Appendix A:
Air Quality, GHG Emissions, and Energy Supporting Information

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Appendix A: Air Quality, Greenhouse Gas Emissions, and Energy Supporting Information

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Millbrae Electronic Billboards CalEEMod Notes

Note 1. Land uses and sizes associated with development of the proposed project are drawn from the Submittal Package from the Applicant dated December 3, 2021, the project description dated February 9, 2022, and Applicant-provided information received on February 18, 2022. The project site would displace a 6-foot diameter of asphalt.

Land uses utilized in the model represent the following:

Industrial > User Identified Industrial > 0.1 acres (28 square feet) = Proposed new billboard

Note 2. According to Applicant-provided information, dated February 16, 2022, project construction is anticipated to occur from September 1, 2022, to September 5, 2022. In addition, the applicant indicated that a 6-foot diameter of asphalt would be displaced. CalEEMod default construction activities and durations were adjusted to reflect this information.

Note 3. The number of off-site trips assumed to occur during construction of the proposed project is shown in "Construction/Trips and VMT". Additional trips were included to account for the transport of material for the construction of billboards.

Note 4. BAAQMD *Basic Construction Mitigation Measures Recommended For All Proposed Projects* was applied to this project. This includes watering exposed areas at minimum twice per day and limiting construction vehicle speeds to 15 miles per hour on unpaved roads.

Project Construction Emissions

Model File: Millbrae Billboard Project - Annual - San Mateo County, Annual
Timestamp: Date: 2/28/2022 10:49 AM

Annual Construction Emissions (tons)

Year	Activity	ROG	NO_x	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
	on site	0.00	0.00	0.00	0.00
	off site	0.00	0.00	-	-
2022	**Demolition**	**0.00**	**0.00**	**0.00**	**0.00**
	on site	0.00	0.00	0.00	0.00
	off site	-	-	-	-
2022	**Trenching**	**0.00**	**0.00**	**0.00**	**0.00**
	on site	0.00	0.01	0.00	0.00
	off site	0.00	0.00	0.00	0.00
2022	**Grading**	**0.00**	**0.01**	**0.00**	**0.00**
	on site	0.00	0.00	0.00	0.00
	off site	-	0.00	-	-
2022	**Building Construction**	**0.00**	**0.00**	**0.00**	**0.00**
	on site	0.00	0.01	0.00	0.00
	off site	0.00	0.00	-	-
2022	**Paving**	**0.00**	**0.01**	**0.00**	**0.00**
	Total On Site	**0.00**	**0.02**	**0.00**	**0.00**
	Total Off Site	**0.00**	**0.00**	**0.00**	**0.00**

*Note: All zeros displayed in the above table represent emission values which are below 0.005 tons per year and have subsequently rounded down. All true zero values are represented with "-".

Average Daily Construction Emissions (lbs/day)

	ROG	NO_x	PM_{10} (Exhaust)	$PM_{2.5}$ (Exhaust)
Total Emissions (tons)	0.00	0.02	0.00	0.00
Total Emissions (lbs)	4.10	41.22	1.96	1.82
Average Daily Emissions (lbs/day)[1]	**0.82**	**8.24**	**0.39**	**0.36**
BAAQMD Significance Thresholds	54	54	82	54
Project Exceeds Threshold?	**No**	**No**	**No**	**No**

Notes: Total emissions (lbs) are divided by the total nonoverlapping construction workdays (5 days).

Project GHG Emissions Summary

Construction - GHG Emissions

Millbrae Billborad - Construction, San Mateo County, Annual

Date: 2/28/2022 10:49 AM

Emissions Source	Construction CO_2e
	Metric Tons
Demolition	0.6
Trenching	0.1
Grading	1.0
Building Construction (Installation of Billboard)	0.5
Paving	1.1
Total	**3.3**
Amortized Over 30 Years	0

400 East Millbrae Billboard Project Energy Use Summary

Summary of Energy Use During Construction

Construction vehicle fuel	46	gallons (gasoline, diesel)
Construction equipment fuel	224	gallons (diesel)
Total construction fuel	271	gallons (gasoline, diesel)
Construction office electricity	119	kilowatt hours

Summary of Energy Use During Operation

Assumed annual electricity consumption	52,400	kilowatt hours

Construction Vehicle Fuel Calculations

California Air Resource Board (ARB). EMFAC2017 Web Database. Website: https://arb.ca.gov/emfac/2017/. Accessed March 3, 2022.

VMT = Vehicle Miles Traveled
FE = Fuel Economy

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SAN MATEO
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day

										Calculations	
Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT (mi/day)	Trips	Fuel_Consumption (1000 gallons/day)	FE (mi/gallon)	VMT*FE
SAN MATEO	2022	HHDT	Aggregated	Aggregated	GAS	2.7778527	472.7149845	55.57928	0.109947	4.299470204	2032.423991
SAN MATEO	2022	HHDT	Aggregated	Aggregated	DSL	1215.4198	107659.4003	10539.66	18.45916	5.832301416	627902.073
SAN MATEO	2022	LDA	Aggregated	Aggregated	GAS	285883.4	8730359.062	1356969	267.3569	32.65432454	28503978.2
SAN MATEO	2022	LDA	Aggregated	Aggregated	DSL	3168.2169	96975.1318	14978.02	1.919874	50.51119309	4898329.607
SAN MATEO	2022	LDT1	Aggregated	Aggregated	GAS	41432.753	1266107.523	196720.5	44.21424	28.63574043	36255926.38
SAN MATEO	2022	LDT1	Aggregated	Aggregated	DSL	16.252476	284.3032588	56.05197	0.011274	25.21697401	7169.267888
SAN MATEO	2022	LDT2	Aggregated	Aggregated	GAS	132267.45	4056131.421	631991.8	151.2281	26.82127757	108790626.7
SAN MATEO	2022	LDT2	Aggregated	Aggregated	DSL	1027.6831	34465.37893	5067.758	0.921702	37.39319408	1288770.603
SAN MATEO	2022	LHDT1	Aggregated	Aggregated	GAS	8860.6807	296397.6133	132010.9	34.64523	8.555222277	2535747.465
SAN MATEO	2022	LHDT1	Aggregated	Aggregated	DSL	5881.241	218648.2671	73978.61	11.4794	19.04700739	4164595.16
SAN MATEO	2022	LHDT2	Aggregated	Aggregated	GAS	1238.5784	40924.28113	18452.97	5.455546	7.501408313	306989.7427
SAN MATEO	2022	LHDT2	Aggregated	Aggregated	DSL	2262.7526	83013.71862	28462.58	4.900854	16.93862166	1406137.972
SAN MATEO	2022	MHDT	Aggregated	Aggregated	GAS	956.09752	56310.1573	19129.6	11.3698	4.952609207	278882.2035
SAN MATEO	2022	MHDT	Aggregated	Aggregated	DSL	5059.2804	329296.5244	52181.07	33.36473	9.869600697	3250025.207

Worker

Sum of VMT*FE (Column BI)	**436324800.7**
Total VMT	**14184322.82**
Weighted Average FE	**30.76105968**

Vendor

Sum of VMT*FE (Column BI)	**12572312.25**
Total VMT	**1132722.677**
Weighted Average FE	**11.09919709**

Haul

Sum of VMT*FE (Column BI)	**629934.497**
Total VMT	**108132.1153**
Weighted Average FE	**5.825600426**

Project Construction Assumptions

Source: AQ/GHG Appendix, CalEEMod Output
Millbrae Billborad - Construction, San Mateo County, Annual
Date: 2/28/2022 10:49 AM

Construction Schedule	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days
	Demolition	Demolition	9/1/2022	9/1/2022	7	1
	Trenching	Trenching	9/2/2022	9/2/2022	7	1
	Grading	Grading	9/3/2022	9/3/2022	7	1
	Building Construction (Installation of I	Building Construction	9/4/2022	9/4/2022	7	1
	Paving	Paving	9/4/2022	9/5/2022	7	1
		Total Schedule				**5**

Trips and VMT	Phase Name	Trips per Day			Total Trips					Trips per Phase			VMT per Phase			Fuel Consumption (gallons)		
		Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Vendor Vel	Num Days	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trips	Vendor Trips	Hauling Trips	Worker Trips	Vendor Trips	Hauling Trips
	Site Preparation	10	2	0	10.8	7.3	20	LD_Mix	1	10	2	0	108	15	0	3.51	1.32	0.00
	Grading	8	2	8	10.8	7.3	20	LD_Mix	1	8	2	8	86	15	160	2.81	1.32	27.46
	Building Construction	0	2	0	10.8	7.3	20	LD_Mix	1	0	2	0	0	15	0	0.00	1.32	0.00
	Paving	18	2	0	10.8	7.3	20	LD_Mix	1	18	2	0	194	15	0	6.32	1.32	0.00
	Architectural Coating	3	0	0	10.8	7.3	20	LD_Mix	1	3	0	0	32	0	0	1.05	0.00	0.00

On-site Total Construction VMT (miles)
640

On-Site Total Fuel Consumption (gallons)
46

Construction Equipment Fuel Calculation

Source: AQ/GHG Appendix, CalEEMod Output
Millbrae Billborad - Construction, San Mateo County, Annual
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Construction Schedule	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days
	Demolition	Demolition	9/1/2022	9/1/2022	7	1
	Trenching	Trenching	9/2/2022	9/2/2022	7	1
	Grading	Grading	9/3/2022	9/3/2022	7	1
	Building Construction (Installation of Billboard)	Building Construction	9/4/2022	9/4/2022	7	1
	Paving	Paving	9/4/2022	9/5/2022	7	1

Construction Equipment	Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor	Number of Days	HP Hours	Diesel Fuel Usage
	Paving	Cement and Mortar Mixers	4	6	9	0.56	1	120.96	6.05
	Demolition	Concrete/Industrial Saws	1	8	81	0.73	1	473.04	23.65
	Building Construction	Cranes	1	4	231	0.29	1	267.96	13.40
	Building Construction	Forklifts	2	6	89	0.2	1	213.60	10.68
	Grading	Graders	1	6	187	0.41	1	460.02	23.00
	Paving	Pavers	1	7	130	0.42	1	382.20	19.11
	Paving	Rollers	1	7	80	0.38	1	212.80	10.64
	Demolition	Rubber Tired Dozers	1	1	247	0.4	1	98.80	4.94
	Grading	Rubber Tired Dozers	1	6	247	0.4	1	592.80	29.64
	Building Construction	Tractors/Loaders/Backhoes	2	8	97	0.37	1	574.24	28.71
	Demolition	Tractors/Loaders/Backhoes	2	6	97	0.37	1	430.68	21.53
	Grading	Tractors/Loaders/Backhoes	1	7	97	0.37	1	251.23	12.56
	Paving	Tractors/Loaders/Backhoes	1	7	97	0.37	1	251.23	12.56
	Trench	Trenchers	1	8	63	0.31	1	156.24	7.81
							Construction Equipment Fuel Consumption		**224.29 gallons**

Notes:
Equipment assumptions are provided in the CalEEMod output files.
Fuel usage estimate of 0.05 gallons of diesel fuel per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3E.
South Coast Air Quality Management District. 1993. Air Quality Handbook, Table A9-3E.
Website: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook.

Construction Office Electricity Calculation

Energy Appendix: CalEEMod Typical Construction Trailer

Millbrae Billborad - Construction Trailer, San Mateo County, Annual

Date: 3/4/2022 7:33 AM

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
General Office Building	8668.8		0.8021	1.3000e-004	2.0000e-005	0.8100
Total			**0.8021**	**1.3000e-004**	**2.0000e-005**	**0.8100**

kWh/yr = kilowatt hours per year

Energy by Land Use - Electricity

Annual	8,669 kWh/yr
Total Over Construction	**119 kWh**

Total Construction Schedule

Start	9/1/2022
End	9/5/2022
Total Working Days	5
Years	0.01

Electricity Consumption Assumptions and Associated GHG Emissions

Assumed annual electricity consumption for the proposed project: 52,400 kWh (or 52.4 MWh).

Emission Intensity Factors:[1]		
CO_2	210	lbs./MWh
CH_4	0.029	lbs./MWh
N_2O	0.00617	lbs./MWh

Annual Emissions at 52.4 MWh:		
CO_2	11,004.00	lbs.
CH_4	1.52	lbs.
N_2O	0.32	lbs.

100-Year Global Warming Potentials:[2]	
CO_2	1
CH_4	298
N_2O	25

Annual Metric Tons of CO_2e:		
CO_2	4.99	MT CO_2e
CH_4	0.21	MT CO_2e
N_2O	0.00	MT CO_2e
Total:	**5.20**	**MT CO_2e**

Notes:
Pounds to metric ton conversion rate of 2,204.62 lbs/metric ton used.
CO_2 Intensity Factor to match Pacific Gas and Electric's (PG&E) 2019 emissions rates, the latest that are publicly available.[1] The intensity factor utilized in the model is 206 pounds of CO_2 per megawatt-hour delivered. Other intensity factors (CH_4 & N_2O) are drawn from the California Emissions Estimator Model (CalEEMod) given values.

Sources:
1 Pacific Gas & Electric. 2020. Corporate Responsibility and Sustainability Report 2020. Website: https://www.pgecorp.com/corp_responsibility/reports/2020/assets/PGE_CRSR_2020.pdf. Accessed March 4, 2022.

2 Intergovernmental Panel on Climate Change (IPCC). 2014. Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp. Website: https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf. Accessed March 4, 2022.

Outfront Millbrae Billboard Project - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Outfront Millbrae Billboard Project

San Mateo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	0.10	28.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Note 1

Construction Phase - Note 2

Grading - Note

Off-road Equipment - Trenching is needed based on the applicant.

Trips and VMT - Note 3

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	10.00	1.00
tblConstructionPhase	NumDays	2.00	1.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstructionPhase	NumDays	100.00	1.00
tblConstructionPhase	NumDays	5.00	1.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	PhaseEndDate	9/14/2022	9/1/2022
tblConstructionPhase	PhaseEndDate	9/16/2022	9/3/2022
tblConstructionPhase	PhaseEndDate	2/3/2023	9/4/2022
tblConstructionPhase	PhaseEndDate	2/10/2023	9/5/2022
tblConstructionPhase	PhaseStartDate	9/15/2022	9/3/2022
tblConstructionPhase	PhaseStartDate	9/17/2022	9/4/2022
tblConstructionPhase	PhaseStartDate	2/4/2023	9/4/2022
tblGrading	AcresOfGrading	0.75	1.50
tblLandUse	LandUseSquareFeet	0.00	28.00
tblLandUse	LotAcreage	0.00	0.10
tblOffRoadEquipment	HorsePower	78.00	63.00
tblOffRoadEquipment	LoadFactor	0.50	0.31
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblTripsAndVMT	HaulingTripNumber	0.00	8.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00

2.0 Emissions Summary

Outfront Millbrae Billboard Project - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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					
2022	2.0700e-003	0.0206	0.0189	4.0000e-005	3.3800e-003	9.8000e-004	4.3600e-003	1.4100e-003	9.1000e-004	2.3200e-003	0.0000	3.2228	3.2228	7.9000e-004	7.0000e-005	3.2625
Maximum	**2.0700e-003**	**0.0206**	**0.0189**	**4.0000e-005**	**3.3800e-003**	**9.8000e-004**	**4.3600e-003**	**1.4100e-003**	**9.1000e-004**	**2.3200e-003**	**0.0000**	**3.2228**	**3.2228**	**7.9000e-004**	**7.0000e-005**	**3.2625**

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					
2022	2.0700e-003	0.0206	0.0189	4.0000e-005	3.3800e-003	9.8000e-004	4.3600e-003	1.4100e-003	9.1000e-004	2.3200e-003	0.0000	3.2228	3.2228	7.9000e-004	7.0000e-005	3.2625
Maximum	**2.0700e-003**	**0.0206**	**0.0189**	**4.0000e-005**	**3.3800e-003**	**9.8000e-004**	**4.3600e-003**	**1.4100e-003**	**9.1000e-004**	**2.3200e-003**	**0.0000**	**3.2228**	**3.2228**	**7.9000e-004**	**7.0000e-005**	**3.2625**

	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**

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

Outfront Millbrae Billboard Project - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

1	**9-1-2022**	**9-30-2022**	0.0226	0.0226
		Highest	0.0226	0.0226

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	1.2000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	**1.2000e-004**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	1.2000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
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	**1.2000e-004**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

	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	Demolition	Demolition	9/1/2022	9/1/2022	7	1	
2	Trench	Trenching	9/2/2022	9/2/2022	7	1	
3	Grading	Grading	9/3/2022	9/3/2022	7	1	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Building Construction	Building Construction	9/4/2022	9/4/2022	7	1	
5	Paving	Paving	9/4/2022	9/5/2022	7	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.5

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
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Graders	1	6.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Trench	Trenchers	1	8.00	63	0.31

Trips and VMT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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
Demolition	4	10.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	2.00	8.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	0.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trench	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2022

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	3.5000e-004	3.2100e-003	3.7300e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.6000e-004	1.6000e-004	0.0000	0.5207	0.5207	1.0000e-004	0.0000	0.5231
Total	**3.5000e-004**	**3.2100e-003**	**3.7300e-003**	**1.0000e-005**		**1.7000e-004**	**1.7000e-004**		**1.6000e-004**	**1.6000e-004**	**0.0000**	**0.5207**	**0.5207**	**1.0000e-004**	**0.0000**	**0.5231**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.0000	6.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0221	0.0221	0.0000	0.0000	0.0231
Worker	1.0000e-005	1.0000e-005	1.0000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0304	0.0304	0.0000	0.0000	0.0307
Total	**1.0000e-005**	**7.0000e-005**	**1.2000e-004**	**0.0000**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0525**	**0.0525**	**0.0000**	**0.0000**	**0.0538**

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	3.5000e-004	3.2100e-003	3.7300e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.6000e-004	1.6000e-004	0.0000	0.5207	0.5207	1.0000e-004	0.0000	0.5231
Total	**3.5000e-004**	**3.2100e-003**	**3.7300e-003**	**1.0000e-005**		**1.7000e-004**	**1.7000e-004**		**1.6000e-004**	**1.6000e-004**	**0.0000**	**0.5207**	**0.5207**	**1.0000e-004**	**0.0000**	**0.5231**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.0000	6.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0221	0.0221	0.0000	0.0000	0.0231
Worker	1.0000e-005	1.0000e-005	1.0000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0304	0.0304	0.0000	0.0000	0.0307
Total	**1.0000e-005**	**7.0000e-005**	**1.2000e-004**	**0.0000**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0525**	**0.0525**	**0.0000**	**0.0000**	**0.0538**

3.3 Trench - 2022

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	9.0000e-005	8.4000e-004	6.5000e-004	0.0000		6.0000e-005	6.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0738	0.0738	2.0000e-005	0.0000	0.0744
Total	**9.0000e-005**	**8.4000e-004**	**6.5000e-004**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.0738**	**0.0738**	**2.0000e-005**	**0.0000**	**0.0744**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	3.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	9.1200e-003	9.1200e-003	0.0000	0.0000	9.2000e-003
Total	**0.0000**	**0.0000**	**3.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**9.1200e-003**	**9.1200e-003**	**0.0000**	**0.0000**	**9.2000e-003**

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	9.0000e-005	8.4000e-004	6.5000e-004	0.0000		6.0000e-005	6.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.0738	0.0738	2.0000e-005	0.0000	0.0744
Total	**9.0000e-005**	**8.4000e-004**	**6.5000e-004**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.0738**	**0.0738**	**2.0000e-005**	**0.0000**	**0.0744**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	3.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	9.1200e-003	9.1200e-003	0.0000	0.0000	9.2000e-003
Total	**0.0000**	**0.0000**	**3.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**9.1200e-003**	**9.1200e-003**	**0.0000**	**0.0000**	**9.2000e-003**

3.4 Grading - 2022

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					3.0500e-003	0.0000	3.0500e-003	1.3300e-003	0.0000	1.3300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.4000e-004	6.0000e-003	2.9700e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.4000e-004	2.4000e-004	0.0000	0.6191	0.6191	2.0000e-004	0.0000	0.6241
Total	**5.4000e-004**	**6.0000e-003**	**2.9700e-003**	**1.0000e-005**	**3.0500e-003**	**2.6000e-004**	**3.3100e-003**	**1.3300e-003**	**2.4000e-004**	**1.5700e-003**	**0.0000**	**0.6191**	**0.6191**	**2.0000e-004**	**0.0000**	**0.6241**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	2.0000e-005	7.8000e-004	2.2000e-004	0.0000	7.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.2849	0.2849	3.0000e-005	5.0000e-005	0.2993
Vendor	0.0000	6.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0221	0.0221	0.0000	0.0000	0.0231
Worker	1.0000e-005	1.0000e-005	8.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0243	0.0243	0.0000	0.0000	0.0245
Total	**3.0000e-005**	**8.5000e-004**	**3.2000e-004**	**0.0000**	**1.1000e-004**	**1.0000e-005**	**1.1000e-004**	**3.0000e-005**	**1.0000e-005**	**3.0000e-005**	**0.0000**	**0.3314**	**0.3314**	**3.0000e-005**	**5.0000e-005**	**0.3469**

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					3.0500e-003	0.0000	3.0500e-003	1.3300e-003	0.0000	1.3300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.4000e-004	6.0000e-003	2.9700e-003	1.0000e-005		2.6000e-004	2.6000e-004		2.4000e-004	2.4000e-004	0.0000	0.6191	0.6191	2.0000e-004	0.0000	0.6241
Total	**5.4000e-004**	**6.0000e-003**	**2.9700e-003**	**1.0000e-005**	**3.0500e-003**	**2.6000e-004**	**3.3100e-003**	**1.3300e-003**	**2.4000e-004**	**1.5700e-003**	**0.0000**	**0.6191**	**0.6191**	**2.0000e-004**	**0.0000**	**0.6241**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	2.0000e-005	7.8000e-004	2.2000e-004	0.0000	7.0000e-005	1.0000e-005	7.0000e-005	2.0000e-005	1.0000e-005	2.0000e-005	0.0000	0.2849	0.2849	3.0000e-005	5.0000e-005	0.2993
Vendor	0.0000	6.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0221	0.0221	0.0000	0.0000	0.0231
Worker	1.0000e-005	1.0000e-005	8.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0243	0.0243	0.0000	0.0000	0.0245
Total	**3.0000e-005**	**8.5000e-004**	**3.2000e-004**	**0.0000**	**1.1000e-004**	**1.0000e-005**	**1.1000e-004**	**3.0000e-005**	**1.0000e-005**	**3.0000e-005**	**0.0000**	**0.3314**	**0.3314**	**3.0000e-005**	**5.0000e-005**	**0.3469**

3.5 Building Construction - 2022

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	3.4000e-004	3.5100e-003	3.5800e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.7000e-004	1.7000e-004	0.0000	0.5007	0.5007	1.6000e-004	0.0000	0.5048
Total	**3.4000e-004**	**3.5100e-003**	**3.5800e-003**	**1.0000e-005**		**1.9000e-004**	**1.9000e-004**		**1.7000e-004**	**1.7000e-004**	**0.0000**	**0.5007**	**0.5007**	**1.6000e-004**	**0.0000**	**0.5048**

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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	0.0000	6.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0221	0.0221	0.0000	0.0000	0.0231
Worker	0.0000	0.0000	0.0000	0.0000	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**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0221**	**0.0221**	**0.0000**	**0.0000**	**0.0231**

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	3.4000e-004	3.5100e-003	3.5800e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.7000e-004	1.7000e-004	0.0000	0.5007	0.5007	1.6000e-004	0.0000	0.5048
Total	**3.4000e-004**	**3.5100e-003**	**3.5800e-003**	**1.0000e-005**		**1.9000e-004**	**1.9000e-004**		**1.7000e-004**	**1.7000e-004**	**0.0000**	**0.5007**	**0.5007**	**1.6000e-004**	**0.0000**	**0.5048**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.0000	6.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0221	0.0221	0.0000	0.0000	0.0231
Worker	0.0000	0.0000	0.0000	0.0000	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**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0221**	**0.0221**	**0.0000**	**0.0000**	**0.0231**

3.6 Paving - 2022

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	6.5000e-004	5.9200e-003	7.0300e-003	1.0000e-005		3.0000e-004	3.0000e-004		2.8000e-004	2.8000e-004	0.0000	0.9397	0.9397	2.7000e-004	0.0000	0.9465
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.5000e-004**	**5.9200e-003**	**7.0300e-003**	**1.0000e-005**		**3.0000e-004**	**3.0000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**0.9397**	**0.9397**	**2.7000e-004**	**0.0000**	**0.9465**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.0000	1.2000e-004	4.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0442	0.0442	0.0000	1.0000e-005	0.0462
Worker	4.0000e-005	3.0000e-005	3.7000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1095	0.1095	0.0000	0.0000	0.1104
Total	**4.0000e-005**	**1.5000e-004**	**4.1000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1537**	**0.1537**	**0.0000**	**1.0000e-005**	**0.1566**

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	6.5000e-004	5.9200e-003	7.0300e-003	1.0000e-005		3.0000e-004	3.0000e-004		2.8000e-004	2.8000e-004	0.0000	0.9397	0.9397	2.7000e-004	0.0000	0.9465
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.5000e-004**	**5.9200e-003**	**7.0300e-003**	**1.0000e-005**		**3.0000e-004**	**3.0000e-004**		**2.8000e-004**	**2.8000e-004**	**0.0000**	**0.9397**	**0.9397**	**2.7000e-004**	**0.0000**	**0.9465**

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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	0.0000	1.2000e-004	4.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0442	0.0442	0.0000	1.0000e-005	0.0462
Worker	4.0000e-005	3.0000e-005	3.7000e-004	0.0000	1.4000e-004	0.0000	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1095	0.1095	0.0000	0.0000	0.1104
Total	**4.0000e-005**	**1.5000e-004**	**4.1000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1537**	**0.1537**	**0.0000**	**1.0000e-005**	**0.1566**

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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	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
User Defined Industrial	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.492711	0.069436	0.224270	0.138474	0.024483	0.005815	0.009990	0.002247	0.001578	0.000636	0.027452	0.000440	0.002469

5.0 Energy Detail

Historical Energy Use: N

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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					
User Defined Industrial	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**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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					
User Defined Industrial	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	tons/yr	MT/yr			
User Defined Industrial	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
User Defined Industrial	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	1.2000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	1.2000e-004	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

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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	1.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**1.2000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	1.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.1000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**1.2000e-004**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
User Defined Industrial	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
User Defined Industrial	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
	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
User Defined Industrial	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	tons/yr	MT/yr			
User Defined Industrial	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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	0.72	1000sqft	0.02	720.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2022
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Note 1

Construction Phase - Note 2

Off-road Equipment - Trenching is needed based on the applicant.

Trips and VMT - Note 3

Grading - Note

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	100.00	5.00
tblConstructionPhase	NumDaysWeek	5.00	7.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstructionPhase	PhaseEndDate	4/11/2022	9/5/2022
tblConstructionPhase	PhaseStartDate	11/23/2021	9/1/2022

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					
2022	1.7200e-003	0.0176	0.0179	3.0000e-005	0.0000	9.3000e-004	9.3000e-004	0.0000	8.6000e-004	8.6000e-004	0.0000	2.5037	2.5037	8.1000e-004	0.0000	2.5239
Maximum	**1.7200e-003**	**0.0176**	**0.0179**	**3.0000e-005**	**0.0000**	**9.3000e-004**	**9.3000e-004**	**0.0000**	**8.6000e-004**	**8.6000e-004**	**0.0000**	**2.5037**	**2.5037**	**8.1000e-004**	**0.0000**	**2.5239**

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					
2022	1.7200e-003	0.0176	0.0179	3.0000e-005	0.0000	9.3000e-004	9.3000e-004	0.0000	8.6000e-004	8.6000e-004	0.0000	2.5037	2.5037	8.1000e-004	0.0000	2.5239
Maximum	**1.7200e-003**	**0.0176**	**0.0179**	**3.0000e-005**	**0.0000**	**9.3000e-004**	**9.3000e-004**	**0.0000**	**8.6000e-004**	**8.6000e-004**	**0.0000**	**2.5037**	**2.5037**	**8.1000e-004**	**0.0000**	**2.5239**

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	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
4	**8-23-2022**	**9-30-2022**	0.0193	0.0193
		Highest	0.0193	0.0193

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	3.1900e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	7.0000e-005	6.8000e-004	5.7000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	1.5379	1.5379	1.4000e-004	3.0000e-005	1.5502
Mobile	2.2200e-003	2.3200e-003	0.0214	4.0000e-005	4.6500e-003	3.0000e-005	4.6800e-003	1.2400e-003	3.0000e-005	1.2700e-003	0.0000	4.1154	4.1154	2.8000e-004	1.8000e-004	4.1773
Waste						0.0000	0.0000		0.0000	0.0000	0.1360	0.0000	0.1360	8.0400e-003	0.0000	0.3369
Water						0.0000	0.0000		0.0000	0.0000	0.0406	0.0895	0.1301	4.1800e-003	1.0000e-004	0.2645
Total	**5.4800e-003**	**3.0000e-003**	**0.0220**	**4.0000e-005**	**4.6500e-003**	**8.0000e-005**	**4.7300e-003**	**1.2400e-003**	**8.0000e-005**	**1.3200e-003**	**0.1766**	**5.7427**	**5.9193**	**0.0126**	**3.1000e-004**	**6.3289**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	3.1900e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Energy	7.0000e-005	6.8000e-004	5.7000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	1.5379	1.5379	1.4000e-004	3.0000e-005	1.5502
Mobile	2.2200e-003	2.3200e-003	0.0214	4.0000e-005	4.6500e-003	3.0000e-005	4.6800e-003	1.2400e-003	3.0000e-005	1.2700e-003	0.0000	4.1154	4.1154	2.8000e-004	1.8000e-004	4.1773
Waste						0.0000	0.0000		0.0000	0.0000	0.1360	0.0000	0.1360	8.0400e-003	0.0000	0.3369
Water						0.0000	0.0000		0.0000	0.0000	0.0406	0.0895	0.1301	4.1800e-003	1.0000e-004	0.2645
Total	**5.4800e-003**	**3.0000e-003**	**0.0220**	**4.0000e-005**	**4.6500e-003**	**8.0000e-005**	**4.7300e-003**	**1.2400e-003**	**8.0000e-005**	**1.3200e-003**	**0.1766**	**5.7427**	**5.9193**	**0.0126**	**3.1000e-004**	**6.3289**

	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	Building Construction	Building Construction	9/1/2022	9/5/2022	7	5	

Acres of Grading (Site Preparation Phase): 0

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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
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Building Construction	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
Building Construction	5	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2022

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	1.7200e-003	0.0176	0.0179	3.0000e-005		9.3000e-004	9.3000e-004		8.6000e-004	8.6000e-004	0.0000	2.5037	2.5037	8.1000e-004	0.0000	2.5239
Total	**1.7200e-003**	**0.0176**	**0.0179**	**3.0000e-005**		**9.3000e-004**	**9.3000e-004**		**8.6000e-004**	**8.6000e-004**	**0.0000**	**2.5037**	**2.5037**	**8.1000e-004**	**0.0000**	**2.5239**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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**	**0.0000**	**0.0000**

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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	1.7200e-003	0.0176	0.0179	3.0000e-005		9.3000e-004	9.3000e-004		8.6000e-004	8.6000e-004	0.0000	2.5037	2.5037	8.1000e-004	0.0000	2.5239
Total	**1.7200e-003**	**0.0176**	**0.0179**	**3.0000e-005**		**9.3000e-004**	**9.3000e-004**		**8.6000e-004**	**8.6000e-004**	**0.0000**	**2.5037**	**2.5037**	**8.1000e-004**	**0.0000**	**2.5239**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	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**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	2.2200e-003	2.3200e-003	0.0214	4.0000e-005	4.6500e-003	3.0000e-005	4.6800e-003	1.2400e-003	3.0000e-005	1.2700e-003	0.0000	4.1154	4.1154	2.8000e-004	1.8000e-004	4.1773
Unmitigated	2.2200e-003	2.3200e-003	0.0214	4.0000e-005	4.6500e-003	3.0000e-005	4.6800e-003	1.2400e-003	3.0000e-005	1.2700e-003	0.0000	4.1154	4.1154	2.8000e-004	1.8000e-004	4.1773

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	7.01	1.59	0.50	12,686	12,686
Total	7.01	1.59	0.50	12,686	12,686

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 Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.492711	0.069436	0.224270	0.138474	0.024483	0.005815	0.009990	0.002247	0.001578	0.000636	0.027452	0.000440	0.002469

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	0.8021	0.8021	1.3000e-004	2.0000e-005	0.8100
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.8021	0.8021	1.3000e-004	2.0000e-005	0.8100
NaturalGas Mitigated	7.0000e-005	6.8000e-004	5.7000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7358	0.7358	1.0000e-005	1.0000e-005	0.7402
NaturalGas Unmitigated	7.0000e-005	6.8000e-004	5.7000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7358	0.7358	1.0000e-005	1.0000e-005	0.7402

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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 Office Building	13788	7.0000e-005	6.8000e-004	5.7000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7358	0.7358	1.0000e-005	1.0000e-005	0.7402
Total		**7.0000e-005**	**6.8000e-004**	**5.7000e-004**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.7358**	**0.7358**	**1.0000e-005**	**1.0000e-005**	**0.7402**

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 Office Building	13788	7.0000e-005	6.8000e-004	5.7000e-004	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7358	0.7358	1.0000e-005	1.0000e-005	0.7402
Total		**7.0000e-005**	**6.8000e-004**	**5.7000e-004**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.7358**	**0.7358**	**1.0000e-005**	**1.0000e-005**	**0.7402**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
General Office Building	8668.8		0.8021	1.3000e-004	2.0000e-005	0.8100
Total			**0.8021**	**1.3000e-004**	**2.0000e-005**	**0.8100**

Mitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
General Office Building	8668.8		0.8021	1.3000e-004	2.0000e-005	0.8100
Total			**0.8021**	**1.3000e-004**	**2.0000e-005**	**0.8100**

6.0 Area Detail

6.1 Mitigation Measures Area

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	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	3.1900e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Unmitigated	3.1900e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005

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	3.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.8100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Total	**3.1900e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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	3.8000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.8100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.0000e-005	1.0000e-005	0.0000	0.0000	1.0000e-005
Total	**3.1900e-003**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.0000**	**1.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated		0.1301	4.1800e-003	1.0000e-004	0.2645
Unmitigated		0.1301	4.1800e-003	1.0000e-004	0.2645

Outfront Millbrae Billboard Project - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
General Office Building	0.127968 / 0.0784322		0.1301	4.1800e-003	1.0000e-004	0.2645
Total			**0.1301**	**4.1800e-003**	**1.0000e-004**	**0.2645**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
General Office Building	0.127968 / 0.0784322		0.1301	4.1800e-003	1.0000e-004	0.2645
Total			**0.1301**	**4.1800e-003**	**1.0000e-004**	**0.2645**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated		0.1360	8.0400e-003	0.0000	0.3369
Unmitigated		0.1360	8.0400e-003	0.0000	0.3369

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
General Office Building	0.67		0.1360	8.0400e-003	0.0000	0.3369
Total			**0.1360**	**8.0400e-003**	**0.0000**	**0.3369**

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
General Office Building	0.67		0.1360	8.0400e-003	0.0000	0.3369
Total			**0.1360**	**8.0400e-003**	**0.0000**	**0.3369**

9.0 Operational Offroad

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

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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

Appendix B:
Biological Resources Supporting Information

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Table 1: Special-status Plant Species Evaluation

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]
	USFWS[1]	CDFW[2]	CNPS[3]		
Dicots					
Amsinckia lunaris Bent-flowered fiddleneck	—	—	1B.2	Cismontane woodland, valley and foothill grassland, coastal bluff scrub. Elevation: 3-795 m. Blooming period: March-June	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.
Arctostaphylos montaraensis Montara manzanita	—	—	1B.2	Chaparral, coastal scrub on slopes on ridges. Elevation: 270-460 m. Blooming period: January-March	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.
Arctostaphylos regismontana Kings Mountain manzanita	—	—	1B.2	Broadleafed upland forest, chaparral, north coast coniferous forest on granitic or sandstone outcrops. Elevation: 240-7005 m. Blooming period: January- April	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.
Collinsia multicolor San Francisco collinsia	—	—	1B.2	Closed-cone coniferous forest, coastal scrub on decomposed shale mixed with humus; sometimes found on serpentine. Elevation: 10 – 275 m. Blooming period: March-May	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.
Dirca occidentalis Western leatherwood	—	—	1B.2	Broadleafed upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, north coast coniferous forest, riparian forest, riparian woodland. On brushy slopes, mesic sites; mostly in mixed evergreen and foothill woodland communities. Elevation: 20-640 m. Blooming period: November- March	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.
Eriophyllum latilobum San Mateo woolly sunflower	FE	SE	1B.1	Cismontane woodland, coastal scrub, lower montane coniferous forest. Often on roadcuts; found on and off of serpentine. Elevation: 30-610 m. Blooming period: May-June	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]
	USFWS[1]	CDFW[2]	CNPS[3]		
Helianthella castanea Diablo helianthella	—	—	1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Usually in chaparral/oak woodland interface in rocky, azonal soils. Often in partial shade. Elevation: 45-1070 m. Blooming period: March-June	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.
Hemizonia congesta ssp. congesta Congested-headed hayfield tarplant	—	—	1B.2	Valley and foothill grassland. Grassy valleys and hills, often in fallow fields; sometimes along roadsides. Elevation: 5-520 m. Blooming period: April-November	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.
Hesperevax sparsiflora var. brevifolia Short-leaved evax	—	—	1B.2	Coastal bluff scrub, coastal dunes, coastal prairie. Sandy bluffs and flats. Elevation: 0-640 m. Blooming period: March-June	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.
Hesperolinon congestum Marin western flax	FT	ST	1B.1	Chaparral, valley and foothill grassland. In serpentine barrens and in serpentine grassland and chaparral. Elevation: 60-400 m. Blooming period: April-July	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.
Horkelia marinensis Point Reyes horkelia	—	—	1B.2	Coastal dunes, coastal prairie, coastal scrub. Sandy flats and dunes near coast; in grassland or scrub plant communities. Elevation: 2-775 m. Blooming period: May-September	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.
Lessingia arachnoidea Crystal Springs lessingia	—	—	1B.2	Coastal sage scrub, valley and foothill grassland, cismontane woodland. Grassy slopes on serpentine; sometimes on roadsides. Elevation: 90-200 m. Blooming period: July-October	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.
Malacothamnus arcuatus arcuate bush-mallow	—	—	1B.2	Chaparral, cismontane woodland. Often found growing on gravelly alluvium substrates. Elevation: 0–735 m. Blooming period: April–September	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]
	USFWS[1]	CDFW[2]	CNPS[3]		
Monolopia gracilens Woodland woollythreads	—	—	1B.2	Chaparral, valley and foothill grassland, cismontane woodland, broadleafed upland forest, North Coast coniferous forest. Grassy sites, in openings; sandy to rocky soils. Often seen on serpentine after burns but may have only weak affinity to serpentine. Elevation: 120-975 m. Blooming period: March-July	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.
Pentachaeta bellidiflora White-rayed pentachaeta	FE	SE	1B.1	Valley and foothill grassland, cismontane woodland. Open dry rocky slopes and grassy areas, often on soils derived from serpentine bedrock. Elevation: 35-610 m. Blooming period: March-May	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.
Plagiobothrys chorisianus var. chorisianus Choris' popcornflower	—	—	1B.2	Chaparral, coastal scrub, coastal prairie. Mesic sites. Elevation: 5-705 m. Blooming period: March-June	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.
Polemonium carneum Oregon polemonium	—	—	2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest. Elevation: 15-1525 m. Blooming period: April-September	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.
Silene scouleri ssp. scouleri Scouler's catchfly	—	—	2B.2	Coastal bluff scrub, coastal prairie, valley and foothill grassland. Elevation: 5-315 m. Blooming period: June-August	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.
Silene verecunda ssp. verecunda San Francisco campion	—	—	1B.2	Coastal scrub, valley and foothill grassland, coastal bluff scrub, chaparral, coastal prairie. Often on mudstone or shale; one site on serpentine. Elevation: 30-645 m. Blooming period: March-June	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.
Triphysaria floribunda San Francisco owl's-clover	—	—	1B.2	Coastal prairie, coastal scrub, valley and foothill grassland. Elevation: 1-150 m. Blooming period: April-June	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.

Scientific Name Common Name	Status USFWS[1]	Status CDFW[2]	Status CNPS[3]	Habitat Description[4]	Potential to Occur and Rationale[5]
Monocots					
Allium peninsulare var. franciscanum Franciscan onion	—	—	1B.2	Cismontane woodland, valley and foothill grassland. Clay soils; often on serpentine; sometimes on volcanics. Dry hillsides. Elevation: 5-320 m. Blooming period: May-June	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.
Fritillaria biflora var. ineziana Hillsborough chocolate lily	—	—	1B.1	Cismontane woodland, valley and foothill grassland. Likely only on serpentine. Elevation: 90-170 m. Blooming period: March-April	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.
Fritillaria liliacea Fragrant fritillary	—	—	1B.2	Coastal scrub, valley and foothill grassland, coastal prairie, cismontane woodland. Often on serpentine; various soils reported though usually on clay, in grassland. Elevation: 3-385 m. Blooming period: February-April	**Not present.** The project site is entirely developed and does not contain suitable habitat to support this species.

Code Designations

[1] Federal Status: 2022 USFWS Listing

- **ESU** = Evolutionary Significant Unit is a distinctive population.
- **FE** = Listed as endangered under the FESA.
- **FT** = Listed as threatened under the FESA.
- **FC** = Candidate for listing (threatened or endangered) under FESA.
- **FD** = Delisted in accordance with the FESA.
- **FPD** = Federally Proposed to be Delisted.
- **MBTA** = protected by the Migratory Bird Treaty Act
- **—** = Not federally listed

[2] State Status: 2022 CDFW Listing

- **SE** = Listed as endangered under the CESA.
- **ST** = Listed as threatened under the CESA.
- **SSC** = Species of Special Concern as identified by the CDFW.
- **FP** = Listed as fully protected under FGC.
- **CFG** = FGC =protected by FGC 3503.5
- **CR** = Rare in California.
- **—** = Not state listed

[3] CNPS: 2022 CNPS Listing

- **Rank 1A** = Plants species that presumed extinct in California.
- **Rank 1B** = Plant species that are rare, threatened, or endangered in California and elsewhere.
- **Rank 2** = Plant species that are rare, threatened, or endangered in California, but more common elsewhere.
- **Rank 3** = Plants about which we need more information—A Review List
- **Rank 4** = Plants of limited distribution—A Watch List

Blooming period: Months in parentheses are uncommon.

[4] **Habitat Description**: Habitat description adapted from CNDDB and CNPS online inventory or other specified source.
[5] **Potential to Occur and Rationale**: Location of recorded species occurrences determined by geospatial information from BIOS 5 or other specified source*.

Scientific Name Common Name	Status			Habitat Description[4]	Potential to Occur and Rationale[5]
	USFWS[1]	CDFW[2]	CNPS[3]		
Sources: California Department of Fish and Wildlife (CDFW). 2022. CNDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx. Accessed February 9, 2022. California Native Plant Society (CNPS). 2022. California Native Plant Society Rare and Endangered Plant Inventory. Website: http://www.rareplants.cnps.org/. Accessed February 9, 2022. California Department of Fish and Wildlife (CDFW). 2022. Biogeographic Information and Observation System (BIOS 5). Website: https://map.dfg.ca.gov/bios/. Accessed February 9, 2022.					

Table 2: Special-status Wildlife Species Evaluation

Scientific Name Common Name	Status		Habitat Description[3]	Potential to Occur and Rationale[4]
	USFWS[1]	CDFW[2]		
Amphibians				
Dicamptodon ensatus California giant salamander	—	— SSC	Known from wet coastal forests near streams and seeps from Mendocino County south to Monterey County, and east to Napa County. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.	**None.** The project site is entirely developed and does not contain aquatic habitat to support this species.
Rana boylii Foothill yellow-legged frog	—	SE SSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	**None.** The project site is entirely developed and does not contain aquatic habitat to support this species.
Rana draytonii California red-legged frog	FT	— SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	**None.** The project site is entirely developed and does not contain aquatic habitat to support this species.
Birds				
Athene cunicularia burrowing owl	— MBTA	— SSC	Found in open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. A subterranean nester, dependent upon burrowing mammals, most notably the California ground squirrel.	**None.** The project site is entirely developed and does not contain suitable habitat to support this species.
Brachyramphus marmoratus Marbled murrelet	FE MBTA	SE	Feeds near-shore; nests inland along coast from Eureka to Oregon border and from Half Moon Bay to Santa Cruz. Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas-fir.	**None.** The project site is entirely developed and does not contain suitable nesting habitat to support this species.
Falco peregrinus anatum American peregrine falcon	— MBTA	— FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	**None.** The project site does not contain suitable nesting or foraging habitat to support this species. The project site is entirely developed and is utilized as an active water treatment facility.
Geothlypis trichas sinuosa Saltmarsh common yellowthroat	— MBTA	— SSC	Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**None.** The project site is entirely developed and does not contain aquatic habitat or emergent vegetation to support this species.

Scientific Name Common Name	Status USFWS[1]	Status CDFW[2]	Habitat Description[3]	Potential to Occur and Rationale[4]
Melospiza melodia pusillula Alameda song sparrow	— MBTA	— SSC	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits Salicornia marshes; nests low in Grindelia bushes (high enough to escape high tides) and in Salicornia.	**None.** The project site is entirely developed and does not contain marsh habitat to support this species.
Rallus obsoletus obsoletus California Ridgway's rail	FE MBTA	SE FP	Salt water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs	**None.** The project site is entirely developed and does not contain pickleweed habitat to support this species.
Fish				
Oncorhynchus mykiss irideus (pop. 8) steelhead (central California coast DPS)	FT	—	DPS includes all naturally spawned populations of steelhead (and their progeny) in streams from the Russian River to Aptos Creek, Santa Cruz County, California (inclusive). Also includes the drainages of San Francisco and San Pablo Bays.	**None.** The project site does not contain aquatic habitat to support this species.
Spirinchus thaleichthys Longfin smelt	FC	ST	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	**None.** The project site does not contain aquatic habitat to support this species.
Insects				
Callophrys mossii bayensis San Bruno elfin butterfly	FE	—	Coastal, mountainous areas with grassy ground cover, mainly in the vicinity of San Bruno Mountain, San Mateo County. Colonies are located on steep, north-facing slopes within the fog belt. Larval host plant is Sedum spathulifolium.	**None.** The project site does not contain coastal or mountainous habitat or the host plant to support this species.
Icaricia icarioides missionensis Mission blue butterfly	FE	—	Inhabits grasslands of the San Francisco peninsula. Three larval host plants: Lupinus albifrons, L. variicolor, and L. formosus, of which L. albifrons is favored.	**None.** The project site does not contain grassland habitat or the host plants to support this species.
Speyeria zerene myrtleae Myrtle's silverspot butterfly	FE	—	Restricted to the foggy, coastal dunes/hills of the Point Reyes peninsula; extirpated from coastal San Mateo County. Larval foodplant thought to be Viola adunca.	**None.** The project site does not contain coastal dune habitat or the host plant to support this species.

Scientific Name Common Name	Status USFWS[1]	Status CDFW[2]	Habitat Description[3]	Potential to Occur and Rationale[4]
Mammals				
Antrozous pallidus pallid bat	—	— SSC	Inhabits low elevation (below 1,830 m./6,000 feet) rocky arid deserts and canyonlands, shrub-steppe grasslands, karst formations, and higher elevation coniferous forests (below 2,100 m./7,000 feet). Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, trees, and various human structures such as bridges, barns, porches, bat boxes, and human-occupied as well as vacant buildings.	**None.** The project would not demolish the existing man-made structures. The project site is located adjacent to US-101 and San Francisco International Airport resulting in increased noise levels which further preclude this species.
Corynorhinus townsendii Townsend's big-eared bat	—	— SSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	**None.** The project would not demolish the existing man-made structures. The project site is located adjacent to US-101 and San Francisco International Airport resulting in increased noise levels which further preclude this species.
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	—	— SSC	Forest habitats of moderate canopy and moderate to dense understory. May prefer chaparral and redwood habitats. Constructs nests of shredded grass, leaves and other material. May be limited by availability of nest-building materials.	**None.** The project site does not contain chaparral or redwood habitats to support this species.
Reptiles				
Emys marmorata western pond turtle	—	— SSC	Occurs in ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	**None.** The project site does not contain aquatic habitat to support this species.
Thamnophis sirtalis tetrataenia San Francisco gartersnake	FE	SE FP	Vicinity of freshwater marshes, ponds and slow-moving streams in San Mateo County and extreme northern Santa Cruz County. Prefers dense cover and water depths of at least one foot. Upland areas near water are also very important.	**None.** The project site does not contain aquatic habitat to support this species.

Scientific Name Common Name	Status USFWS[1]	Status CDFW[2]	Habitat Description[3]	Potential to Occur and Rationale[4]

Code Designations

[1] Federal Status: 2022 USFWS Listing		[2] State Status: 2022 CDFW Listing	
ESU	= Evolutionary Significant Unit is a distinctive population.	**SE**	= Listed as endangered under the CESA.
FE	= Listed as endangered under the FESA.	**ST**	= Listed as threatened under the CESA.
FT	= Listed as threatened under the FESA.	**SSC**	= Species of Special Concern as identified by the CDFW.
FC	= Candidate for listing (threatened or endangered) under FESA.	**FP**	= Listed as fully protected under FGC.
FD	= Delisted in accordance with the FESA.	**CFG**	= FGC =protected by FGC 3503.5
FPD	= Federally Proposed to be Delisted.	**CE**	= Candidate endangered under the CESA.
MBTA	= protected by the Migratory Bird Treaty Act	**WL**	= Species monitored by CDFW "Watch List".
—	= Not federally listed	**—**	= Not state listed

[3] **Habitat Description**: Habitat description adapted from CNDDB or other specified source*.
[4] **Potential to Occur and Rationale**: Location of recorded species occurrences determined by geospatial information from BIOS 5 or other specified source*.

Sources:

California Department of Fish and Wildlife (CDFW). 2022. CNDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx. Accessed February 9, 2022.
California Department of Fish and Wildlife (CDFW). 2022. Biogeographic Information and Observation System (BIOS 5). Website: https://map.dfg.ca.gov/bios/. Accessed February 9, 2022.

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Montara Mountain (3712254) OR Hunters Point (3712263) OR San Francisco South (3712264) OR Half Moon Bay (3712244) OR San Mateo (3712253) OR Woodside (3712243))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Acanthomintha duttonii San Mateo thorn-mint	PDLAM01040	Endangered	Endangered	G1	S1	1B.1
Adela oplerella Opler's longhorn moth	IILEE0G040	None	None	G2	S2	
Agrostis blasdalei Blasdale's bent grass	PMPOA04060	None	None	G2	S2	1B.2
Allium peninsulare var. franciscanum Franciscan onion	PMLIL021R1	None	None	G5T2	S2	1B.2
Ambystoma californiense pop. 1 California tiger salamander - central California DPS	AAAAA01181	Threatened	Threatened	G2G3	S3	WL
Amsinckia lunaris bent-flowered fiddleneck	PDBOR01070	None	None	G3	S3	1B.2
Aneides niger Santa Cruz black salamander	AAAAD01070	None	None	G3	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Arctostaphylos andersonii Anderson's manzanita	PDERI04030	None	None	G2	S2	1B.2
Arctostaphylos franciscana Franciscan manzanita	PDERI040J3	Endangered	None	GHC	S1	1B.1
Arctostaphylos imbricata San Bruno Mountain manzanita	PDERI040L0	None	Endangered	G1	S1	1B.1
Arctostaphylos montana ssp. ravenii Presidio manzanita	PDERI040J2	Endangered	Endangered	G3T1	S1	1B.1
Arctostaphylos montaraensis Montara manzanita	PDERI042W0	None	None	G1	S1	1B.2
Arctostaphylos pacifica Pacific manzanita	PDERI040Z0	None	Endangered	G1	S1	1B.1
Arctostaphylos regismontana Kings Mountain manzanita	PDERI041C0	None	None	G2	S2	1B.2
Astragalus pycnostachyus var. pycnostachyus coastal marsh milk-vetch	PDFAB0F7B2	None	None	G2T2	S2	1B.2
Astragalus tener var. tener alkali milk-vetch	PDFAB0F8R1	None	None	G2T1	S1	1B.2
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Banksula incredula incredible harvestman	ILARA14100	None	None	G1	S1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
Bombus occidentalis western bumble bee	IIHYM24250	None	None	G2G3	S1	
Brachyramphus marmoratus marbled murrelet	ABNNN06010	Threatened	Endangered	G3	S2	
Caecidotea tomalensis Tomales isopod	ICMAL01220	None	None	G2	S2S3	
Calicina minor Edgewood blind harvestman	ILARA13020	None	None	G1	S1	
Callophrys mossii bayensis San Bruno elfin butterfly	IILEPE2202	Endangered	None	G4T1	S3	
Carex comosa bristly sedge	PMCYP032Y0	None	None	G5	S2	2B.1
Centromadia parryi ssp. parryi pappose tarplant	PDAST4R0P2	None	None	G3T2	S2	1B.2
Charadrius nivosus nivosus western snowy plover	ABNNB03031	Threatened	None	G3T3	S2	SSC
Chloropyron maritimum ssp. palustre Point Reyes salty bird's-beak	PDSCR0J0C3	None	None	G4?T2	S2	1B.2
Chorizanthe cuspidata var. cuspidata San Francisco Bay spineflower	PDPGN04081	None	None	G2T1	S1	1B.2
Chorizanthe robusta var. robusta robust spineflower	PDPGN040Q2	Endangered	None	G2T1	S1	1B.1
Cicindela hirticollis gravida sandy beach tiger beetle	IICOL02101	None	None	G5T2	S2	
Cirsium andrewsii Franciscan thistle	PDAST2E050	None	None	G3	S3	1B.2
Cirsium fontinale var. fontinale fountain thistle	PDAST2E161	Endangered	Endangered	G2T1	S1	1B.1
Cirsium occidentale var. compactum compact cobwebby thistle	PDAST2E1Z1	None	None	G3G4T2	S2	1B.2
Collinsia corymbosa round-headed Chinese-houses	PDSCR0H060	None	None	G1	S1	1B.2
Collinsia multicolor San Francisco collinsia	PDSCR0H0B0	None	None	G2	S2	1B.2
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
Danaus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	Candidate	None	G4T2T3	S2S3	
Dicamptodon ensatus California giant salamander	AAAAH01020	None	None	G3	S2S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Dipodomys venustus venustus Santa Cruz kangaroo rat	AMAFD03042	None	None	G4T1	S1	
Dirca occidentalis western leatherwood	PDTHY03010	None	None	G2	S2	1B.2
Dufourea stagei Stage's dufourine bee	IIHYM22010	None	None	G1G2	S1	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Erethizon dorsatum North American porcupine	AMAFJ01010	None	None	G5	S3	
Eriophyllum latilobum San Mateo woolly sunflower	PDAST3N060	Endangered	Endangered	G1	S1	1B.1
Eucyclogobius newberryi tidewater goby	AFCQN04010	Endangered	None	G3	S3	
Eumetopias jubatus Steller sea lion	AMAJC03010	Delisted	None	G3	S2	
Euphydryas editha bayensis Bay checkerspot butterfly	IILEPK4055	Threatened	None	G5T1	S1	
Falco columbarius merlin	ABNKD06030	None	None	G5	S3S4	WL
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
Fritillaria biflora var. ineziana Hillsborough chocolate lily	PMLIL0V0M1	None	None	G3G4T1	S1	1B.1
Fritillaria liliacea fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
Geothlypis trichas sinuosa saltmarsh common yellowthroat	ABPBX1201A	None	None	G5T3	S3	SSC
Gilia capitata ssp. chamissonis blue coast gilia	PDPLM040B3	None	None	G5T2	S2	1B.1
Gilia millefoliata dark-eyed gilia	PDPLM04130	None	None	G2	S2	1B.2
Grindelia hirsutula var. maritima San Francisco gumplant	PDAST470D3	None	None	G5T1Q	S1	3.2
Helianthella castanea Diablo helianthella	PDAST4M020	None	None	G2	S2	1B.2
Hemizonia congesta ssp. congesta congested-headed hayfield tarplant	PDAST4R065	None	None	G5T2	S2	1B.2
Hesperevax sparsiflora var. brevifolia short-leaved evax	PDASTE5011	None	None	G4T3	S3	1B.2
Hesperolinon congestum Marin western flax	PDLIN01060	Threatened	Threatened	G1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Heteranthera dubia water star-grass	PMPON03010	None	None	G5	S2	2B.2
Horkelia cuneata var. sericea Kellogg's horkelia	PDROS0W043	None	None	G4T1?	S1?	1B.1
Horkelia marinensis Point Reyes horkelia	PDROS0W0B0	None	None	G2	S2	1B.2
Hydrochara rickseckeri Ricksecker's water scavenger beetle	IICOL5V010	None	None	G2?	S2?	
Hydroporus leechi Leech's skyline diving beetle	IICOL55040	None	None	G1?	S1?	
Hypogymnia schizidiata island tube lichen	NLT0032640	None	None	G2G3	S2	1B.3
Icaricia icarioides missionensis Mission blue butterfly	IILEPG801A	Endangered	None	G5T1	S1	
Icaricia icarioides pheres Pheres blue butterfly	IILEPG8019	None	None	G5TX	SX	
Ischnura gemina San Francisco forktail damselfly	IIODO72010	None	None	G2	S2	
Lasiurus cinereus hoary bat	AMACC05030	None	None	G3G4	S4	
Lasthenia californica ssp. macrantha perennial goldfields	PDAST5L0C5	None	None	G3T2	S2	1B.2
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Layia carnosa beach layia	PDAST5N010	Endangered	Endangered	G2	S2	1B.1
Leptosiphon croceus coast yellow leptosiphon	PDPLM09170	None	Endangered	G1	S1	1B.1
Leptosiphon rosaceus rose leptosiphon	PDPLM09180	None	None	G1	S1	1B.1
Lessingia arachnoidea Crystal Springs lessingia	PDAST5S0C0	None	None	G2	S2	1B.2
Lessingia germanorum San Francisco lessingia	PDAST5S010	Endangered	Endangered	G1	S1	1B.1
Lichnanthe ursina bumblebee scarab beetle	IICOL67020	None	None	G2	S2	
Limnanthes douglasii ssp. ornduffii Ornduff's meadowfoam	PDLIM02039	None	None	G4T1	S1	1B.1
Malacothamnus arcuatus arcuate bush-mallow	PDMAL0Q0E0	None	None	G2Q	S2	1B.2
Melospiza melodia pusillula Alameda song sparrow	ABPBXA301S	None	None	G5T2?	S2S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Microcina edgewoodensis Edgewood Park micro-blind harvestman	ILARA47010	None	None	G1	S1	
Monardella sinuata ssp. nigrescens northern curly-leaved monardella	PDLAM18162	None	None	G3T2	S2	1B.2
Monolopia gracilens woodland woollythreads	PDAST6G010	None	None	G3	S3	1B.2
Mylopharodon conocephalus hardhead	AFCJB25010	None	None	G3	S3	SSC
Myotis thysanodes fringed myotis	AMACC01090	None	None	G4	S3	
Nannopterum auritum double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	AMAFF08082	None	None	G5T2T3	S2S3	SSC
Northern Coastal Salt Marsh Northern Coastal Salt Marsh	CTT52110CA	None	None	G3	S3.2	
Northern Maritime Chaparral Northern Maritime Chaparral	CTT37C10CA	None	None	G1	S1.2	
Nyctinomops macrotis big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
Oncorhynchus mykiss irideus pop. 8 steelhead - central California coast DPS	AFCHA0209G	Threatened	None	G5T2T3Q	S2S3	
Pentachaeta bellidiflora white-rayed pentachaeta	PDAST6X030	Endangered	Endangered	G1	S1	1B.1
Plagiobothrys chorisianus var. chorisianus Choris' popcornflower	PDBOR0V061	None	None	G3T1Q	S1	1B.2
Polemonium carneum Oregon polemonium	PDPLM0E050	None	None	G3G4	S2	2B.2
Polygonum marinense Marin knotweed	PDPGN0L1C0	None	None	G2Q	S2	3.1
Pomatiopsis californica Pacific walker	IMGASJ9020	None	None	G1	S1	
Potentilla hickmanii Hickman's cinquefoil	PDROS1B370	Endangered	Endangered	G1	S1	1B.1
Rallus obsoletus obsoletus California Ridgway's rail	ABNME05011	Endangered	Endangered	G3T1	S1	FP
Rana boylii foothill yellow-legged frog	AAABH01050	None	Endangered	G3	S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Reithrodontomys raviventris salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	FP

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Sanicula maritima adobe sanicle	PDAPI1Z0D0	None	Rare	G2	S2	1B.1
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
Serpentine Bunchgrass Serpentine Bunchgrass	CTT42130CA	None	None	G2	S2.2	
Silene scouleri ssp. scouleri Scouler's catchfly	PDCAR0U1MC	None	None	G5T4T5	S2S3	2B.2
Silene verecunda ssp. verecunda San Francisco campion	PDCAR0U213	None	None	G5T1	S1	1B.2
Speyeria callippe callippe callippe silverspot butterfly	IILEPJ6091	Endangered	None	G5T1	S1	
Speyeria zerene myrtleae Myrtle's silverspot butterfly	IILEPJ608C	Endangered	None	G5T1	S1	
Spirinchus thaleichthys longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	
Suaeda californica California seablite	PDCHE0P020	Endangered	None	G1	S1	1B.1
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thamnophis sirtalis tetrataenia San Francisco gartersnake	ARADB3613B	Endangered	Endangered	G5T2Q	S2	FP
Trachusa gummifera San Francisco Bay Area leaf-cutter bee	IIHYM80010	None	None	G1	S1	
Trifolium amoenum two-fork clover	PDFAB40040	Endangered	None	G1	S1	1B.1
Trifolium hydrophilum saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Triphysaria floribunda San Francisco owl's-clover	PDSCR2T010	None	None	G2?	S2?	1B.2
Triquetrella californica coastal triquetrella	NBMUS7S010	None	None	G2	S2	1B.2
Tryonia imitator mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	
Usnea longissima Methuselah's beard lichen	NLLEC5P420	None	None	G4	S4	4.2
Valley Needlegrass Grassland Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	

Record Count: 123

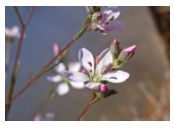
CNPS Rare Plant Inventory

California Native Plant Society

Search Results

9 matches found. Click on scientific name for details

Search Criteria: CRPR is one of [**1A:1B:2A:2B:3**] Fed List is one of [**FE:FT:FC**] **and** State List is one of [**CE:CT:CR:CE:CT**] , 9-Quad include [**3712263:3712264:3712244:3712253:3712243:3712254**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	PHOTO
Acanthomintha duttonii	San Mateo thorn-mint	Lamiaceae	annual herb	Apr-Jun	FE	CE	G1	S1	1B.1	 © 2011 Aaron Schusteff
Arctostaphylos montana ssp. *ravenii*	Presidio manzanita	Ericaceae	perennial evergreen shrub	Feb-Mar	FE	CE	G3T1	S1	1B.1	 © 2019 Susan McDougall
Cirsium fontinale var. *fontinale*	fountain thistle	Asteraceae	perennial herb	(Apr)May-Oct	FE	CE	G2T1	S1	1B.1	No Photo Available
Eriophyllum latilobum	San Mateo woolly sunflower	Asteraceae	perennial herb	May-Jun	FE	CE	G1	S1	1B.1	No Photo Available
Hesperolinon congestum	Marin western flax	Linaceae	annual herb	Apr-Jul	FT	CT	G1	S1	1B.1	 © 2009 Neal Kramer
Layia carnosa	beach layia	Asteraceae	annual herb	Mar-Jul	FE	CE	G2	S2	1B.1	 © 2007 Aaron Schusteff
Lessingia germanorum	San Francisco lessingia	Asteraceae	annual herb	(Jun)Jul-Nov	FE	CE	G1	S1	1B.1	 © 2019 Aaron Schusteff
Pentachaeta bellidiflora	white-rayed pentachaeta	Asteraceae	annual herb	Mar-May	FE	CE	G1	S1	1B.1	No Photo Available
Potentilla hickmanii	Hickman's cinquefoil	Rosaceae	perennial herb	Apr-Aug	FE	CE	G1	S1	1B.1	No Photo Available

Showing 1 to 9 of 9 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website https://www.rareplants.cnps.org [accessed 9 February 2022].

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Appendix C:
Cultural Resources Supporting Information

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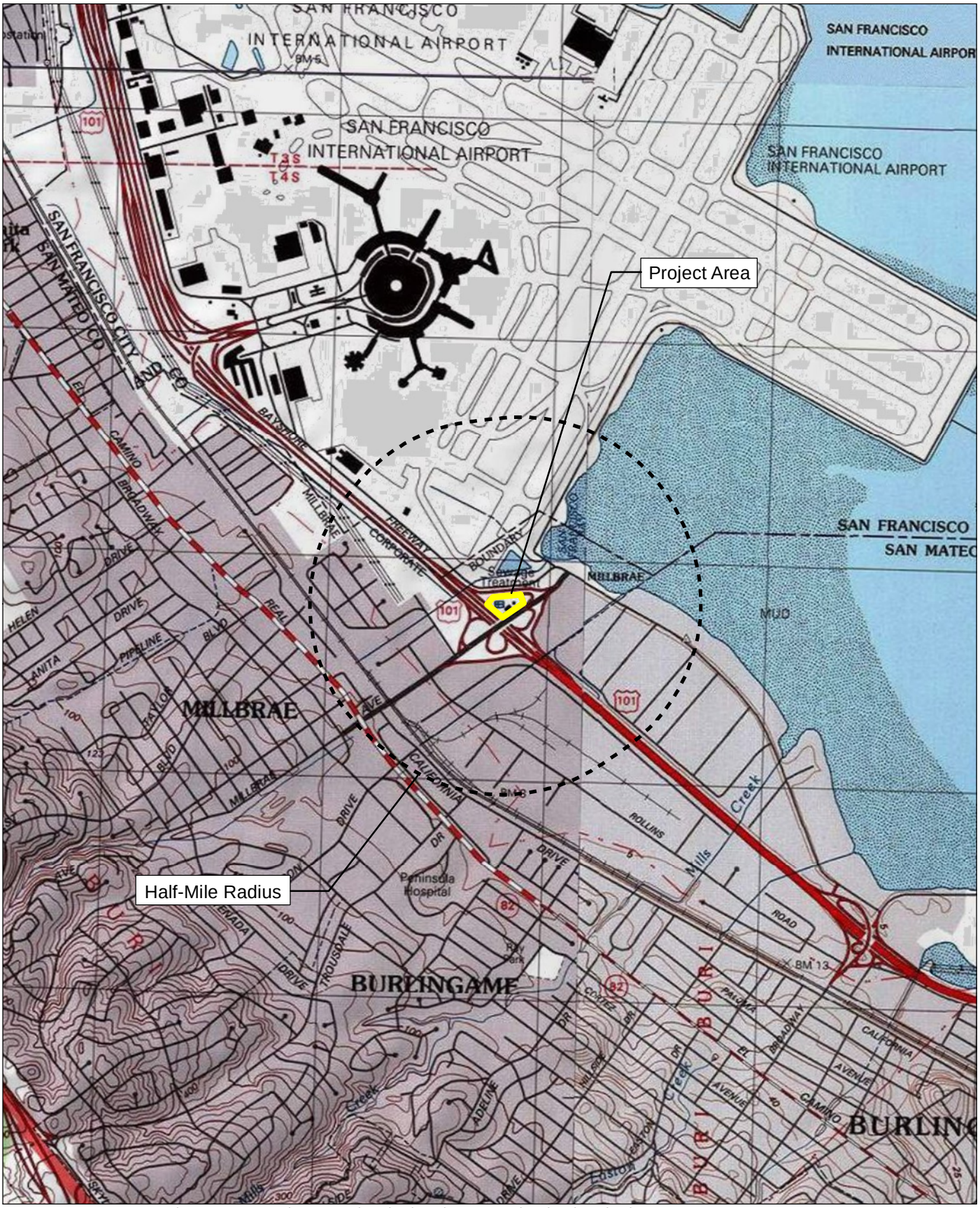

Source: USGS San Mateo and Montara Mountain 7.5' Quadrangles / Land Grants: Buri Buri and Wetlands.

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2,000 1,000 0 2,000 Feet

Record Search Map

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-41-000415		Resource Name - CT-6; Other - Peninsula Commute Service; Other - San Francisco & San Jose Railway	Structure	Historic	AH07	1995 (Hatoff, Voss, Waechter, Wee, Bente, Woodward-Clyde Consultants)	S-017993
P-41-000416		Resource Name - CT-7; Other - Peninsula Commute Service; Other - San Francisco & San Jose Railway	Structure	Historic	AH07	1995 (Hatoff, Voss, Waechter, Wee, Bente, Woodward-Clyde Consultants)	S-017993
P-41-000640	CA-SMA-000172H	Resource Name - Southern Pacific Depot; OHP PRN - 4030-0001-0000; National Register - NPS 78000770-0000; Other - Millbrae Station; OHP Property Number - 005264; Voided - P-41-000172	Building	Historic	HP17	1977 (Francis Baxter, Millbrae Historical Society); 1979 (J. Cooper, Cabrillo College)	S-003046, S-003073, S-017192, S-026045, S-029657, S-042672
P-41-001696		Resource Name - Spring Valley Water Co. Pump Station; OHP PRN - DOE 41-96-0108-0000; OHP PRN - UMTA900828A; OHP Property Number - 101917; Voided - P-41-001865; OHP PRN - DOE-41-96-0156-0000	Building	Historic	HP09	1996 (Ward Hill, Archaeological/Historical Consultants)	
P-41-001706		OHP Property Number - 101928; OHP PRN - DOE-41-96-0118-0000; Resource Name - Millbrae Cabinet Shop	Building	Historic	HP08	1995 (Laurence H. Shoup, Ward Hill, Archaeological/ Historical Consultants)	
P-41-001707		OHP Property Number - 101929; OHP PRN - DOE-41-96-0119-0000; Other - Millbrae Serra Sanitorium; Resource Name - Millbrae Serra Convalescent Hospital; Voided - P-41-001875; OHP PRN - DOE-41-96-0166-0000	Building	Historic	HP41	1996 (Laurence H. Shoup, Ward Hill, Archaeological/Historical Consultants)	

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-41-001873		OHP PRN - DOE-41-96-0164-0000; OHP Property Number - 117034; Resource Name - Millbrae Manor; OHP PRN - UMTA900828A	Building	Historic	HP02	1996 (Laurence H. Shoup, Ward Hill, Archaeological/Historical Consultants)	
P-41-002192		Resource Name - El Camino Real; CHL - SHL-0784-0001; Caltrans - 01-SM 82-KP 21.9/22.1, EA 253600; OHP PRN - 089417	Structure	Historic	AH07; HP37	1963 ([none], [none]); 1999 (William Kostura, Caltrans District 4); 2008 (Denise Jurich, Jesse Martinez, PBS&J); 2011 (Andrew Hope, Caltrans)	S-032166, S-033545, S-049034
P-41-002431		Resource Name - Bayside Manor; OHP PRN - UMTA900828A	Building	Historic	HP02; HP39	1995 (Laurence H. Shoup, Ward Hill, Archaeological/Historical Consultants)	S-017192
P-41-002443		Resource Name - MP 13.90 and 14.31; Other - Bridges South of Millbrae Avenue Overpass, MP 13.90 and MP 14.31	Structure	Historic	HP19	2000 (Meta Bunse/Rand Herbert, JRP Historical Consulting Services)	S-029657, S-043525
P-41-002527		Resource Name - 133 Serra Aveue; Resource Name - 3206	Building	Historic	HP02	2009 (Richard Brandi, PBS&J)	S-048738
P-41-002536		Resource Name - 10 Guittard Road; Other - 14720	Building	Historic	HP06	2010 (Amber Grady, James Williams, PBS&J)	S-048738
P-41-002683		Resource Name - T-Mobile West LLC Candidate SF03115A Burlingame Highway 101); Other - Public Storage	Building	Historic	HP06	2016 (Kathleen A. Crawford, Crawford Historic Services)	S-052023

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-003046	Voided - E-44 SMA	1977	David Chavez	Cultural Resources Assessment of the Eucalyptus Project area (letter report)		41-000172, 41-000640
S-003057	Other - E-55 SMA	1978	Stephen A. Dietz	Report of an Archaeological Reconnaissance of the City of Milbrae's Madrone Street Sewage Lift Station and Interceptor Sewer Project, Project Number C-06-1440-010	Archaeological Consulting and Research Services, Inc.	
S-004885	Caltrans - 04210-392680	1974	G. V. Scott	The Millbrae Avenue Interchange, 04-SM-101, PM 17.9/18.1, Millbrae I/C, 04210-392680	Caltrans	
S-010402		1988	Rebecca Loveland Anastasio, Donna M. Garaventa, Stuart A. Guedon, Robert M. Harmon, and John W. Schoenfelder	A Cultural Resources Assessment for San Francisco Resource Supply Study (San Mateo Substation to Martin Substation), Daly City to City of San Mateo, San Mateo County, California	Basin Research Associates, Inc.	
S-011396		1989		Technical Report of Cultural Resources Studies for the Proposed WTG-WEST, Inc., Los Angeles to San Francisco and Sacramento, California: Fiber Optic Cable Project	BioSystems Analysis, Inc.	27-000819, 27-001444, 27-001445, 27-001446, 27-003235, 27-003236, 35-000036, 35-000053, 35-000151, 35-000152, 35-000153, 35-000154, 35-000167, 35-000168, 41-000009, 41-000105, 41-000169, 41-000172, 41-000230, 41-000231, 41-000410, 43-000024, 43-000028, 43-000042, 43-000050, 43-000178, 43-000179, 43-000180, 43-000181, 43-000182, 43-000183, 43-000184, 43-000189, 43-000245, 43-000247, 43-000248, 43-000388, 43-000449, 43-000456, 43-000595, 43-000619, 43-001001, 43-001010, 43-001059
S-012201	Other - FAA 970911 A	1990	David Chavez and Jan M. Hupman	Cultural Resources Evaluation for the San Francisco International Airport Master Plan EIR, San Mateo County, California	David Chavez & Associates	
S-016687	Voided - S-016688	1994	Carolyn Rice	BART-San Francisco Airport Extension Project, Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement, Archaeological Survey Report		41-000409

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-016687a		1994	Carolyn Rice	BART-San Francisco Airport Extension Project, Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement, Archaeological Resources Technical Report		

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-017192	OHP PRN - UMTA900828A	1994	Laurence H. Shoup, Mark Brack, Nancy Fee, and Bruno Giberti	BART-San Francisco Airport Extension Project, Draft Environmental Impact Report/Supplemental Environmental Impact Statement, Historic Architectural Survey Technical Report	Archaeological/Historical Consultants	41-000323, 41-000324, 41-000325, 41-000326, 41-000327, 41-000328, 41-000329, 41-000330, 41-000331, 41-000332, 41-000333, 41-000334, 41-000335, 41-000336, 41-000337, 41-000338, 41-000339, 41-000340, 41-000341, 41-000342, 41-000343, 41-000344, 41-000345, 41-000346, 41-000347, 41-000348, 41-000349, 41-000350, 41-000351, 41-000352, 41-000353, 41-000354, 41-000355, 41-000356, 41-000357, 41-000358, 41-000359, 41-000360, 41-000361, 41-000362, 41-000363, 41-000364, 41-000365, 41-000366, 41-000367, 41-000368, 41-000369, 41-000370, 41-000371, 41-000372, 41-000373, 41-000374, 41-000375, 41-000376, 41-000377, 41-000378, 41-000379, 41-000380, 41-000381, 41-000382, 41-000383, 41-000384, 41-000385, 41-000386, 41-000387, 41-000388, 41-000389, 41-000390, 41-000391, 41-000392, 41-000393, 41-000394, 41-000395, 41-000396, 41-000397, 41-000398, 41-000543, 41-000640, 41-001557, 41-001558, 41-001559, 41-001560, 41-001561, 41-001562, 41-001563, 41-001564, 41-001565, 41-001566, 41-001567, 41-001568, 41-001569, 41-001570, 41-001571, 41-001572, 41-001573, 41-001574, 41-001576, 41-001577, 41-001578, 41-001579, 41-001580, 41-001581, 41-001582, 41-001583, 41-001584, 41-001585, 41-001586, 41-001587, 41-001588, 41-001591, 41-001592, 41-001593, 41-001594, 41-001595, 41-001596, 41-001597, 41-001598, 41-001599, 41-001600, 41-001601, 41-001602, 41-001603, 41-001604, 41-001605, 41-001606, 41-001607, 41-001608, 41-001609, 41-001610, 41-001611, 41-001612, 41-001613, 41-001614, 41-001615, 41-001616, 41-001617, 41-001618, 41-001619,

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
						41-001620, 41-001621, 41-001622, 41-001623, 41-001624, 41-001625, 41-001626, 41-001627, 41-001628, 41-001629, 41-001630, 41-001631, 41-001632, 41-001633, 41-001634, 41-001635, 41-001636, 41-001637, 41-001638, 41-001639, 41-001640, 41-001641, 41-001642, 41-001643, 41-001644, 41-001645, 41-001646, 41-001647, 41-001648, 41-001649, 41-001650, 41-001651, 41-001652, 41-001653, 41-001654, 41-001655, 41-001656, 41-001657, 41-001658, 41-001659, 41-001660, 41-001661, 41-001662, 41-001801, 41-002430, 41-002431
S-017192a		1995	Laurence H. Shoup and Ward Hill	Bart-SFP Extension Project, Draft Environmental Impact Report/Supplemental Environmental Impact Statement, Historic Architectural Survey Technical Report, Volume II: Alternative VI, Highway 380 to Trousdale Drive in Burlingame	Archaeological/Historical Consultants	
S-017192b		1995	Cherilyn Widdell	UMTA900828A; Project: BART Extension from Colma to San Francisco International Airport	California Office of Historic Preservation	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-017993		1995	Brian Hatoff, Barb Voss, Sharon Waechter, Stephen Wee, and Vance Bente	Cultural Resources Inventory Report for the Proposed Mojave Northward Expansion Project	Woodward-Clyde Consultants	01-000231, 01-001775, 01-001776, 01-001783, 01-002190, 01-010620, 01-010629, 01-011603, 07-000091, 07-000402, 07-000438, 07-000487, 07-000488, 07-000489, 07-000490, 07-000499, 07-000500, 07-000501, 07-000502, 07-000504, 07-000806, 07-000813, 07-002402, 07-002695, 35-000334, 38-000007, 41-000009, 41-000165, 41-000169, 41-000172, 41-000310, 41-000311, 41-000410, 41-000411, 41-000412, 41-000413, 41-000414, 41-000415, 41-000416, 41-000417, 41-000418, 41-000419, 41-000420, 41-000421, 41-000422, 41-000423, 41-000424, 41-000425, 41-000456, 41-000632, 41-000808, 43-000623, 43-000649, 43-000650, 43-000903, 43-000928, 48-000179, 48-000180, 48-000207, 48-000208, 48-000549, 48-000955
S-017993a		1995		Proposed Mojave Northward Expansion Project: Appendix A - Native American Consultation	Woodward-Clyde Consultants	
S-017993b		1995		Proposed Mojave Northward Expansion Project: Appendix B - Looping Segments - Class 1	Woodward-Clyde Consultants	
S-017993c		1995		Proposed Mojave Northward Expansion Project: Appendix C -Monitoring and Emergency Discovery Plan	Woodward-Clyde Consultants	
S-017993d		1995		Proposed Mojave Northward Expansion Project: Appendix D - General Construction Information	Woodward-Clyde Consultants	
S-017993e		1995		Proposed Mojave Northward Expansion Project: Appendix E - Archaeological Site Records	Woodward-Clyde Consultants	
S-017993f		1995		Proposed Mojave Northward Expansion Project: Appendix F - Historic Features Evaluation Forms	Woodward-Clyde Consultants	
S-017993g		1995		Proposed Mojave Northward Expansion Project: Appendix G - Railroad Crossing Evaluation Forms	Woodward-Clyde Consultants	

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-017993h		1995		Proposed Mojave Northward Expansion Project: Appendix H - Crossing Diagrams and Plan View Maps	Woodward Clyde Consultants	
S-017993I		1995		Proposed Mojave Northward Expansion Project: Appendix I - Railroad Depot NRHP Nomination Forms and Related Records	Woodward-Clyde Consultants	
S-017993j		1995		Proposed Mojave Northward Expansion Project: Appendix J - Looping Segment and Compressor Station Site Records	Woodward-Clyde Consultants	
S-017993k		1995		Proposed Mojave Northward Expansion Project: Appendix K - Historic Site Records / Isolate Forms	Woodward-Clyde Consultants	
S-017993l		1995		Proposed Mojave Northward Expansion Project: Appendix L - Photodocumentation	Woodward-Clyde Consultants	
S-017993m		1995		Proposed Mojave Northward Expansion Project: Appendix M - Curricula Vitae of Key Preparers	Woodward-Clyde Consultants	
S-019885		1997	Hannah Ballard and John Holson	Cultural Resources Survey for the San Francisco International Airport/Bay Trail Extension Project, Bay Trail Alignment Plan	Pacific Legacy, Inc.	41-000281
S-020508		1998	Suzanne Baker and Ward Hill	Archaeological Survey and Historic Architectural Survey of the Low Level Windshear Alert System (LLWAS) Project, Sites #4, #5 and #8, San Mateo County, California	Archaeological/Historical Consultants	41-000460
S-020508a		1998	Keith A. Lusk, Cherilyn E. Widell, and Daniel Abeyta	Low Level Windshear Alert System (LLWAS) at San Francisco International Airport, San Mateo County	Federal Aviation Admionistration; California Office of Historic Preservation	
S-021887	Submitter - 50001 68/99	1999	Kelda Wilson	Review of the Historic Resources of the Built Environment for Site SF-182-01, North Access Road East, San Francisco, San Mateo County, CA (50001 68/99) (letter report)	Anthropological Studies Center, Sonoma State University	
S-025174		2002	John Holson, Cordelia Sutch, and Stephanie Pau	Cultural Resources Report for San Bruno to Mountain View Internodal Level 3 Fiber Optics Project in San Mateo and Santa Clara Counties, California	Pacific Legacy, Inc.	41-000302

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-026045		2000	Richard Carrico, Theodore Cooley, and William Eckhardt	Cultural Resources Reconnaissance Survey and Inventory Report for the Metromedia Fiberoptic Cable Project, San Francisco Bay Area and Los Angeles Basin Networks	Mooney & Associates	01-000038, 01-000040, 01-000042, 01-000068, 01-000072, 01-000091, 01-000092, 01-000108, 01-000120, 01-000233, 01-000239, 01-000240, 01-000241, 01-010527, 01-010528, 01-010529, 01-010530, 01-010531, 01-010532, 01-010533, 01-010534, 01-010535, 07-000719, 21-000034, 21-000097, 21-000529, 21-000536, 21-000563, 38-000015, 41-000009, 41-000044, 41-000077, 41-000095, 41-000105, 41-000152, 41-000169, 41-000172, 41-000174, 41-000187, 41-000230, 41-000231, 41-000232, 41-000281, 41-000302, 41-000310, 41-000311, 41-000312, 41-000315, 41-000318, 41-000640, 43-000021, 43-000024, 43-000028, 43-000042, 43-000050, 43-000058, 43-000141, 43-000338, 43-000369, 43-000382, 43-000383, 43-000388, 43-000396, 43-000398, 43-000418, 43-000424, 43-000444, 43-000462, 43-000467, 43-000472, 43-000551, 43-000565, 43-000595, 43-000617, 43-000619, 43-000621, 43-000669, 43-001010, 43-001071, 43-001083, 43-001084
S-026297	Caltrans - EA 26420K; OHP PRN - FHWA020807A; Voided - S-26298; Voided - S-26313	2002	Colin I. Busby	Historic Properties Survey Report, Route 101 Auxiliary Lanes Project, Third Avenue to Millbrae Avenue, San Mateo County, California; 04-SM-101, K.P. 21.7/28.8 (P.M. 13.5-17.9) EA 26420K	Basin Research Associates, Inc.	41-002002, 41-002078, 41-002079, 41-002080, 41-002081, 41-002082, 41-002083, 41-002084, 41-002085, 41-002086, 41-002087, 41-002088, 41-002089, 41-002090, 41-002091, 41-002092, 41-002093, 41-002094, 41-002095, 41-002096, 41-002097, 41-002098, 41-002099, 41-002100, 41-002101, 41-002102, 41-002103, 41-002104, 41-002105, 41-002106
S-026297a		2002	Ward Hill	Historic Architectural Survey Report Route 101 Auxiliary Lanes Project Third Avenue to Millbrae Avenue San Mateo County, California 04-SM-101 KP 21.7/28.8 (PM13.5/17.9) EA 26420K	Basin Research Assiociates, Inc.	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-026297b		2002	Knox Mellon	Archaeological Survey Report, Route 101 Auxiliary Lanes Project, Third Avenue to Millbrae Avenue, San Mateo County, California; 04-SM-101 KP 21.7/28.8 (PM 13.5/17.9) EA 26420K	Basin research Associates, Inc.	
S-026297c		2002	Knox Mellon and David A. Nicol	FHWA020807A; HAD-CA, File No. US 101 Auxiliary Lane, 04-SM-101 PM13.5/17.9, EA 04-245-26420K [Further Section 106 Consultation on the Proposed Construction of Auxiliary Lanes on State Route 101, San Mateo County]	Office of Historic Preservation; Department of Parks and Recreation	
S-027930		2003	Kyle Brown, Adam Marlow, James Allan, and William Self	Cultural Resource Assessment of Alternative Routes for PG&E's Jefferson-Martin Transmission Line, San Mateo County, California	William Self Associates, Inc.	41-000044, 41-000077, 41-000079, 41-000093, 41-000094, 41-000095, 41-000103, 41-000104, 41-000149, 41-000172, 41-000207, 41-000283, 41-000302, 41-000401, 41-000402, 41-000404, 41-000409, 41-000410, 41-000487, 41-000495, 41-000497, 41-001376, 41-002115, 41-002116, 41-002163

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-029657	OHP PRN - FTA021021A; Voided - S-37863; Voided - S-42672; Voided - S-43525	2002	Wendy J. Nelson, Tammara Norton, Larry Chiea, and Reinhard Pribish	Archaeological Inventory for the Caltrain Electrification Program Alternative in San Francisco, San Mateo, and Santa Clara Counties, California	Far Western Anthropological Research Group, Inc.	38-000015, 38-004498, 38-004756, 38-004820, 38-004962, 38-005084, 38-005456, 38-005457, 38-005458, 38-005459, 38-005460, 38-005461, 38-005462, 41-000009, 41-000105, 41-000165, 41-000169, 41-000230, 41-000231, 41-000281, 41-000310, 41-000311, 41-000312, 41-000318, 41-000410, 41-000498, 41-000534, 41-000632, 41-000640, 41-000808, 41-001135, 41-001136, 41-001137, 41-001138, 41-001406, 41-002116, 41-002353, 41-002433, 41-002434, 41-002435, 41-002437, 41-002438, 41-002439, 41-002440, 41-002441, 41-002442, 41-002443, 41-002444, 41-002447, 41-002462, 41-002463, 41-002464, 41-002465, 43-000028, 43-000042, 43-000050, 43-000449, 43-000566, 43-000619, 43-000669, 43-000881, 43-000928, 43-001071, 43-001739, 43-002653, 43-002867, 43-002868, 43-002869, 43-002871, 43-002873, 43-002877, 43-002878, 43-003025, 43-003026, 43-003027, 43-003028, 43-003029, 43-003030, 43-003031, 43-003032, 43-003033, 43-003034, 43-003035, 43-003036, 43-003037, 43-003038, 43-003039, 43-003040, 43-003041, 43-003042, 43-003043, 43-003044
S-029657a		2002	Rand F. Herbert	Finding of No Adverse Effect, Caltrain Electrification Program, San Francisco, San Mateo, and Santa Clara Counties, California	JRP Historical Consulting Services	
S-029657b		2002		Historic Property Survey for the Proposed Caltrain Electrification Program, San Francisco, San Mateo, and Santa Clara Counties, California	Parsons; JRP Historical Consulting Services; Far Western Anthropological Research Group, Inc.	
S-029657c		2002	Knox Mellon	FTA021021A; Caltrain Electrification Program, San Francisco, San Mateo, and Santa Clara Counties	Office of Historic Preservation	
S-029657d		2003	Meta Bunse	Final Finding of Effect Amendment, Caltrain Electrification Project, San Francisco, San Mateo, and Santa Clara Counties, California	JRP Historical Consulting Services	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-029657e		2001	Rand F. Herbert	Draft Finding of No Adverse Effect, Caltrain Electrification Program, San Francisco, San Mateo, and Santa Clara Counties, California	JRP Historical Consulting Services	
S-029657f		2008	Sharon A. Waechter, Jack Meyer, and Laura Leach-Palm	Cultural Resources Addendum for the Caltrain Electrification Program Alternative: San Francisco, San Mateo, and Santa Clara Counties, California	Far Western Anthropological Research Group, Inc.	
S-029657g		2008	Meta Bunse	Addendum Finding of Effect, Caltrain Electrification Program, San Francisco to San Jose (MP 0.0 to 52.0); San Francisco, San Mateo, and Santa Clara Counties, California	JRP Historical Consulting, LLC	
S-029657h		2002		Inventory and Evaluation of Historic Resources, Caltrain Electrification Program, San Francisco to Gilroy (MP 0.0 to 77.4) (Draft)	JRP Historical Consulting Services	
S-033061	Submitter - SWCA Cultural Resources Report Database No. 06-507; Submitter - SWCA Report No. 10715-	2006	Nancy Sikes, Cindy Arrington, Bryon Bass, Chris Corey, Kevin Hunt, Steve O'Neil, Catherine Pruett, Tony Sawyer, Michael Tuma, Leslie Wagner, and Alex Wesson	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California	SWCA Environmental Consultants	01-000027, 01-000040, 01-000087, 01-000088, 01-000089, 01-000090, 07-000138, 27-000802, 27-001191, 27-001207, 28-000467, 43-000106, 43-000141, 43-000449, 43-000573, 43-000575, 43-000754, 43-000928, 43-001071, 48-000208, 48-000211, 48-000214, 48-000441, 48-000549, 49-001583, 57-000194, 57-000198, 57-000297, 57-000301, 57-000307
S-033061a		2006		Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California	SWCA Environmental Consultants	
S-033061b		2007	Nancy E. Sikes	Final Report of Monitoring and Findings for the Qwest Network Construction Project (letter report)	SWCA Environmental Consultants	
S-038684	Submitter - LSA Project #KHA0804	2008	Stacy Kozakavich and Alexandra Merritt-Smith	A Cultural Resources Study for the San Mateo County SMART Corridors Project, San Mateo County, California	LSA Associates, Inc.	41-000009, 41-000011, 41-000037, 41-000105, 41-000233, 41-000244, 41-000258, 41-000273, 41-000308, 41-000309, 41-000310, 41-000311, 41-000316, 41-000498, 41-002207
S-038684a		2009	Neal Kaptain	Smart Corridors Geoarchaeological Sensitivity Research (letter report)	LSA Associates, Inc.	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-038806		2012	Jennifer Thomas, Cindy Baker, Rebecca Kellawan, and Jack Meyer	Cultural Resources Study for the Lomita Park, Martin, and Sullivan Regulator Stations Rebuild Project, San Mateo County, California	Far Western Anthropological Research Group; PAR Environmental Services	41-002306, 41-002307
S-039104	Caltrans - EA 04-24992; OHP PRN - FHWA 091105 A	2012	Brian F. Byrd, John E. Berg, Philip Kaijankoski, Jelmer W. Eerkens, Anna Fritschi, Kenneth W. Gobalet, Deborah Jones, Rebecca Kellawan, Jack Meyer, Thomas M. Origer, Howard Spero, Eric Wohlgemuth, and Jeffrey	Archaeological Investigations for the State Route 82 Signal Interconnect and Intersection Modification Project, San Mateo County, California, 04-SMA-82 PM 0.0/15.9, EA 04-24992	Far Western Anthropological Research Group, Inc.	41-000011, 41-000302, 41-002293
S-039104a		2010	Brett Rushing	Historic Property Treatment Plan for the State Route 82 Signal Interconnect and Intersection Modification Project, 04-SM-82 PM 0.0/15.9, EA 24992	California Department of Transportation, District 4	
S-045002	OHP PRN - FAA 110113A	2013	John Kelley and Andrew Pulcheon	Cultural Resources Monitoring Report for the San Francisco International Airport Runway Safety Area Project; Construction No. 3590C South Field Drainage Improvement Project	LSA Associates	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
S-048738		2011	Denise Jurich and Amber Grady	California High-Speed Train Project, Environmental Impact Report/Environmental Impact Statement, San Francisco to San Jose Section, Archaeological Survey Report, Technical Report [Draft]	PBS&J	38-000015, 38-004638, 38-005487, 38-005488, 41-000009, 41-000105, 41-000230, 41-000231, 41-000281, 41-000310, 41-000311, 41-000465, 41-000491, 41-000497, 41-000498, 41-000506, 41-001350, 41-001351, 41-001541, 41-001582, 41-002116, 41-002147, 41-002160, 41-002395, 41-002396, 41-002397, 41-002398, 41-002399, 41-002400, 41-002401, 41-002402, 41-002488, 41-002489, 41-002490, 41-002491, 41-002492, 41-002493, 41-002494, 41-002495, 41-002496, 41-002497, 41-002498, 41-002499, 41-002500, 41-002501, 41-002502, 41-002503, 41-002504, 41-002505, 41-002506, 41-002507, 41-002508, 41-002509, 41-002510, 41-002511, 41-002512, 41-002513, 41-002514, 41-002515, 41-002516, 41-002517, 41-002518, 41-002519, 41-002520, 41-002521, 41-002522, 41-002523, 41-002524, 41-002525, 41-002526, 41-002527, 41-002528, 41-002529, 41-002530, 41-002531, 41-002532, 41-002533, 41-002534, 41-002535, 41-002536, 41-002537, 41-002538, 41-002539, 41-002540, 41-002541, 41-002542, 41-002543, 41-002544, 41-002545, 41-002546, 41-002547, 41-002548, 41-002549, 41-002550, 41-002551, 43-000021, 43-000028, 43-000042, 43-000050, 43-000595, 43-000619, 43-000669, 43-002193, 43-003137, 43-003172, 43-003475, 43-003477, 43-003577, 43-003690, 43-003691, 43-003692, 43-003693, 43-003694, 43-003695, 43-003696, 43-003697, 43-003698, 43-003699, 43-003700, 43-003701, 43-003702, 43-003703, 43-003704, 43-003705, 43-003706, 43-003707, 43-003708, 43-003709, 43-003710, 43-003711, 43-003712, 43-003713, 43-003714, 43-003715, 43-003716, 43-003717, 43-003718, 43-003719,

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
						43-003721, 43-003722
S-048738a		2011	Amber Grady and Richard Brandi	California High-Speed Train Project, Environmental Impact Report/Environmental Impact Statement, San Francisco to San Jose Section, Historic Architectural Survey Report, Technical Report [Draft]	PBS&J	
S-049125	Caltrans - EA 04-1J560; Caltrans - E-FIS 0413000206; OHP PRN - FHWA_2017_0508_001	2017	Michael Meloy and Kathleen Kubal	Historic Property Survey Report for the US 101 Managed Lanes Project, EA 04-1J560	California Department of Transportation, District 4; AECOM	41-000039, 41-000045, 41-000047, 41-000273, 41-000321, 41-002619, 41-002620, 41-002621, 41-002622, 41-002623, 41-002624, 41-002625, 41-002626, 41-002627, 41-002628, 41-002629, 41-002630, 41-002631, 41-002632, 41-002633, 41-002634, 41-002635, 41-002636, 41-002637, 41-002638, 41-002639, 41-002640
S-049125a		2017	Michael Meloy	Historic Resources Evaluation Report for the US 101 Managed Lanes Project, EA 04-1J560	California Department of Transportation, District 4	
S-049125b		2017	Karin G. Beck, Kathleen Kubal, and Jay Rehor	Archaeological Survey Report and Extended Phase I Study, US 101 High-Occupancy Vehicle/Express (Managed) Lanes Project, San Francisco, San Mateo, and Santa Clara Counties, California, EA 04-1J5600	AECOM	
S-049125c		2017	Julianne Polanco	FHWA_2017_0508_001, Determinations of Eligibility for the Proposed Creation of Approximately 22 Miles of Managed Lanes along United States Highway 101, San Mateo County, CA	California Office of Historic Preservation	
S-052023	OTIS Report Number - FCC_2016_0512_002	2016	Cher L. Peterson and Kathleen A. Crawford	Cultural Resources Records Search Results for T-Mobile West, LLC Candidate SF03115A (SF115 Burlingame HWY 101) 1761 Adrian Road, Burlingame, San Mateo County, California (letter report)	Environmental Assessment Specialists, Inc.	41-002683
S-052023a		2016	Kathleen A. Crawford	Direct APE Historic Architectural Assessment for T-Mobile West, LLC Candidate SF03115A (SF115 Burlingame HWY 101) 1761 Adrian Road, Burlingame, San Mateo County, California	Environmental Assessment Specialists, Inc.	

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

March 17, 2022

Dr. Dana DePietro
FirstCarbon Solutions

Via Email to: ddepietro@fcs-intl.com

Re: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, 400 East Millbrae Avenue Digital Billboard Project, San Mateo County

Dear Dr. DePietro:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

- A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;
- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
- Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and
- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

    - Any report that may contain site forms, site significance, and suggested mitigation measures.

      All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was positive. Please contact the Amah Mutsun Tribal Band of Mission San Juan Bautista and The Ohlone Indian Tribe on the attached list for more information.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Cody.Campagne@nahc.ca.gov.

Sincerely,

Cody Campagne

Cody Campagne
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Tribal Consultation List
San Mateo County
3/17/2022

Amah MutsunTribal Band of Mission San Juan Bautista
Irene Zwierlein, Chairperson
3030 Soda Bay Road — Costanoan
Lakeport, CA, 95453
Phone: (650) 851 - 7489
Fax: (650) 332-1526
amahmutsuntribal@gmail.com

Costanoan Rumsen Carmel Tribe
Tony Cerda, Chairperson
244 E. 1st Street — Costanoan
Pomona, CA, 91766
Phone: (909) 629 - 6081
Fax: (909) 524-8041
rumsen@aol.com

Indian Canyon Mutsun Band of Costanoan
Kanyon Sayers-Roods, MLD Contact
1615 Pearson Court — Costanoan
San Jose, CA, 95122
Phone: (408) 673 - 0626
kanyon@kanyonkonsulting.com

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28 — Costanoan
Hollister, CA, 95024
Phone: (831) 637 - 4238
ams@indiancanyons.org

Muwekma Ohlone Indian Tribe of the SF Bay Area
Charlene Nijmeh, Chairperson
20885 Redwood Road, Suite 232 — Costanoan
Castro Valley, CA, 94546
Phone: (408) 464 - 2892
cnijmeh@muwekma.org

Muwekma Ohlone Indian Tribe of the SF Bay Area
Monica Arellano, Vice Chairwoman
20885 Redwood Road, Suite 232 — Costanoan
Castro Valley, CA, 94546
Phone: (408) 205 - 9714
marellano@muwekma.org

The Ohlone Indian Tribe
Andrew Galvan,
P.O. Box 3388 — Bay Miwok
Fremont, CA, 94539 — Ohlone
Phone: (510) 882 - 0527 — Patwin
Fax: (510) 687-9393 — Plains Miwok
chochenyo@AOL.com

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct. — Foothill Yokut
Salinas, CA, 93906 — Mono
Phone: (831) 443 - 9702
kwood8934@aol.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and section 5097.98 of the Public Resources Code.

This list is only applicable for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed 400 East Millbrae Avenue Digital Billboard Project, San Mateo County.

March 18, 2022

Muwekma Ohlone Indian Tribe of the SF Bay Area
Monica Arellano, Vice Chairwoman
20885 Redwood Road, Suite 232
Castro Valley, CA, 94546

Subject: Proposed 400 East Millbrae Avenue Digital Billboard Project

Dear Vice Chairperson Arellano:

FirstCarbon Solutions (FCS) is preparing a Cultural Resources Analysis for the proposed 400 East Millbrae Avenue Digital Billboard Project on behalf of the City of Millbrae. As part of the environmental review process, we are conducting a cultural resources assessment.

The Applicant proposed to construct a double-sided digital billboard. The new billboard would be a back-to-back design with north- and south-facing displays that would be visible to vehicles travelling in both directions on Highway 101 (US-101) (northbound and southbound). Both of the billboard panels would be digital light-emitting diode (LED) panels.

A Records Search map with a 0.5 mile buffer around the site is enclosed for your reference.

As part of the cultural resources assessment, FCS conducted a Sacred Lands File (SLF) search and California Historical Resource Information System (CHRIS). The results of the SLF records search was positive. The CHRIS search did not find recorded resources within the project site. However, 13 resources are recorded within a 0.5 mile radius of the project site. The CHRIS found 1 recorded report that intersects with the project site as well as 24 recorded resources within a 0.5 mile radius. Native American Heritage Commission (NAHC) suggested you might be able to provide further information. If you have any additional information regarding potential historic or cultural resources in proximity or relation to the proposed project area, we would greatly appreciate your input.

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New York
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56 Broome Corporate Parkway
Conklin, NY 13748

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Please note that this letter is a request for information pertaining to a cultural resources assessment and is not notification of a project under Senate Bill (SB) 18, Assembly Bill (AB) 52 or Section 106 of the National Historic Preservation Act. Designated lead agencies under the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) are handling project notification and consultation requirements. Please feel free to contact me at 530.219.1432 or via email at ddepietro@fcs-intl.com and thank you for your valuable assistance.

Sincerely,

Dana Douglas DePietro, PhD
Director of Cultural Resources
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

Enc: Attachment A: Records Search Map

March 18, 2022

Costanoan Rumsen Carmel Tribe
Tony Cerda, Chairperson
244 E. 1st Street
Pomona, CA, 91766

Subject: Proposed 400 East Millbrae Avenue Digital Billboard Project

Dear Chairperson Cerda:

FirstCarbon Solutions (FCS) is preparing a Cultural Resources Analysis for the proposed 400 East Millbrae Avenue Digital Billboard Project on behalf of the City of Millbrae. As part of the environmental review process, we are conducting a cultural resources assessment.

The Applicant proposed to construct a double-sided digital billboard. The new billboard would be a back-to-back design with north- and south-facing displays that would be visible to vehicles travelling in both directions on Highway 101 (US-101) (northbound and southbound). Both of the billboard panels would be digital light-emitting diode (LED) panels.

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Sincerely,

Dana Douglas DePietro, PhD
Director of Cultural Resources
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

Enc: Attachment A: Records Search Map

March 18, 2022

The Ohlone Indian Tribe
Andrew Galvan
P.O. Box 3388
Fremont, CA, 94539

Subject: Proposed 400 East Millbrae Avenue Digital Billboard Project

Dear Andrew Galvan:

FirstCarbon Solutions (FCS) is preparing a Cultural Resources Analysis for the proposed 400 East Millbrae Avenue Digital Billboard Project on behalf of the City of Millbrae. As part of the environmental review process, we are conducting a cultural resources assessment.

The Applicant proposed to construct a double-sided digital billboard. The new billboard would be a back-to-back design with north- and south-facing displays that would be visible to vehicles travelling in both directions on Highway 101 (US-101) (northbound and southbound). Both of the billboard panels would be digital light-emitting diode (LED) panels.

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Sincerely,

Dana Douglas DePietro, PhD
Director of Cultural Resources
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

Enc: Attachment A: Records Search Map

March 18, 2022

Muwekma Ohlone Indian Tribe of the SF Bay Area
Charlene Nijmeh, Chairperson
20885 Redwood Road, Suite 232
Castro Valley, CA, 94546

Subject: Proposed 400 East Millbrae Avenue Digital Billboard Project

Dear Chairperson Nijmeh:

FirstCarbon Solutions (FCS) is preparing a Cultural Resources Analysis for the proposed 400 East Millbrae Avenue Digital Billboard Project on behalf of the City of Millbrae. As part of the environmental review process, we are conducting a cultural resources assessment.

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Sincerely,

Dana Douglas DePietro, PhD
Director of Cultural Resources
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

Enc: Attachment A: Records Search Map

March 18, 2022

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28
Hollister, CA, 95024

Subject: Proposed 400 East Millbrae Avenue Digital Billboard Project

Dear Chairperson Sayers:

FirstCarbon Solutions (FCS) is preparing a Cultural Resources Analysis for the proposed 400 East Millbrae Avenue Digital Billboard Project on behalf of the City of Millbrae. As part of the environmental review process, we are conducting a cultural resources assessment.

The Applicant proposed to construct a double-sided digital billboard. The new billboard would be a back-to-back design with north- and south-facing displays that would be visible to vehicles travelling in both directions on Highway 101 (US-101) (northbound and southbound). Both of the billboard panels would be digital light-emitting diode (LED) panels.

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MALAYSIA

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Sincerely,

Dana Douglas DePietro, PhD
Director of Cultural Resources
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

Enc: Attachment A: Records Search Map

March 18, 2022

Indian Canyon Mutsun Band of Costanoan
Kanyon Sayers-Roods, MLD Contact
1615 Pearson Court
San Jose, CA, 95122

Subject: Proposed 400 East Millbrae Avenue Digital Billboard Project

Dear Kanyon Sayers-Roods:

FirstCarbon Solutions (FCS) is preparing a Cultural Resources Analysis for the proposed 400 East Millbrae Avenue Digital Billboard Project on behalf of the City of Millbrae. As part of the environmental review process, we are conducting a cultural resources assessment.

The Applicant proposed to construct a double-sided digital billboard. The new billboard would be a back-to-back design with north- and south-facing displays that would be visible to vehicles travelling in both directions on Highway 101 (US-101) (northbound and southbound). Both of the billboard panels would be digital light-emitting diode (LED) panels.

A Records Search map with a 0.5 mile buffer around the site is enclosed for your reference.

As part of the cultural resources assessment, FCS conducted a Sacred Lands File (SLF) search and California Historical Resource Information System (CHRIS). The results of the SLF records search was positive. The CHRIS search did not find recorded resources within the project site. However, 13 resources are recorded within a 0.5 mile radius of the project site. The CHRIS found 1 recorded report that intersects with the project site as well as 24 recorded resources within a 0.5 mile radius. Native American Heritage Commission (NAHC) suggested you might be able to provide further information. If you have any additional information regarding potential historic or cultural resources in proximity or relation to the proposed project area, we would greatly appreciate your input.

UNITED STATES

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F +1 714 508 4110
E info@fcs-intl.com

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#413
Fresno, CA 93720

Inland Empire
967 Kendall Drive
#A-537
San Bernardino, CA 92407

Sacramento Valley
2351 Sunset Boulevard
Suite 170-301
Rocklin, CA 95765

Utah
2901 Bluegrass Boulevard
Suite 200-62
Lehi, UT 84043

Connecticut
2 Corporate Drive
Suite 450
Shelton, CT 06484

New York
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Deposit, NY 13754

56 Broome Corporate Parkway
Conklin, NY 13748

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Sincerely,

Dana Douglas DePietro, PhD
Director of Cultural Resources
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

Enc: Attachment A: Records Search Map

March 18, 2022

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas, CA, 93906

Subject: Proposed 400 East Millbrae Avenue Digital Billboard Project

Dear Chairperson Woodrow:

FirstCarbon Solutions (FCS) is preparing a Cultural Resources Analysis for the proposed 400 East Millbrae Avenue Digital Billboard Project on behalf of the City of Millbrae. As part of the environmental review process, we are conducting a cultural resources assessment.

The Applicant proposed to construct a double-sided digital billboard. The new billboard would be a back-to-back design with north- and south-facing displays that would be visible to vehicles travelling in both directions on Highway 101 (US-101) (northbound and southbound). Both of the billboard panels would be digital light-emitting diode (LED) panels.

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Director of Cultural Resources
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

Enc: Attachment A: Records Search Map

March 18, 2022

Amah Mutsun Tribal Band of Mission San Juan Bautista
Irene Zwierlein, Chairperson
3030 Soda Bay Road
Lakeport, CA, 95453

Subject: Proposed 400 East Millbrae Avenue Digital Billboard Project

Dear Chairperson Zwierlein:

FirstCarbon Solutions (FCS) is preparing a Cultural Resources Analysis for the proposed 400 East Millbrae Avenue Digital Billboard Project on behalf of the City of Millbrae. As part of the environmental review process, we are conducting a cultural resources assessment.

The Applicant proposed to construct a double-sided digital billboard. The new billboard would be a back-to-back design with north- and south-facing displays that would be visible to vehicles travelling in both directions on Highway 101 (US-101) (northbound and southbound). Both of the billboard panels would be digital light-emitting diode (LED) panels.

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Sincerely,

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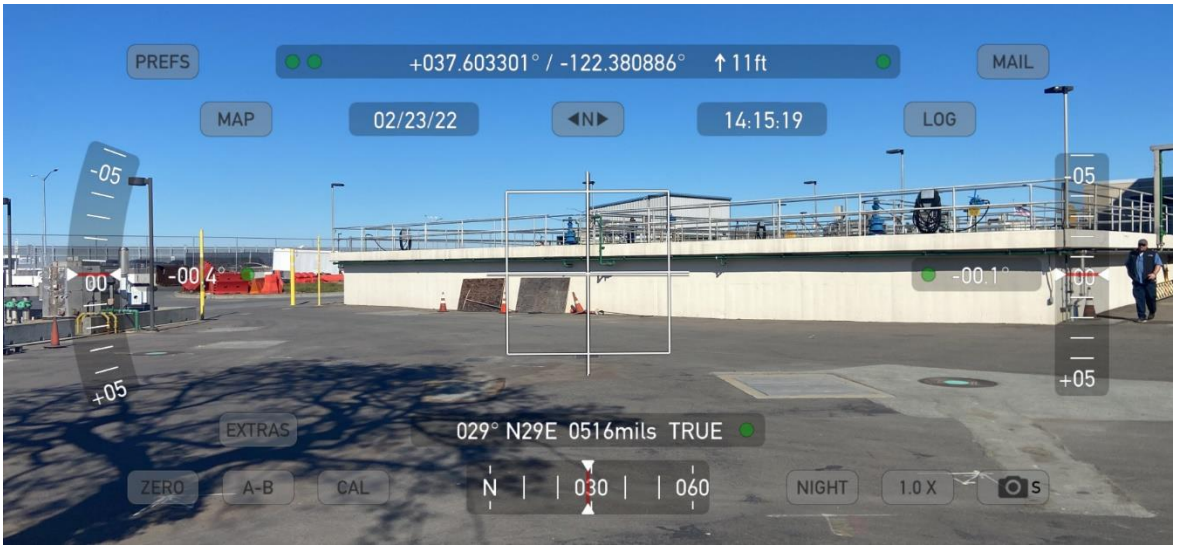
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

Enc: Attachment A: Records Search Map

Photograph 1: View of the proposed billboard site; facing north.

Photograph 2: View of the proposed billboard site; facing west.

Photograph 3: View of the proposed billboard site; facing south.



Photograph 4: View of the proposed billboard site; facing east.

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Kenneth L. Finger, Ph.D.
Consulting Paleontologist

18208 Judy St., Castro Valley, CA 94546-2306 510.305.1080 klfpaleo@comcast.net

April 4, 2022

Dana DePietro
FirstCarbon Solutions
1350 Treat Boulevard, Suite 380
Walnut Creek, CA 94597

Re: Paleontological Records Search: Millbrae Electronic Billboard Project (5249.0002), City of Millbrae, San Mateo County

Dear Dr. DePietro,

As per the request of Madelyn Dolan, I have performed a records search on the University of California Museum of Paleontology (UCMP) database for the Millbrae Electronic Billboard Project. The proposed project site is in the northern quadrant of the Hwy 101/Millbrae Avenue intersection. Its Public Land Survey location is SE, NE¼, NW¼, Sec. 11, T4S, R5W, Montara Mountain quadrangle (USGS 7.5-series topographic map). The project would construct a double-sided digital billboard with north- and south-facing displays that will be visible to vehicles travelling in both directions on Highway 101.

Geologic Units

According to the part of geologic map of Brabb et al. (1998) shown here, the surface of the area of the project site (red outline at center) consists solely of artificial fill (af), which is a disturbed deposit of historic age. Also within the half-mile search area (dashed outline) are Holocene natural levee deposits (Qhl) and the Pleistocene Colma Formation (Qc). The Pleistocene–Pliocene Merced Formation is mapped about a quarter mile farther to the southwest.

Key to mapped units

af	Artificial fill (historic)
Qhl	Natural levee deposits (Holocene)
Qc	Colma Formation (Pleistocene)
QTm	Merced Formation (lower Pleistocene & upper Pliocene)

UCMP Records Search

The records search focused on Pleistocene vertebrates and plant fossils from San Mateo County. The results are 13 Pleistocene vertebrate localities: 10 in unnamed alluvial fan deposits (as inferred from the description of units on the Brabb et al.'s 1998 map, and threea in the Merced Formation. The composite assemblage consists of 45 specimens including *Bison latifrons* (longhorned bison), *Mammuthus columbi* (Columbian mammoth), *Alces* (elk), *Camelops hesternus* (Yesterday's camel), *Uria aalge* (common murre), *Glossotherium harlani* (Harlan's ground sloth), *Equus* (horse), and *Enhydra* (sea otter). Nearest to Millbrae is locality V6319, approximately 3½ miles to the northwest, which yielded a horse tooth. Nearly 5 miles northwest of the project site is locality V6203, where antlers, a skull, and other skeletal elements of elk were collected. In addition, there are nine Pleistocene plant localities in the County, and the nearest to Millbrae are two in San Bruno, approximately three miles to the north-northwest. This San Bruno flora (documented by Potbury in 1932) comprises 18 extant species, including horsetail fern (*Equisetum*), conifer (*Pseudotsuga taxifolia*), two monocotyledons, and 14 dicotyledons, in addition to eight new Pleistocene species.

The UCMP database lists no localities in the Colma Formation.

Remarks and Recommendations

A paleontological walkover survey of the site prior to construction is not warranted because the parcel has been disturbed by commercial development and construction of the adjacent roadways. I also do not recommend paleontological monitoring during earth-disturbing activities because the site's surface is artificial fill, and it is highly unlikely that any of the paleontologically sensitive units in the general area will be encountered in the subsurface by construction activities. However, should any vertebrate bones or teeth or well-preserved plants are unearthed, all construction activities are to be diverted at least 15 feet from the find until a professional paleontologist has inspected the discovery and, if deemed significant, salvaged it for deposition in an appropriate repository such as the UCMP for the benefit of scientific education and research.

Sincerely,

Ken Finger

References Cited

Brabb, E.E., Graymer, R.W., and Jones, D.L., 1998, Geology of the onshore part of San Mateo County, California: a digital database. US Geological Survey Open-File Report 98-137.

Potbury, S.S., 1934, Pleistocene flora from San Bruno, San Mateo County, California, Carnegie Institute of Washington Publication 415: 25–44.

Appendix D:
Summary of Soil and Groundwater Supporting Information

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September 9, 2021

Outfront Media
1695 Eastshore Highway
Berkeley, California 94710

Attn: Mr. Jeff McCuen
P: (510) 559-1114
E: jeff.mccuen@outfrontmedia.com

Re: Summary of Soil and Groundwater Sampling Activities
Millbrae Avenue Billboard
400 East Millbrae Avenue
Millbrae, San Mateo County, California
Terracon Project No. ND215024

Dear Mr. McCuen,

Terracon Consultants, Inc. (Terracon) is pleased to submit this Summary of Soil and Groundwater Sampling Activities performed for the proposed billboard to be located at 400 East Millbrae Avenue in Millbrae, San Mateo County, California. The sampling was completed in accordance with our proposal and agreement for services dated April 20, 2021 (Terracon Proposal No. PND215024).

Site Information

The site is located at 400 East Millbrae Avenue in Millbrae, San Mateo County, California and consists of an approximately 2.4-acre tract of land designated as Assessor Parcel Number (APN) 024371010. The project site consists of an asphalt-paved area. The site is currently developed with the City of Millbrae water pollution control plant. The project consists of constructing a single 45-foot-tall single post billboard supported by an approximately 5-foot diameter pier.

Scope of Work

Terracon was engaged by the client, concurrent with Terracon's geotechnical evaluation of the site, to collect and analyze one soil and one groundwater sample for select chemical parameters to evaluate the presence or absence of regulated environmental chemicals that may be encountered during foundation construction of the proposed billboard. According to the Environmental Due Diligence Assessment – Supplemental Regulatory Review prepared by Leader Professional Services, Inc. on April 14, 2021 for the site, nearby leaking underground storage tank (LUST) cases that have been historically recognized due to releases of gasoline or diesel fuel have the potential to impact the project site. These cases have been previously closed by the California Environmental Protection Agency (CalEPA) and/or San Mateo County.

- Case T0608100157 (400 East Millbrae Avenue Millbrae, CA 94030) was opened in September 1989 when a leak of diesel fuel was reported. The case was closed April 1997, however, was reopened in December 2012 as CalEPA required a soil vapor intrusion investigation be conducted at the project site. The investigation was conducted, and the case was closed in August 2016.
- Case T10000002916 (400 East Millbrae Avenue Millbrae, CA 94030) was opened in January 2011 was diesel fuel impacted soil was encountered during the digging of a utility trench at the Property. Remediation was conducted as the case was closed in July 2014.
- Case T0608101089 (400 East Millbrae Avenue Millbrae, CA 94030) was opened and closed in June 1996 when a 10,000-gallon UST that contained gasoline was removed from the Property.

Terracon mobilized to the site on May 13, 2021 to collect one soil and one groundwater sample from the Cone Penetration Test 1 boring (CPT1). One soil sample (CPT1) was collected at a depth of 6 to 7 feet below ground surface (bgs). Groundwater was sampled at a depth of approximately 5 feet bgs (CPT1-GW). Each sample container was labeled with the project number, date, time, and sample number. Sample containers were placed in a chilled cooler immediately after sampling and subsequently transported to Pace Analytical, a California Environmental Laboratory Accreditation (ELAP) certified laboratory under strict chain-of-custody procedures.

The soil sample was submitted for laboratory analysis of total petroleum hydrocarbons as gasoline (TPH-g), diesel (TPH-d), and motor oil (TPH-mo) by EPA Method 8015, volatile organic compounds (VOCs) by EPA Method 8260B, and chromium and lead by EPA Method 6020.

Results

Terracon has prepared this letter report summarizing the results of field work and laboratory analyses including conclusions and recommendations relative to potential points of regulatory compliance including:

- Hazard Communications (HAZCOMM) considerations for future construction workers in accordance with California General Safety Order §5194;
- Regulatory reporting considerations to Alameda County and/or the California Regional Water Quality Control Board; and
- Waste management considerations including obtaining a temporary U.S. EPA Identification number for wastes that may generated during foundation construction.

Soil

Based on a review of the analytical results, TPH-g and VOCs were not detected in the soil sample above laboratory reported detection limits (RDLs). TPH-d and TPH-mo were detected at concentrations of 7.58 milligrams per kilogram (mg/Kg) and 7.83 mg/Kg, respectively. Chromium and lead were detected at concentrations of 76.0 mg/Kg and 23.8 mg/Kg, respectively.

The California Occupational Safety & Health Administration (CalOSHA) permissible exposure limits (PELs) for chemicals[1] do not specify diesel fuels or motor oil.

The California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB), Environmental Screening Levels (ESLs) provide levels for Direct Exposure Human Health Risk for residential, commercial/industrial, and construction worker scenarios. The concentrations of TPH-d, TPH-mo, chromium, and lead detected in the soil sample are below the RWQCB Environmental Screening Levels (ESLs) for Direct Exposure Human Health Risk Levels for residential, commercial/industrial, and construction worker scenarios. While the TPH-d and TPH-mo concentrations in soil do not appear to exceed OSHA or ESL thresholds, the presence of TPH-d and TPH-mo should be communicated to the general contractor (GC) performing the footing installation (i.e. drilling and ancillary tasks) for disclosure to employees and subcontractors in compliance with California General Safety Order §5194 – Hazard Communication.

The presence of TPH-d, TPH-mo, chromium, and lead in soil does not appear to trigger a Hazardous Material Release Reporting requirement per California Code of Regulations, Title 19, Division 2, Article 2, sections 2630-2632. According to California Office of Emergency Services (CalOES) release reporting matrix[2], oil discharges to land greater than 42 gallons (1 barrel) shall be reported to CalOES. No information is available of the source, volume, or timing of a release that was detected by this soil sample. The land owner should be notified of the presence of TPH-d, TPH-mo, chromium, and lead in soil. The land owner, at the advice of counsel, may choose to disclose the presence of TPH-d, TPH-mo, chromium, and lead in soil to the San Mateo County Certified Unified Program Agency (CUPA).

Solid waste management considerations include reviewing the potential for listed and/or characteristic wastes. California Code of Regulations Title 22 section 66261.24 (22 CCR § 66261.24) does not list TPH-d or TPH-mo. Further, there are no California waste criteria for TPH-d including total threshold limit concentration (TTLC) and soluble threshold limit concentration (STLC). California Code of Regulations Title 22 section 66261.24 (22 CCR § 66261.24) does list chromium and lead values. The threshold for additional analysis for chromium and lead is 50 mg/kg. Based on the reported chromium concentration, the sample was re-analyzed for soluble chromium following the Waste Extraction Test (WET) procedure by EPA Method 6010B. Soluble

[1] https://www.dir.ca.gov/title8/5155table_ac1.html
[2] https://www.caloes.ca.gov/FireRescueSite/Documents/Release%20Reporting%20Matrix.pdf

chromium was reported at a concentration of 0.495 milligrams per liter (mg/L), which is below the STLC screening value of 5.0 for regulated waste.

The acceptance criteria and requirement for any additional soil testing will be defined by the licensed receiving facility accepting this soil. A U.S. EPA facility Identification number may be required for off-site disposal of solid wastes that may generated during foundation construction.

Groundwater

The groundwater sample was submitted for laboratory analysis of analysis of TPH-g, TPH-d, and TPH-mo by EPA Method 8015 and VOCs by EPA Method 8260B. Based on a review of the analytical results, TPH-g and VOCs were not detected in the groundwater sample above laboratory RDLs. TPH-d and TPH-mo were detected at concentrations of 253 micrograms per liter (µg/L) and 315 µg/L, respectively.

The CalOSHA PELs are not applicable for chemicals[3] in groundwater. The relevant conservative ESLs may include Direct Exposure Human Health Risk for drinking groundwater and groundwater vapor intrusion. The concentration of TPH-d in groundwater exceeds the California drinking water Maximum Contaminant Level (MCL) for TPH-d (200 µg/L). A drinking water MCL has not been established for TPH-mo and groundwater vapor intrusion ESLs have not been established for TPH-d or TPH-mo.

Shallow groundwater from the site is not the source of drinking water and there are no applicable groundwater ESLs for construction workers; however, the GC performing the footing installation (i.e. drilling and ancillary tasks) should be notified of the presence of TPH in groundwater for disclosure to employees and subcontractors in compliance with California General Safety Order §5194 – Hazard Communication.

The presence of TPH in groundwater may trigger a Hazardous Material Release Reporting requirement[2] per California Water Code CWC 13272 (a); California Government Code (CGC) 8670.25.5; 8670.26; and, the California State Oil Spill Contingency Plan. The land owner at the advice of counsel may choose to disclose the presence of VOCs in groundwater to CalOES and or RWQCB.

The detected TPH concentrations are not listed wastes. Although the groundwater does not appear to be regulated as a hazardous liquid, discharges of these liquid wastes and requirements for any additional testing will be defined by the licensed receiving facility accepting these liquids. Waste management considerations may include obtaining a temporary publicly-owned treatment works (POTW) discharge permit or management as a liquid waste through a licensed treatment facility. A U.S. EPA facility Identification number may be required for off-site treatment of liquid for wastes that may generated during foundation construction.

[3] https://www.dir.ca.gov/title8/5155table_ac1.html

In summary, impacts to soil and groundwater may require various hazard communication, regulatory reporting, and waste management considerations.

Compound Class	Impacts		Hazard Communication	Reporting to Agencies	Waste Characteristics
	Soil	Groundwater			
TPH-g	No	No	Not Applicable	Not Applicable	Not Applicable
TPH-d	**Yes**	**Yes**	**Yes**	Up to Landowner	Exempt; but profile is up to the licensed receiving facility
TPH-mo	**Yes**	**Yes**	**Yes**	Up to Landowner	Not Applicable
VOCs	No	No	No	Not Applicable	Not Applicable

Discussion

Construction of the billboard foundation is expected to generate excess soils and groundwater that may require special handling. Based on a deepest foundation design scenario, approximately 65 loose cubic yards of soil may be generated, and approximately 125 gallons of static groundwater (assuming an effective porosity of 0.3) may be displaced by foundation materials.

While chemical data provided is this report may not be precisely indicative of impacts to soils that will be generated during construction of the billboard, we recommend placing exhumed soils into roll-off bins and performing additional sampling of these soils (at a rate of one composite sample per 250 cubic yards) to develop a waste profile for special handling and disposal, unless a licensed receiving facility has accepted the solid waste without further testing. Based on Terracon's analysis, the soil should be classified as non-hazardous waste; however, a disposal contractor may require additional sampling and analysis at the time of disposal.

Static groundwater that may be displaced by foundation materials should be captured at the surface and contained as a potentially regulated material for waste profiling, special handling and disposal. Terracon understands that the contractor, Sunset Signs, is proposing to contain the water in two 10,000-gallon aboveground storage tanks (ASTs) for disposal at an off-site location. Terracon recommends developing a waste profile for special handling and disposal. Based on Terracon's analysis, the water should be classified as non-hazardous waste; however, a disposal contractor may require additional sampling and analysis at the time of disposal.

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager: KAS	Project No. ND215024
Drawn by: HGKG	Scale: AS SHOWN
Checked by: SEG	File Name: NA
Approved by: SEG	Date: SEPT 2021

Terracon
5075 Commercial Cir Ste E
Concord, CA 94520-8531

SITE DIAGRAM

MILLBRAE AVENUE BILLBOARD
400 EAST MILLBRAE AVENUE
MILLBRAE, SAN MATEO COUNTY, CALIFORNIA

Exhibit

1

ANALYTICAL REPORT

June 04, 2021

Revised Report

Terracon - Sacramento, CA

Sample Delivery Group:	L1353303
Samples Received:	05/14/2021
Project Number:	ND215024
Description:	Millbrae Billboard
Site:	400 E MILLBRAE AVE MILLBRAE CA
Report To:	Kristin Stout 50 Goldenland Ct Suite 100 Sacramento, CA 95834

Entire Report Reviewed By:

Jordan N Zito
Project Manager

TABLE OF CONTENTS

CPT1 L1353303-01 Solid

Collected by: Marshall Carter | Collected date/time: 05/13/21 09:30 | Received date/time: 05/14/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1673412	1	05/20/21 09:40	05/20/21 09:49	KDW	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1672654	5	05/18/21 17:16	05/19/21 19:06	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015	WG1672353	28.5	05/13/21 09:30	05/18/21 04:15	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1674605	1.14	05/13/21 09:30	05/21/21 11:14	AV	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1672098	1	05/18/21 16:10	05/19/21 21:53	CAG	Mt. Juliet, TN

CPT1-GW L1353303-02 GW

Collected by: Marshall Carter | Collected date/time: 05/13/21 10:40 | Received date/time: 05/14/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015	WG1672516	5	05/19/21 00:58	05/19/21 00:58	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1675575	1	05/22/21 13:37	05/22/21 13:37	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG1673604	1.05	05/19/21 15:18	05/20/21 06:48	DMG	Mt. Juliet, TN

CPT1 L1353303-03 GW

Collected by: Marshall Carter | Collected date/time: 05/13/21 09:30 | Received date/time: 05/14/21 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Preparation by Method 22CCRA2	WG1674013	1	05/21/21 16:50	05/21/21 16:50	TM	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1680866	9	06/01/21 21:24	06/02/21 09:25	EL	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jordan N Zito
Project Manager

Report Revision History

Level II Report - Version 1: 06/03/21 11:11

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	73.4		1	05/20/2021 09:49	WG1673412

Metals (ICPMS) by Method 6020

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Chromium	76.0		6.81	5	05/19/2021 19:06	WG1672654
Lead	23.8		2.72	5	05/19/2021 19:06	WG1672654

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
TPHG C5 - C12	ND		4.79	28.5	05/18/2021 04:15	WG1672353
(S) a,a,a-Trifluorotoluene(FID)	*101*		*77.0-120*		*05/18/2021 04:15*	WG1672353

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0957	1.14	05/21/2021 11:14	WG1674605
Acrylonitrile	ND		0.0240	1.14	05/21/2021 11:14	WG1674605
Benzene	ND		0.00191	1.14	05/21/2021 11:14	WG1674605
Bromobenzene	ND		0.0240	1.14	05/21/2021 11:14	WG1674605
Bromochloromethane	ND		0.00957	1.14	05/21/2021 11:14	WG1674605
Bromodichloromethane	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
Bromoform	ND		0.0479	1.14	05/21/2021 11:14	WG1674605
Bromomethane	ND		0.0240	1.14	05/21/2021 11:14	WG1674605
n-Butylbenzene	ND		0.0240	1.14	05/21/2021 11:14	WG1674605
sec-Butylbenzene	ND		0.0240	1.14	05/21/2021 11:14	WG1674605
tert-Butylbenzene	ND		0.00957	1.14	05/21/2021 11:14	WG1674605
Carbon tetrachloride	ND		0.00957	1.14	05/21/2021 11:14	WG1674605
Chlorobenzene	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
Chlorodibromomethane	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
Chloroethane	ND		0.00957	1.14	05/21/2021 11:14	WG1674605
Chloroform	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
Chloromethane	ND		0.0240	1.14	05/21/2021 11:14	WG1674605
2-Chlorotoluene	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
4-Chlorotoluene	ND		0.00957	1.14	05/21/2021 11:14	WG1674605
1,2-Dibromo-3-Chloropropane	ND		0.0479	1.14	05/21/2021 11:14	WG1674605
1,2-Dibromoethane	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
Dibromomethane	ND		0.00957	1.14	05/21/2021 11:14	WG1674605
1,2-Dichlorobenzene	ND		0.00957	1.14	05/21/2021 11:14	WG1674605
1,3-Dichlorobenzene	ND		0.00957	1.14	05/21/2021 11:14	WG1674605
1,4-Dichlorobenzene	ND		0.00957	1.14	05/21/2021 11:14	WG1674605
Dichlorodifluoromethane	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
1,1-Dichloroethane	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
1,2-Dichloroethane	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
1,1-Dichloroethene	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
cis-1,2-Dichloroethene	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
trans-1,2-Dichloroethene	ND		0.00957	1.14	05/21/2021 11:14	WG1674605
1,2-Dichloropropane	ND		0.00957	1.14	05/21/2021 11:14	WG1674605
1,1-Dichloropropene	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
1,3-Dichloropropane	ND		0.00957	1.14	05/21/2021 11:14	WG1674605
cis-1,3-Dichloropropene	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
trans-1,3-Dichloropropene	ND		0.00957	1.14	05/21/2021 11:14	WG1674605
2,2-Dichloropropane	ND		0.00479	1.14	05/21/2021 11:14	WG1674605

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Di-isopropyl ether	ND		0.00191	1.14	05/21/2021 11:14	WG1674605
Ethylbenzene	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
2-Hexanone	ND		0.0479	1.14	05/21/2021 11:14	WG1674605
Hexachloro-1,3-butadiene	ND		0.0479	1.14	05/21/2021 11:14	WG1674605
Isopropylbenzene	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
p-Isopropyltoluene	ND		0.00957	1.14	05/21/2021 11:14	WG1674605
2-Butanone (MEK)	ND		0.191	1.14	05/21/2021 11:14	WG1674605
Methylene Chloride	ND		0.0479	1.14	05/21/2021 11:14	WG1674605
4-Methyl-2-pentanone (MIBK)	ND		0.0479	1.14	05/21/2021 11:14	WG1674605
Methyl tert-butyl ether	ND		0.00191	1.14	05/21/2021 11:14	WG1674605
Naphthalene	ND		0.0240	1.14	05/21/2021 11:14	WG1674605
n-Propylbenzene	ND		0.00957	1.14	05/21/2021 11:14	WG1674605
Styrene	ND		0.0240	1.14	05/21/2021 11:14	WG1674605
1,1,1,2-Tetrachloroethane	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
1,1,2,2-Tetrachloroethane	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
1,1,2-Trichlorotrifluoroethane	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
Tetrachloroethene	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
Toluene	ND		0.00957	1.14	05/21/2021 11:14	WG1674605
1,2,3-Trichlorobenzene	ND	J4	0.0240	1.14	05/21/2021 11:14	WG1674605
1,2,4-Trichlorobenzene	ND		0.0240	1.14	05/21/2021 11:14	WG1674605
1,1,1-Trichloroethane	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
1,1,2-Trichloroethane	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
Trichloroethene	ND		0.00191	1.14	05/21/2021 11:14	WG1674605
Tetrahydrofuran	ND		0.0240	1.14	05/21/2021 11:14	WG1674605
Trichlorofluoromethane	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
1,2,3-Trichloropropane	ND		0.0240	1.14	05/21/2021 11:14	WG1674605
1,2,4-Trimethylbenzene	ND		0.00957	1.14	05/21/2021 11:14	WG1674605
1,3,5-Trimethylbenzene	ND		0.00957	1.14	05/21/2021 11:14	WG1674605
Vinyl chloride	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
o-Xylene	ND		0.00479	1.14	05/21/2021 11:14	WG1674605
m&p-Xylene	ND		0.00766	1.14	05/21/2021 11:14	WG1674605
Xylenes, Total	ND		0.0124	1.14	05/21/2021 11:14	WG1674605
(S) Toluene-d8	*108*		*75.0-131*		*05/21/2021 11:14*	WG1674605
(S) 4-Bromofluorobenzene	*86.4*		*67.0-138*		*05/21/2021 11:14*	WG1674605
(S) 1,2-Dichloroethane-d4	*76.1*		*70.0-130*		*05/21/2021 11:14*	WG1674605

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	7.58		5.45	1	05/19/2021 21:53	WG1672098
C22-C32 Hydrocarbons	7.83		5.45	1	05/19/2021 21:53	WG1672098
(S) o-Terphenyl	*38.6*		*18.0-148*		*05/19/2021 21:53*	WG1672098

Volatile Organic Compounds (GC) by Method 8015

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPHG C5 - C12	ND		500	5	05/19/2021 00:58	WG1672516
(S) a,a,a-Trifluorotoluene(FID)	*105*		*78.0-120*		*05/19/2021 00:58*	WG1672516

Sample Narrative:

L1353303-02 WG1672516: Dilution due to foam.

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND		25.0	1	05/22/2021 13:37	WG1675575
Acrylonitrile	ND		5.00	1	05/22/2021 13:37	WG1675575
Benzene	ND		0.500	1	05/22/2021 13:37	WG1675575
Bromobenzene	ND		0.500	1	05/22/2021 13:37	WG1675575
Bromodichloromethane	ND		0.500	1	05/22/2021 13:37	WG1675575
Bromochloromethane	ND		0.500	1	05/22/2021 13:37	WG1675575
Bromoform	ND		0.500	1	05/22/2021 13:37	WG1675575
Bromomethane	ND		2.50	1	05/22/2021 13:37	WG1675575
n-Butylbenzene	ND		0.500	1	05/22/2021 13:37	WG1675575
sec-Butylbenzene	ND		0.500	1	05/22/2021 13:37	WG1675575
tert-Butylbenzene	ND		0.500	1	05/22/2021 13:37	WG1675575
Carbon disulfide	ND		0.500	1	05/22/2021 13:37	WG1675575
Carbon tetrachloride	ND		0.500	1	05/22/2021 13:37	WG1675575
Chlorobenzene	ND		0.500	1	05/22/2021 13:37	WG1675575
Chlorodibromomethane	ND		0.500	1	05/22/2021 13:37	WG1675575
Chloroethane	ND		2.50	1	05/22/2021 13:37	WG1675575
Chloroform	ND		0.500	1	05/22/2021 13:37	WG1675575
Chloromethane	ND		1.25	1	05/22/2021 13:37	WG1675575
2-Chlorotoluene	ND		0.500	1	05/22/2021 13:37	WG1675575
4-Chlorotoluene	ND		0.500	1	05/22/2021 13:37	WG1675575
1,2-Dibromo-3-Chloropropane	ND		2.50	1	05/22/2021 13:37	WG1675575
1,2-Dibromoethane	ND		0.500	1	05/22/2021 13:37	WG1675575
Dibromomethane	ND		0.500	1	05/22/2021 13:37	WG1675575
1,2-Dichlorobenzene	ND		0.500	1	05/22/2021 13:37	WG1675575
1,3-Dichlorobenzene	ND		0.500	1	05/22/2021 13:37	WG1675575
1,4-Dichlorobenzene	ND		0.500	1	05/22/2021 13:37	WG1675575
Dichlorodifluoromethane	ND		2.50	1	05/22/2021 13:37	WG1675575
1,1-Dichloroethane	ND		0.500	1	05/22/2021 13:37	WG1675575
1,2-Dichloroethane	ND		0.500	1	05/22/2021 13:37	WG1675575
1,1-Dichloroethene	ND		0.500	1	05/22/2021 13:37	WG1675575
cis-1,2-Dichloroethene	ND		0.500	1	05/22/2021 13:37	WG1675575
trans-1,2-Dichloroethene	ND		0.500	1	05/22/2021 13:37	WG1675575
1,2-Dichloropropane	ND		0.500	1	05/22/2021 13:37	WG1675575
1,1-Dichloropropene	ND		0.500	1	05/22/2021 13:37	WG1675575
1,3-Dichloropropane	ND		1.00	1	05/22/2021 13:37	WG1675575
cis-1,3-Dichloropropene	ND		0.500	1	05/22/2021 13:37	WG1675575
trans-1,3-Dichloropropene	ND		0.500	1	05/22/2021 13:37	WG1675575
trans-1,4-Dichloro-2-butene	ND		5.00	1	05/22/2021 13:37	WG1675575
2,2-Dichloropropane	ND		0.500	1	05/22/2021 13:37	WG1675575
Di-isopropyl ether	ND		0.500	1	05/22/2021 13:37	WG1675575
Ethylbenzene	ND		0.500	1	05/22/2021 13:37	WG1675575
Hexachloro-1,3-butadiene	ND		1.00	1	05/22/2021 13:37	WG1675575
2-Hexanone	ND		5.00	1	05/22/2021 13:37	WG1675575
Isopropylbenzene	ND		0.500	1	05/22/2021 13:37	WG1675575
p-Isopropyltoluene	ND		0.500	1	05/22/2021 13:37	WG1675575
2-Butanone (MEK)	ND		5.00	1	05/22/2021 13:37	WG1675575

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methylene Chloride	ND		2.50	1	05/22/2021 13:37	WG1675575
4-Methyl-2-pentanone (MIBK)	ND		5.00	1	05/22/2021 13:37	WG1675575
Methyl tert-butyl ether	ND		0.500	1	05/22/2021 13:37	WG1675575
Naphthalene	ND		2.50	1	05/22/2021 13:37	WG1675575
n-Propylbenzene	ND		0.500	1	05/22/2021 13:37	WG1675575
Styrene	ND		0.500	1	05/22/2021 13:37	WG1675575
1,1,1,2-Tetrachloroethane	ND		0.500	1	05/22/2021 13:37	WG1675575
1,1,2,2-Tetrachloroethane	ND		0.500	1	05/22/2021 13:37	WG1675575
1,1,2-Trichlorotrifluoroethane	ND		0.500	1	05/22/2021 13:37	WG1675575
Tetrachloroethene	ND	J4	0.500	1	05/22/2021 13:37	WG1675575
Tetrahydrofuran	ND		5.00	1	05/22/2021 13:37	WG1675575
Toluene	ND	J4	0.500	1	05/22/2021 13:37	WG1675575
1,2,3-Trichlorobenzene	ND		0.500	1	05/22/2021 13:37	WG1675575
1,2,4-Trichlorobenzene	ND		1.00	1	05/22/2021 13:37	WG1675575
1,1,1-Trichloroethane	ND		0.500	1	05/22/2021 13:37	WG1675575
1,1,2-Trichloroethane	ND		0.500	1	05/22/2021 13:37	WG1675575
Trichloroethene	ND		0.500	1	05/22/2021 13:37	WG1675575
Trichlorofluoromethane	ND		2.50	1	05/22/2021 13:37	WG1675575
1,2,3-Trichloropropane	ND		2.50	1	05/22/2021 13:37	WG1675575
1,2,4-Trimethylbenzene	ND		0.500	1	05/22/2021 13:37	WG1675575
1,3,5-Trimethylbenzene	ND		0.500	1	05/22/2021 13:37	WG1675575
Vinyl chloride	ND		0.500	1	05/22/2021 13:37	WG1675575
m&p-Xylenes	ND		1.00	1	05/22/2021 13:37	WG1675575
o-Xylene	ND		0.500	1	05/22/2021 13:37	WG1675575
Xylenes, Total	ND		1.50	1	05/22/2021 13:37	WG1675575
(S) Toluene-d8	*105*		*80.0-120*		*05/22/2021 13:37*	WG1675575
(S) 4-Bromofluorobenzene	*98.1*		*77.0-126*		*05/22/2021 13:37*	WG1675575
(S) 1,2-Dichloroethane-d4	*113*		*70.0-130*		*05/22/2021 13:37*	WG1675575

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
C12-C22 Hydrocarbons	253		105	1.05	05/20/2021 06:48	WG1673604
C22-C32 Hydrocarbons	315		105	1.05	05/20/2021 06:48	WG1673604
(S) o-Terphenyl	*48.6*	J2	*52.0-156*		*05/20/2021 06:48*	WG1673604

Sample Narrative:

L1353303-02 WG1673604: Sample produced medium emulsion during Extraction process, low surr/spike recoveries due to matrix

Preparation by Method 22CCRA2

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
STLC Extraction	-			1	05/21/2021 16:50	WG1674013
Final pH	5.22			1	05/21/2021 16:50	WG1674013

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chromium	0.495		0.0900	9	06/02/2021 09:25	WG1680866

Method Blank (MB)

(MB) R3657337-1 05/20/21 09:49

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.00200			

L1353302-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1353302-03 05/20/21 09:49 • (DUP) R3657337-3 05/20/21 09:49

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	83.0	83.0	1	0.00591		10

Laboratory Control Sample (LCS)

(LCS) R3657337-2 05/20/21 09:49

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3662238-1 06/02/21 09:08

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chromium	U		0.0126	0.0900

Laboratory Control Sample (LCS)

(LCS) R3662238-2 06/02/21 09:11

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chromium	1.00	1.02	102	80.0-120	

L1357165-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1357165-02 06/02/21 09:14 • (MS) R3662238-4 06/02/21 09:19 • (MSD) R3662238-5 06/02/21 09:22

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chromium	9.00	0.0979	9.33	9.25	103	102	9	75.0-125			0.912	20

Method Blank (MB)

(MB) R3656692-7 05/19/21 20:32

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Chromium	U		0.297	5.00
Lead	U		0.0990	2.00

Laboratory Control Sample (LCS)

(LCS) R3656692-8 05/19/21 20:36

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chromium	100	93.2	93.2	80.0-120	
Lead	100	96.6	96.6	80.0-120	

L1353017-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1353017-01 05/19/21 20:39 • (MS) R3656692-11 05/19/21 20:49 • (MSD) R3656692-12 05/19/21 20:52

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chromium	115	6.98	103	110	83.5	89.3	5	75.0-125			6.26	20
Lead	115	2.94	102	105	85.7	88.3	5	75.0-125			2.82	20

Method Blank (MB)

(MB) R3659017-2 05/17/21 22:49

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPHG C5 - C12	U		0.0332	0.100
(S) a,a,a-Trifluorotoluene(FID)	*98.4*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3659017-1 05/17/21 22:01

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPHG C5 - C12	5.50	5.74	104	72.0-125	
(S) a,a,a-Trifluorotoluene(FID)			*113*	*77.0-120*	

L1352770-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1352770-02 05/18/21 03:51 • (MS) R3659017-3 05/18/21 09:02 • (MSD) R3659017-4 05/18/21 09:25

Analyte	Spike Amount (dry) mg/kg	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
TPHG C5 - C12	103	193	349	363	80.6	87.4	25	10.0-141			3.69	29
(S) a,a,a-Trifluorotoluene(FID)					*95.8*	*95.8*		*77.0-120*				

Method Blank (MB)

(MB) R3657440-2 05/18/21 22:56

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TPHG C5 - C12	U		30.4	100
(S) a,a,a-Trifluorotoluene(FID)	*103*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3657440-1 05/18/21 22:12

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPHG C5 - C12	5500	5590	102	71.0-127	
(S) a,a,a-Trifluorotoluene(FID)			*114*	*78.0-120*	

Method Blank (MB)

(MB) R3659387-2 05/21/21 07:44

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0365	0.0500
Acrylonitrile	U		0.00361	0.0125
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromochloromethane	U		0.000564	0.00500
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
n-Butylbenzene	U		0.00525	0.0125
sec-Butylbenzene	U		0.00288	0.0125
tert-Butylbenzene	U		0.00195	0.00500
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	U		0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	U		0.000600	0.00500
1,4-Dichlorobenzene	0.00125	J	0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00250
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Di-isopropyl ether	U		0.000410	0.00100
Ethylbenzene	U		0.000737	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250

Method Blank (MB)

(MB) R3659387-2 05/21/21 07:44

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
2-Hexanone	U		0.00336	0.0250
Isopropylbenzene	U		0.000425	0.00250
p-Isopropyltoluene	U		0.00255	0.00500
2-Butanone (MEK)	U		0.0635	0.100
Methylene Chloride	U		0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250
Methyl tert-butyl ether	U		0.000350	0.00100
Naphthalene	U		0.00488	0.0125
n-Propylbenzene	U		0.000950	0.00500
Styrene	0.000250	J	0.000229	0.0125
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
Tetrachloroethene	U		0.000896	0.00250
Tetrahydrofuran	U		0.00352	0.0125
Toluene	U		0.00130	0.00500
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Vinyl chloride	U		0.00116	0.00250
Xylenes, Total	U		0.000880	0.00650
o-Xylene	U		0.000880	0.00250
m&p-Xylenes	U		0.00190	0.00400
(S) Toluene-d8	*106*			*75.0-131*
(S) 4-Bromofluorobenzene	*86.1*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*71.6*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3659387-1 05/21/21 06:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	0.625	0.762	122	10.0-160	
Acrylonitrile	0.625	0.633	101	45.0-153	
Benzene	0.125	0.110	88.0	70.0-123	
Bromobenzene	0.125	0.114	91.2	73.0-121	
Bromodichloromethane	0.125	0.107	85.6	73.0-121	
Bromochloromethane	0.125	0.102	81.6	77.0-128	
Bromoform	0.125	0.102	81.6	64.0-132	
Bromomethane	0.125	0.128	102	56.0-147	
n-Butylbenzene	0.125	0.117	93.6	68.0-135	
sec-Butylbenzene	0.125	0.119	95.2	74.0-130	
tert-Butylbenzene	0.125	0.111	88.8	75.0-127	
Carbon tetrachloride	0.125	0.0974	77.9	66.0-128	
Chlorobenzene	0.125	0.113	90.4	76.0-128	
Chlorodibromomethane	0.125	0.110	88.0	74.0-127	
Chloroethane	0.125	0.112	89.6	61.0-134	
Chloroform	0.125	0.0959	76.7	72.0-123	
Chloromethane	0.125	0.121	96.8	51.0-138	
2-Chlorotoluene	0.125	0.117	93.6	75.0-124	
4-Chlorotoluene	0.125	0.123	98.4	75.0-124	
1,2-Dibromo-3-Chloropropane	0.125	0.106	84.8	59.0-130	
1,2-Dibromoethane	0.125	0.115	92.0	74.0-128	
Dibromomethane	0.125	0.108	86.4	75.0-122	
1,2-Dichlorobenzene	0.125	0.113	90.4	76.0-124	
1,3-Dichlorobenzene	0.125	0.115	92.0	76.0-125	
1,4-Dichlorobenzene	0.125	0.115	92.0	77.0-121	
Dichlorodifluoromethane	0.125	0.132	106	43.0-156	
1,1-Dichloroethane	0.125	0.108	86.4	70.0-127	
1,2-Dichloroethane	0.125	0.0966	77.3	65.0-131	
1,1-Dichloroethene	0.125	0.0986	78.9	65.0-131	
cis-1,2-Dichloroethene	0.125	0.0979	78.3	73.0-125	
trans-1,2-Dichloroethene	0.125	0.0943	75.4	71.0-125	
1,2-Dichloropropane	0.125	0.125	100	74.0-125	
1,1-Dichloropropene	0.125	0.102	81.6	73.0-125	
1,3-Dichloropropane	0.125	0.121	96.8	80.0-125	
cis-1,3-Dichloropropene	0.125	0.103	82.4	76.0-127	
trans-1,3-Dichloropropene	0.125	0.110	88.0	73.0-127	
2,2-Dichloropropane	0.125	0.107	85.6	59.0-135	
Di-isopropyl ether	0.125	0.114	91.2	60.0-136	
Ethylbenzene	0.125	0.113	90.4	74.0-126	
Hexachloro-1,3-butadiene	0.125	0.0858	68.6	57.0-150	

Laboratory Control Sample (LCS)

(LCS) R3659387-1 05/21/21 06:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
2-Hexanone	0.625	0.641	103	54.0-147	
Isopropylbenzene	0.125	0.107	85.6	72.0-127	
p-Isopropyltoluene	0.125	0.109	87.2	72.0-133	
2-Butanone (MEK)	0.625	0.711	114	30.0-160	
Methylene Chloride	0.125	0.102	81.6	68.0-123	
4-Methyl-2-pentanone (MIBK)	0.625	0.672	108	56.0-143	
Methyl tert-butyl ether	0.125	0.112	89.6	66.0-132	
Naphthalene	0.125	0.0867	69.4	59.0-130	
n-Propylbenzene	0.125	0.129	103	74.0-126	
Styrene	0.125	0.107	85.6	72.0-127	
1,1,1,2-Tetrachloroethane	0.125	0.100	80.0	74.0-129	
1,1,2,2-Tetrachloroethane	0.125	0.123	98.4	68.0-128	
Tetrachloroethene	0.125	0.118	94.4	70.0-136	
Tetrahydrofuran	0.125	0.135	108	37.0-146	
Toluene	0.125	0.115	92.0	75.0-121	
1,1,2-Trichlorotrifluoroethane	0.125	0.106	84.8	61.0-139	
1,2,3-Trichlorobenzene	0.125	0.0651	52.1	59.0-139	J4
1,2,4-Trichlorobenzene	0.125	0.0843	67.4	62.0-137	
1,1,1-Trichloroethane	0.125	0.0960	76.8	69.0-126	
1,1,2-Trichloroethane	0.125	0.106	84.8	78.0-123	
Trichloroethene	0.125	0.110	88.0	76.0-126	
Trichlorofluoromethane	0.125	0.100	80.0	61.0-142	
1,2,3-Trichloropropane	0.125	0.117	93.6	67.0-129	
1,2,4-Trimethylbenzene	0.125	0.113	90.4	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.108	86.4	73.0-127	
Vinyl chloride	0.125	0.114	91.2	63.0-134	
Xylenes, Total	0.375	0.334	89.1	72.0-127	
o-Xylene	0.125	0.111	88.8	79.0-124	
m&p-Xylenes	0.250	0.223	89.2	76.0-126	
(S) Toluene-d8			*103*	*75.0-131*	
(S) 4-Bromofluorobenzene			*93.6*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*86.5*	*70.0-130*	

L1353207-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1353207-01 05/21/21 14:06 • (MS) R3659387-3 05/21/21 14:25 • (MSD) R3659387-4 05/21/21 14:44

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	50.0	27.4	66.7	59.4	78.6	64.0	80	10.0-160			11.6	40
Acrylonitrile	50.0	ND	44.9	35.8	89.8	71.6	80	10.0-160			22.6	40
Benzene	10.0	ND	8.74	5.38	87.4	53.8	80	10.0-149		J3	47.6	37
Bromobenzene	10.0	ND	9.22	8.27	92.2	82.7	80	10.0-156			10.9	38
Bromodichloromethane	10.0	ND	8.78	6.29	87.8	62.9	80	10.0-143			33.0	37
Bromochloromethane	10.0	ND	7.65	5.35	76.5	53.5	80	10.0-155		J3	35.4	33
Bromoform	10.0	ND	7.88	7.17	78.8	71.7	80	10.0-146			9.44	36
Bromomethane	10.0	ND	7.96	4.93	79.6	49.3	80	10.0-149		J3	47.0	38
n-Butylbenzene	10.0	ND	10.1	8.32	101	83.2	80	10.0-160			19.3	40
sec-Butylbenzene	10.0	ND	9.79	7.33	97.9	73.3	80	10.0-159			28.7	39
tert-Butylbenzene	10.0	ND	9.15	6.71	91.5	67.1	80	10.0-156			30.8	39
Carbon tetrachloride	10.0	ND	7.82	5.04	78.2	50.4	80	10.0-145		J3	43.2	37
Chlorobenzene	10.0	ND	9.09	7.45	90.9	74.5	80	10.0-152			19.8	39
Chlorodibromomethane	10.0	ND	9.50	7.13	95.0	71.3	80	10.0-146			28.5	37
Chloroethane	10.0	ND	8.01	4.73	80.1	47.3	80	10.0-146		J3	51.5	40
Chloroform	10.0	ND	7.70	4.91	77.0	49.1	80	10.0-146		J3	44.3	37
Chloromethane	10.0	ND	7.92	4.78	79.2	47.8	80	10.0-159		J3	49.4	37
2-Chlorotoluene	10.0	ND	9.53	7.21	95.3	72.1	80	10.0-159			27.7	38
4-Chlorotoluene	10.0	ND	9.78	7.72	97.8	77.2	80	10.0-155			23.5	39
1,2-Dibromo-3-Chloropropane	10.0	ND	9.15	9.89	91.5	98.9	80	10.0-151			7.77	39
1,2-Dibromoethane	10.0	ND	9.04	7.41	90.4	74.1	80	10.0-148			19.8	34
Dibromomethane	10.0	ND	8.85	6.79	88.5	67.9	80	10.0-147			26.3	35
1,2-Dichlorobenzene	10.0	ND	9.05	8.07	90.5	80.7	80	10.0-155			11.4	37
1,3-Dichlorobenzene	10.0	ND	8.81	7.37	88.1	73.7	80	10.0-153			17.8	38
1,4-Dichlorobenzene	10.0	ND	9.10	7.71	91.0	77.1	80	10.0-151			16.5	38
Dichlorodifluoromethane	10.0	ND	10.7	5.74	107	57.4	80	10.0-160		J3	60.3	35
1,1-Dichloroethane	10.0	ND	8.85	5.24	88.5	52.4	80	10.0-147		J3	51.2	37
1,2-Dichloroethane	10.0	ND	7.45	5.24	74.5	52.4	80	10.0-148			34.8	35
1,1-Dichloroethene	10.0	ND	6.89	3.85	68.9	38.5	80	10.0-155		J3	56.6	37
cis-1,2-Dichloroethene	10.0	ND	8.08	5.00	80.8	50.0	80	10.0-149		J3	47.1	37
trans-1,2-Dichloroethene	10.0	ND	6.31	3.64	63.1	36.4	80	10.0-150		J3	53.7	37
1,2-Dichloropropane	10.0	ND	9.45	6.57	94.5	65.7	80	10.0-148			36.0	37
1,1-Dichloropropene	10.0	ND	7.41	4.79	74.1	47.9	80	10.0-153		J3	43.0	35
1,3-Dichloropropane	10.0	ND	10.3	8.07	103	80.7	80	10.0-154			24.3	35
cis-1,3-Dichloropropene	10.0	ND	8.39	6.26	83.9	62.6	80	10.0-151			29.1	37
trans-1,3-Dichloropropene	10.0	ND	9.40	7.21	94.0	72.1	80	10.0-148			26.4	37
2,2-Dichloropropane	10.0	ND	8.22	5.06	82.2	50.6	80	10.0-138		J3	47.6	36
Di-isopropyl ether	10.0	ND	9.79	6.79	97.9	67.9	80	10.0-147		J3	36.2	36
Ethylbenzene	10.0	ND	8.83	6.94	88.3	69.4	80	10.0-160			24.0	38
Hexachloro-1,3-butadiene	10.0	ND	11.2	2.16	112	21.6	80	10.0-160		J3	135	40

L1353207-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1353207-01 05/21/21 14:06 • (MS) R3659387-3 05/21/21 14:25 • (MSD) R3659387-4 05/21/21 14:44

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
2-Hexanone	50.0	2.28	56.4	50.6	108	96.6	80	10.0-160			10.8	36
Isopropylbenzene	10.0	ND	8.18	6.32	81.8	63.2	80	10.0-155			25.7	38
p-Isopropyltoluene	10.0	ND	8.91	6.68	89.1	66.8	80	10.0-160			28.6	40
2-Butanone (MEK)	50.0	ND	53.4	55.1	107	110	80	10.0-160			3.13	40
Methylene Chloride	10.0	ND	7.45	4.98	74.5	49.8	80	10.0-141		J3	39.7	37
4-Methyl-2-pentanone (MIBK)	50.0	ND	56.6	46.3	113	92.6	80	10.0-160			20.0	35
Methyl tert-butyl ether	10.0	ND	9.36	7.32	93.6	73.2	80	11.0-147			24.5	35
Naphthalene	10.0	ND	10.7	3.17	107	31.7	80	10.0-160		J3	109	36
n-Propylbenzene	10.0	ND	10.4	7.63	104	76.3	80	10.0-158			30.7	38
Styrene	10.0	ND	8.62	7.35	86.2	73.5	80	10.0-160			15.9	40
1,1,1,2-Tetrachloroethane	10.0	ND	8.48	7.08	84.8	70.8	80	10.0-149			18.0	39
1,1,2,2-Tetrachloroethane	10.0	ND	13.5	24.2	135	242	80	10.0-160		J3 J5	56.8	35
Tetrachloroethene	10.0	ND	8.78	6.35	87.8	63.5	80	10.0-156			32.1	39
Tetrahydrofuran	10.0	ND	9.56	8.29	95.6	82.9	80	10.0-158			14.2	33
Toluene	10.0	ND	10.9	7.94	109	79.4	80	10.0-156			31.4	38
1,1,2-Trichlorotrifluoroethane	10.0	ND	9.26	6.06	92.6	60.6	80	10.0-160		J3	41.8	36
1,2,3-Trichlorobenzene	10.0	ND	7.76	ND	77.6	9.26	80	10.0-160		J3 J6	157	40
1,2,4-Trichlorobenzene	10.0	ND	8.72	2.44	87.2	24.4	80	10.0-160		J3	113	40
1,1,1-Trichloroethane	10.0	ND	7.78	4.89	77.8	48.9	80	10.0-144		J3	45.6	35
1,1,2-Trichloroethane	10.0	ND	10.3	7.50	103	75.0	80	10.0-160			31.5	35
Trichloroethene	10.0	ND	7.96	5.25	79.6	52.5	80	10.0-156		J3	41.0	38
Trichlorofluoromethane	10.0	ND	8.77	4.69	87.7	46.9	80	10.0-160		J3	60.6	40
1,2,3-Trichloropropane	10.0	ND	8.81	9.59	88.1	95.9	80	10.0-156			8.48	35
1,2,4-Trimethylbenzene	10.0	ND	9.16	6.99	91.6	69.9	80	10.0-160			26.9	36
1,3,5-Trimethylbenzene	10.0	ND	8.47	6.43	84.7	64.3	80	10.0-160			27.4	38
Vinyl chloride	10.0	ND	8.01	4.61	80.1	46.1	80	10.0-160		J3	53.9	37
Xylenes, Total	30.0	ND	26.6	21.2	88.7	70.7	80	10.0-160			22.6	38
o-Xylene	10.0	ND	8.67	7.11	86.7	71.1	80	10.0-156			19.8	40
m&p-Xylenes	20.0	ND	17.9	14.1	89.5	70.5	80	10.0-156			23.7	40
(S) Toluene-d8					*108*	*104*		*75.0-131*				
(S) 4-Bromofluorobenzene					*90.8*	*95.5*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*85.4*	*83.2*		*70.0-130*				

Sample Narrative:

OS: Non-target compounds too high to run at a lower dilution.

Method Blank (MB)

(MB) R3658516-3 05/22/21 10:00

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		11.3	25.0
Acrylonitrile	U		0.671	5.00
Benzene	U		0.0941	0.500
Bromobenzene	U		0.118	0.500
Bromodichloromethane	U		0.136	0.500
Bromochloromethane	U		0.128	0.500
Bromoform	U		0.129	0.500
Bromomethane	U		0.605	2.50
n-Butylbenzene	U		0.157	0.500
sec-Butylbenzene	U		0.125	0.500
tert-Butylbenzene	U		0.127	0.500
Carbon disulfide	U		0.0962	0.500
Carbon tetrachloride	U		0.128	0.500
Chlorobenzene	U		0.117	0.500
Chlorodibromomethane	U		0.140	0.500
Chloroethane	U		0.192	2.50
Chloroform	U		0.111	0.500
Chloromethane	U		0.960	1.25
2-Chlorotoluene	U		0.106	0.500
4-Chlorotoluene	U		0.114	0.500
1,2-Dibromo-3-Chloropropane	U		0.276	2.50
1,2-Dibromoethane	U		0.126	0.500
Dibromomethane	U		0.122	0.500
1,2-Dichlorobenzene	U		0.107	0.500
1,3-Dichlorobenzene	U		0.299	0.500
1,4-Dichlorobenzene	U		0.120	0.500
trans-1,4-Dichloro-2-butene	U		0.467	5.00
Dichlorodifluoromethane	U		0.374	2.50
1,1-Dichloroethane	U		0.100	0.500
1,2-Dichloroethane	U		0.0819	0.500
1,1-Dichloroethene	U		0.188	0.500
cis-1,2-Dichloroethene	U		0.126	0.500
trans-1,2-Dichloroethene	U		0.149	0.500
1,2-Dichloropropane	U		0.149	0.500
1,1-Dichloropropene	U		0.142	0.500
1,3-Dichloropropane	U		0.109	1.00
cis-1,3-Dichloropropene	U		0.111	0.500
trans-1,3-Dichloropropene	U		0.118	0.500
2,2-Dichloropropane	U		0.161	0.500
Di-isopropyl ether	U		0.105	0.500

Method Blank (MB)

(MB) R3658516-3 05/22/21 10:00

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.137	0.500
Hexachloro-1,3-butadiene	U		0.337	1.00
2-Hexanone	U		0.787	5.00
Isopropylbenzene	U		0.105	0.500
p-Isopropyltoluene	U		0.120	0.500
2-Butanone (MEK)	U		1.19	5.00
Methylene Chloride	U		0.430	2.50
4-Methyl-2-pentanone (MIBK)	U		0.478	5.00
Methyl tert-butyl ether	U		0.101	0.500
Naphthalene	U		0.174	2.50
n-Propylbenzene	U		0.0993	0.500
Styrene	U		0.118	0.500
1,1,1,2-Tetrachloroethane	U		0.147	0.500
1,1,2,2-Tetrachloroethane	U		0.133	0.500
Tetrachloroethene	U		0.300	0.500
Tetrahydrofuran	U		0.929	5.00
Toluene	U		0.278	0.500
1,1,2-Trichlorotrifluoroethane	U		0.180	0.500
1,2,3-Trichlorobenzene	U		0.164	0.500
1,2,4-Trichlorobenzene	U		0.481	1.00
1,1,1-Trichloroethane	U		0.149	0.500
1,1,2-Trichloroethane	U		0.158	0.500
Trichloroethene	U		0.190	0.500
Trichlorofluoromethane	U		0.160	2.50
1,2,3-Trichloropropane	U		0.237	2.50
1,2,4-Trimethylbenzene	U		0.322	0.500
1,3,5-Trimethylbenzene	U		0.104	0.500
Vinyl chloride	U		0.234	0.500
Xylenes, Total	U		0.174	1.50
o-Xylene	U		0.174	0.500
m&p-Xylenes	U		0.430	1.00
(S) Toluene-d8	*103*			*80.0-120*
(S) 4-Bromofluorobenzene	*98.3*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*115*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3658516-1 05/22/21 08:59

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	25.0	37.8	151	19.0-160	
Acrylonitrile	25.0	27.9	112	55.0-149	
Benzene	5.00	4.69	93.8	70.0-123	
Bromobenzene	5.00	4.77	95.4	73.0-121	
Bromodichloromethane	5.00	4.52	90.4	75.0-120	
Bromochloromethane	5.00	4.10	82.0	76.0-122	
Bromoform	5.00	4.10	82.0	68.0-132	
Bromomethane	5.00	4.23	84.6	10.0-160	
n-Butylbenzene	5.00	4.78	95.6	73.0-125	
sec-Butylbenzene	5.00	4.87	97.4	75.0-125	
tert-Butylbenzene	5.00	4.63	92.6	76.0-124	
Carbon disulfide	5.00	3.98	79.6	61.0-128	
Carbon tetrachloride	5.00	4.22	84.4	68.0-126	
Chlorobenzene	5.00	4.16	83.2	80.0-121	
Chlorodibromomethane	5.00	4.04	80.8	77.0-125	
Chloroethane	5.00	4.47	89.4	47.0-150	
Chloroform	5.00	4.38	87.6	73.0-120	
Chloromethane	5.00	4.91	98.2	41.0-142	
2-Chlorotoluene	5.00	4.86	97.2	76.0-123	
4-Chlorotoluene	5.00	4.88	97.6	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	4.28	85.6	58.0-134	
1,2-Dibromoethane	5.00	4.23	84.6	80.0-122	
Dibromomethane	5.00	4.49	89.8	80.0-120	
1,2-Dichlorobenzene	5.00	4.38	87.6	79.0-121	
1,3-Dichlorobenzene	5.00	4.40	88.0	79.0-120	
1,4-Dichlorobenzene	5.00	4.16	83.2	79.0-120	
trans-1,4-Dichloro-2-butene	5.00	4.10	82.0	33.0-144	
Dichlorodifluoromethane	5.00	5.01	100	51.0-149	
1,1-Dichloroethane	5.00	4.77	95.4	70.0-126	
1,2-Dichloroethane	5.00	4.58	91.6	70.0-128	
1,1-Dichloroethene	5.00	3.93	78.6	71.0-124	
cis-1,2-Dichloroethene	5.00	4.32	86.4	73.0-120	
trans-1,2-Dichloroethene	5.00	4.08	81.6	73.0-120	
1,2-Dichloropropane	5.00	4.72	94.4	77.0-125	
1,1-Dichloropropene	5.00	4.48	89.6	74.0-126	
1,3-Dichloropropane	5.00	4.52	90.4	80.0-120	
cis-1,3-Dichloropropene	5.00	4.69	93.8	80.0-123	
trans-1,3-Dichloropropene	5.00	4.59	91.8	78.0-124	
2,2-Dichloropropane	5.00	4.37	87.4	58.0-130	
Di-isopropyl ether	5.00	5.24	105	58.0-138	

Laboratory Control Sample (LCS)

(LCS) R3658516-1 05/22/21 08:59

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Ethylbenzene	5.00	4.24	84.8	79.0-123	
Hexachloro-1,3-butadiene	5.00	3.57	71.4	54.0-138	
2-Hexanone	25.0	26.1	104	67.0-149	
Isopropylbenzene	5.00	4.40	88.0	76.0-127	
p-Isopropyltoluene	5.00	4.87	97.4	76.0-125	
2-Butanone (MEK)	25.0	31.5	126	44.0-160	
Methylene Chloride	5.00	4.00	80.0	67.0-120	
4-Methyl-2-pentanone (MIBK)	25.0	27.0	108	68.0-142	
Methyl tert-butyl ether	5.00	5.34	107	68.0-125	
Naphthalene	5.00	4.28	85.6	54.0-135	
n-Propylbenzene	5.00	5.16	103	77.0-124	
Styrene	5.00	4.43	88.6	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	4.19	83.8	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	5.07	101	65.0-130	
Tetrachloroethene	5.00	3.59	71.8	72.0-132	J4
Tetrahydrofuran	5.00	5.19	104	41.0-146	
Toluene	5.00	3.84	76.8	79.0-120	J4
1,1,2-Trichlorotrifluoroethane	5.00	4.07	81.4	69.0-132	
1,2,3-Trichlorobenzene	5.00	3.17	63.4	50.0-138	
1,2,4-Trichlorobenzene	5.00	3.59	71.8	57.0-137	
1,1,1-Trichloroethane	5.00	4.34	86.8	73.0-124	
1,1,2-Trichloroethane	5.00	4.13	82.6	80.0-120	
Trichloroethene	5.00	3.95	79.0	78.0-124	
Trichlorofluoromethane	5.00	4.39	87.8	59.0-147	
1,2,3-Trichloropropane	5.00	4.26	85.2	73.0-130	
1,2,4-Trimethylbenzene	5.00	4.83	96.6	76.0-121	
1,3,5-Trimethylbenzene	5.00	4.73	94.6	76.0-122	
Vinyl chloride	5.00	4.51	90.2	67.0-131	
Xylenes, Total	15.0	12.8	85.3	79.0-123	
o-Xylene	5.00	4.33	86.6	80.0-122	
m&p-Xylenes	10.0	8.46	84.6	80.0-122	
(S) Toluene-d8			*100*	*80.0-120*	
(S) 4-Bromofluorobenzene			*101*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*113*	*70.0-130*	

Method Blank (MB)

(MB) R3656817-1 05/20/21 00:19

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
C12-C22 Hydrocarbons	U		33.0	100
C22-C32 Hydrocarbons	U		33.0	100
(S) o-Terphenyl	*101*			*52.0-156*

Laboratory Control Sample (LCS)

(LCS) R3656817-2 05/20/21 00:45

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
C22-C32 Hydrocarbons	750	772	103	50.0-150	
C12-C22 Hydrocarbons	750	870	116	50.0-150	
(S) o-Terphenyl			*100*	*52.0-156*	

L1352832-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1352832-02 05/20/21 03:46 • (MS) R3656817-3 05/20/21 04:12 • (MSD) R3656817-4 05/20/21 04:38

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C22-C32 Hydrocarbons	714	108	760	890	91.3	110	1	50.0-150			15.8	20
C12-C22 Hydrocarbons	714	705	1360	1560	91.7	120	1	50.0-150			13.7	20
(S) o-Terphenyl					*85.8*	*99.5*		*52.0-156*				

Method Blank (MB)

(MB) R3656222-1 05/18/21 22:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C12-C22 Hydrocarbons	U		0.733	4.00
C22-C32 Hydrocarbons	U		1.33	4.00
(S) o-Terphenyl	*77.0*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3656222-2 05/18/21 22:17

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C22-C32 Hydrocarbons	25.0	17.3	69.2	50.0-150	
C12-C22 Hydrocarbons	25.0	18.4	73.6	50.0-150	
(S) o-Terphenyl			*70.1*	*18.0-148*	

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

B013

CHAIN OF CUSTODY RECORD

Terracon

Laboratory:
Address:

Office Location: Sacramento, CA
Phone:
Project Manager: Kristin Stout
Contact: see notes section
Sampler's Name: Marshall Carter
PO/SO #:
Sampler's Signature:

Project Number: NB215024
Project Name: Millbrae Billboard

ANALYSIS REQUESTED

LAB USE ONLY
DUE DATE:
TEMP OF COOLER WHEN RECEIVED (°C)
Page 1 of 1

U3533303

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	No. Type of Containers: 8 oz jar	4 oz jar	40 mL MeOH	40 mL HCL VOA	TPH (GRO, DRO, ORO) by 8015	VOCs by 8260B	Chromium and Lead 6020	WET				Lab Sample ID
S	5/13/21	0930		X	CPT1	6	7	1	–	1		X	X	X	X				-01
W	5/13/21	1040		X	CPT1-GW						MC	X	X						-02

TURNAROUND TIME: [X] Normal [ ] 48-Hour Rush [ ] 24-Hour Rush
TRRP Laboratory Review Checklist [ ] Yes [ ] No

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
MC	5/13/21	1541	3,0°C on ice	5/13/21	1541
	5/13/21	1557			
				05/14/21	08:00

NOTES: 2x 40z.s

Send results to:
kristin.stout
brian.carey @terracon.com
steve.claar

Site Address: 400 E. Millbrae Ave
Millbrae, CA

Matrix: WW-Wastewater; W - Water; S - Soil; L - Liquid; A - Air Bag; C - Charcoal tube; SL - Sludge

Container: VOA - 40 ml vial; A/G - Amber Glass 1L; 250 ml = Glass wide mouth; P/O - Plastic or other _____

Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form

Client: TERRASCA	L1353303	
Cooler Received/Opened On: 5 / 14 / 21 Temperature:	0.5	
Received By: Gisely Quiles		
Signature: Gisely Quiles		

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	✓		
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

Brian Ford

From: Stout, Kristin A <Kristin.Stout@terracon.com>
Sent: Wednesday, May 26, 2021 2:00 PM
To: Brian Ford; Carey, Brian P; Claar, Steven N
Subject: RE: Proj NB215024 Prelim Report L1353303

Yes, please analyze the Cr – thank you.

Kristin Stout
Department Manager I Environmental

Terracon
50 Goldenland Court, Suite 100 I Sacramento, California 95834
D (916) 246 5098 I F (916) 928 4697 I M (949) 280 3301
kristin.stout@terracon.com I terracon.com

From: Brian Ford <Brian.Ford@pacelabs.com>
Sent: Wednesday, May 26, 2021 11:51 AM
To: Stout, Kristin A <Kristin.Stout@terracon.com>; Carey, Brian P <Brian.Carey@terracon.com>; Claar, Steven N <Steven.Claar@terracon.com>
Subject: Proj NB215024 Prelim Report L1353303

All initial analyses are now complete and included in the attached prelim report. Would you like Cr analyzed on the STLC extract, or would you like the report finalized as is?

Thanks,

Brian Ford
Project Manager 2 / Pace National
12065 Lebanon Road | Mt. Juliet, TN 37122
Office: 615.773.9772
brian.ford@pacelabs.com

Terracon provides environmental, facilities, geotechnical, and materials consulting engineering services delivered with responsiveness, resourcefulness, and reliability.

Terracon appreciates this opportunity to provide you with our environmental services. Should you have any questions or require additional information, please do not hesitate to contact our office.

Sincerely,
Terracon Consultants, Inc.

DRAFT
Kristin Stout
Department Manager

DRAFT
Scott Gable, P.G. 6366
Regional Services Specialist

Attachments: Exhibit 1 – Site Diagram
Laboratory Analytical Report, dated June 4, 2021

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