.3802	0.0971	0.0407	0.1379		1,477.5023	1,477.5023	0.0694		1,479.2367
Worker	0.3025	0.2731	2.3206	3.1800e-003	0.3286	3.1700e-003	0.3318	0.0872	2.9300e-003	0.0901		314.4174	314.4174	0.0225		314.9790
Total	**0.5807**	**6.9566**	**4.1128**	**0.0173**	**0.6662**	**0.0458**	**0.7120**	**0.1843**	**0.0437**	**0.2280**		**1,791.9197**	**1,791.9197**	**0.0918**		**1,794.2157**

3.2 Substation Construction & Improvements - 2020

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7576	8.7567	77.7175	0.1424		0.2302	0.2302		0.2302	0.2302	0.0000	14,870.5131	14,870.5131	2.6102		14,935.7687
Total	**1.7576**	**8.7567**	**77.7175**	**0.1424**		**0.2302**	**0.2302**		**0.2302**	**0.2302**	**0.0000**	**14,870.5131**	**14,870.5131**	**2.6102**		**14,935.7687**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2781	6.6835	1.7922	0.0141	0.3376	0.0426	0.3802	0.0971	0.0407	0.1379		1,477.5023	1,477.5023	0.0694		1,479.2367
Worker	0.3025	0.2731	2.3206	3.1800e-003	0.3286	3.1700e-003	0.3318	0.0872	2.9300e-003	0.0901		314.4174	314.4174	0.0225		314.9790
Total	**0.5807**	**6.9566**	**4.1128**	**0.0173**	**0.6662**	**0.0458**	**0.7120**	**0.1843**	**0.0437**	**0.2280**		**1,791.9197**	**1,791.9197**	**0.0918**		**1,794.2157**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.479770	0.048374	0.208987	0.137651	0.044565	0.007238	0.014792	0.045519	0.003292	0.001618	0.005746	0.001515	0.000933

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.7978	1.2000e-004	0.0134	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0286	0.0286	8.0000e-005		0.0305
Unmitigated	2.7978	1.2000e-004	0.0134	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0286	0.0286	8.0000e-005		0.0305

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.7966					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.2500e-003	1.2000e-004	0.0134	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0286	0.0286	8.0000e-005		0.0305
Total	**2.7978**	**1.2000e-004**	**0.0134**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0286**	**0.0286**	**8.0000e-005**		**0.0305**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	2.7966					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.2500e-003	1.2000e-004	0.0134	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0286	0.0286	8.0000e-005		0.0305
Total	**2.7978**	**1.2000e-004**	**0.0134**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0286**	**0.0286**	**8.0000e-005**		**0.0305**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Humboldt Wind Energy - Substations

Humboldt County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	130.68	1000sqft	3.00	130,680.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	103
Climate Zone	1			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Humboldt Wind Energy - Substations - Humboldt County, Annual

Project Characteristics -

Land Use - 3 acres for new substation. Upgrades to existing Bridgeville substation.

Construction Phase - Construction equipment and duration identified in Table 2-5 of Project Description.

Off-road Equipment -

Trips and VMT - Trips per data in Tables 2-2 and 2-4 from Project Description.

Demolition -

Grading - Balanced site.

Vehicle Trips - Construction only - no operations modeled.

Consumer Products - Construction only. Operations not modeled.

Area Coating - Construction only. Operations not modeled.

Landscape Equipment - Construction only. Operations not modeled.

Energy Use - Construction only. Operations not modeled.

Water And Wastewater - Construction only. Operations not modeled.

Solid Waste - Construction only. Operations not modeled.

Construction Off-road Equipment Mitigation - Construction Mitigation - Tier 4 Equipment and water exposed area 2x/day (55% PM10 and PM2.5 reduction).

Off-road Equipment - Construction equipment for Substation Construction per Table 2-5 from the Project Description. 1 Generator Set added for Batch Plant (250 KW ~ 335hp), assumed running 24 hours per day.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	65340	0
tblAreaCoating	Area_Nonresidential_Interior	196020	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	8.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	6.00	84.00
tblEnergyUse	LightingElect	1.81	0.00
tblEnergyUse	NT24E	1.85	0.00
tblEnergyUse	NT24NG	0.31	0.00
tblEnergyUse	T24E	0.62	0.00
tblEnergyUse	T24NG	3.20	0.00
tblOffRoadEquipment	HorsePower	84.00	335.00
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.29	0.29
tblOffRoadEquipment	LoadFactor	0.20	0.20
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.37	0.37

tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.31	0.31
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Cranes
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Loaders
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Plate Compactors
tblOffRoadEquipment	OffRoadEquipmentType		Aerial Lifts
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblSolidWaste	SolidWasteGenerationRate	162.04	0.00
tblTripsAndVMT	VendorTripNumber	0.00	50.00
tblTripsAndVMT	WorkerTripNumber	60.00	40.00
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.00
tblWater	IndoorWaterUseRate	30,219,750.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.3330	3.5163	2.4064	6.7000e-003	0.0264	0.1401	0.1665	7.3600e-003	0.1314	0.1388	0.0000	634.2420	634.2420	0.1031	0.0000	636.8191
Maximum	**0.3330**	**3.5163**	**2.4064**	**6.7000e-003**	**0.0264**	**0.1401**	**0.1665**	**7.3600e-003**	**0.1314**	**0.1388**	**0.0000**	**634.2420**	**634.2420**	**0.1031**	**0.0000**	**636.8191**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.0996	0.6609	3.4453	6.7000e-003	0.0264	0.0116	0.0380	7.3600e-003	0.0115	0.0189	0.0000	634.2414	634.2414	0.1031	0.0000	636.8184
Maximum	**0.0996**	**0.6609**	**3.4453**	**6.7000e-003**	**0.0264**	**0.0116**	**0.0380**	**7.3600e-003**	**0.0115**	**0.0189**	**0.0000**	**634.2414**	**634.2414**	**0.1031**	**0.0000**	**636.8184**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**70.09**	**81.20**	**-43.17**	**0.00**	**0.00**	**91.71**	**77.16**	**0.00**	**91.23**	**86.39**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5105	1.0000e-005	1.2100e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3400e-003	2.3400e-003	1.0000e-005	0.0000	2.4900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.5105**	**1.0000e-005**	**1.2100e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.3400e-003**	**2.3400e-003**	**1.0000e-005**	**0.0000**	**2.4900e-003**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5105	1.0000e-005	1.2100e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3400e-003	2.3400e-003	1.0000e-005	0.0000	2.4900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.5105**	**1.0000e-005**	**1.2100e-003**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.3400e-003**	**2.3400e-003**	**1.0000e-005**	**0.0000**	**2.4900e-003**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Substation Construction & Improvements	Grading	8/1/2020	11/26/2020	5	84	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Substation Construction & Improvements	Bore/Drill Rigs	2	8.00	221	0.50
Substation Construction & Improvements	Cranes	2	4.00	231	0.29
Substation Construction & Improvements	Forklifts	1	8.00	89	0.20
Substation Construction & Improvements	Rubber Tired Loaders	1	6.00	203	0.36
Substation Construction & Improvements	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Substation Construction & Improvements	Other Construction Equipment	5	6.00	172	0.42
Substation Construction & Improvements	Plate Compactors	3	4.00	8	0.43
Substation Construction & Improvements	Aerial Lifts	2	6.00	63	0.31
Substation Construction & Improvements	Other Construction Equipment	3	4.00	172	0.42
Substation Construction & Improvements	Rollers	1	4.00	80	0.38
Substation Construction & Improvements	Generator Sets	1	24.00	335	0.74

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Substation Construction & Improv	24	40.00	50.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Substation Construction & Improvements - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3072	3.2232	2.2253	5.9800e-003		0.1381	0.1381		0.1295	0.1295	0.0000	566.5927	566.5927	0.0995	0.0000	569.0791
Total	**0.3072**	**3.2232**	**2.2253**	**5.9800e-003**		**0.1381**	**0.1381**		**0.1295**	**0.1295**	**0.0000**	**566.5927**	**566.5927**	**0.0995**	**0.0000**	**569.0791**

3.2 Substation Construction & Improvements - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0120	0.2807	0.0800	5.9000e-004	0.0135	1.8100e-003	0.0153	3.9000e-003	1.7300e-003	5.6300e-003	0.0000	55.6628	55.6628	2.7600e-003	0.0000	55.7318
Worker	0.0138	0.0124	0.1011	1.3000e-004	0.0130	1.3000e-004	0.0131	3.4500e-003	1.2000e-004	3.5800e-003	0.0000	11.9866	11.9866	8.7000e-004	0.0000	12.0082
Total	**0.0258**	**0.2931**	**0.1812**	**7.2000e-004**	**0.0264**	**1.9400e-003**	**0.0284**	**7.3500e-003**	**1.8500e-003**	**9.2100e-003**	**0.0000**	**67.6493**	**67.6493**	**3.6300e-003**	**0.0000**	**67.7401**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0738	0.3678	3.2641	5.9800e-003		9.6700e-003	9.6700e-003		9.6700e-003	9.6700e-003	0.0000	566.5920	566.5920	0.0995	0.0000	569.0784
Total	**0.0738**	**0.3678**	**3.2641**	**5.9800e-003**		**9.6700e-003**	**9.6700e-003**		**9.6700e-003**	**9.6700e-003**	**0.0000**	**566.5920**	**566.5920**	**0.0995**	**0.0000**	**569.0784**

3.2 Substation Construction & Improvements - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0120	0.2807	0.0800	5.9000e-004	0.0135	1.8100e-003	0.0153	3.9000e-003	1.7300e-003	5.6300e-003	0.0000	55.6628	55.6628	2.7600e-003	0.0000	55.7318
Worker	0.0138	0.0124	0.1011	1.3000e-004	0.0130	1.3000e-004	0.0131	3.4500e-003	1.2000e-004	3.5800e-003	0.0000	11.9866	11.9866	8.7000e-004	0.0000	12.0082
Total	**0.0258**	**0.2931**	**0.1812**	**7.2000e-004**	**0.0264**	**1.9400e-003**	**0.0284**	**7.3500e-003**	**1.8500e-003**	**9.2100e-003**	**0.0000**	**67.6493**	**67.6493**	**3.6300e-003**	**0.0000**	**67.7401**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.479770	0.048374	0.208987	0.137651	0.044565	0.007238	0.014792	0.045519	0.003292	0.001618	0.005746	0.001515	0.000933

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.5105	1.0000e-005	1.2100e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3400e-003	2.3400e-003	1.0000e-005	0.0000	2.4900e-003
Unmitigated	0.5105	1.0000e-005	1.2100e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3400e-003	2.3400e-003	1.0000e-005	0.0000	2.4900e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5104					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1000e-004	1.0000e-005	1.2100e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3400e-003	2.3400e-003	1.0000e-005	0.0000	2.4900e-003
Total	**0.5105**	**1.0000e-005**	**1.2100e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.3400e-003**	**2.3400e-003**	**1.0000e-005**	**0.0000**	**2.4900e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5104					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1000e-004	1.0000e-005	1.2100e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3400e-003	2.3400e-003	1.0000e-005	0.0000	2.4900e-003
Total	**0.5105**	**1.0000e-005**	**1.2100e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.3400e-003**	**2.3400e-003**	**1.0000e-005**	**0.0000**	**2.4900e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation