

APPENDIX A: CALEEMOD OUTPUT SHEETS



San Dieguito Valley Groundwater Desalination Design Pilot

San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.40	1000sqft	0.01	400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (Ib/MWhr)	720.49	CH4 Intensity (Ib/MWhr)	0.029	N2O Intensity ((Ib/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Per contractor and engineer.

Off-road Equipment - from contractor and engineer.

Trips and VMT - from contractor and engineer

Grading -

Vehicle Trips - from contractor and engineer.

Consumer Products - no paved areas.

Area Coating - not paved.

Energy Use -

Construction Off-road Equipment Mitigation -

Stationary Sources - Emergency Generators and Fire Pumps -

Operational Off-Road Equipment - from engineer.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Parking	24	0
tblConstructionPhase	NumDays	2.00	14.00
tblConstructionPhase	NumDays	1.00	7.00
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	305.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	24.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	WorkerTripNumber	10.00	6.00
tblTripsAndVMT	WorkerTripNumber	18.00	6.00
tblTripsAndVMT	WorkerTripNumber	10.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblVehicleTrips	ST_TR	0.00	2.50
tblVehicleTrips	SU_TR	0.00	2.50

CalEEMod Version: CalEEMod.2016.3.2

Page 4 of 23

San Dieguito Valley Groundwater Desalination Design Pilot - San Diego County, Summer

	tblVehicleTrips	WD_TR	0.00	2.50
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2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	со	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year					lb/	day							lb/d	day		
2019	2.8228	31.7752	22.4120	0.0522	0.0696	1.4498	1.4991	0.0189	1.3346	1.3476	0.0000	5,162.199 0	5,162.199 0	1.6121	0.0000	5,202.500 1
Maximum	2.8228	31.7752	22.4120	0.0522	0.0696	1.4498	1.4991	0.0189	1.3346	1.3476	0.0000	5,162.199 0	5,162.199 0	1.6121	0.0000	5,202.500 1

Mitigated Construction

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year					lb/	day							lb/c	day		
2019	2.8228	31.7752	22.4120	0.0522	0.0696	1.4498	1.4991	0.0189	1.3346	1.3476	0.0000	5,162.199 0	5,162.199 0	1.6121	0.0000	5,202.500 1
Maximum	2.8228	31.7752	22.4120	0.0522	0.0696	1.4498	1.4991	0.0189	1.3346	1.3476	0.0000	5,162.199 0	5,162.199 0	1.6121	0.0000	5,202.500 1

	ROG	NOx	СО	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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/d	lay		
Area	0.0000	0.0000	4.0000e- 005	0.0000		0.0000	0.0000	1 1 1	0.0000	0.0000		9.0000e- 005	9.0000e- 005	0.0000		9.0000e- 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
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
Offroad	1.2695	10.5871	11.2877	0.0197		0.6216	0.6216		0.6216	0.6216		1,869.103 7	1,869.103 7	0.1118		1,871.899 3
Total	1.2695	10.5871	11.2877	0.0197	0.0000	0.6216	0.6216	0.0000	0.6216	0.6216		1,869.103 8	1,869.103 8	0.1118	0.0000	1,871.899 4

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category		•				b/day				-			lb/o	day		
Area	0.0000	0.0000) 4.000 005	0e- 0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e- 005	9.0000e- 005	0.0000		9.0000e- 005
Energy	0.0000	0.0000) 0.000	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	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Offroad	1.2695	10.587′	1 11.28	77 0.0197		0.6216	0.6216		0.6216	0.6216		1,869.103 7	1,869.103 7	0.1118		1,871.899 3
Total	1.2695	10.5871	1 11.28	77 0.0197	0.0000	0.6216	0.6216	0.0000	0.6216	0.6216		1,869.103 8	1,869.103 8	0.1118	0.0000	1,871.899 4
	ROG		NOx	со	SO2 Fi	ugitive Ext PM10 P	naust PM M10 T	/110 Fu	gitive Exh M2.5 Pl	naust PM M2.5 To	2.5 Bio- tal	CO2 NBio	CO2 Total	CO2 CH	14 N:	20 CO2

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

3.0 Construction Detail

0.00

0.00

0.00

0.00

0.00

0.00

Construction Phase

Percent

Reduction

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site preparation	Site Preparation	1/2/2019	1/10/2019	5	7	
2	Boring, well, and discharge construction	Grading	1/11/2019	1/30/2019	5	14	
3	Surface restoration	Paving	1/31/2019	2/6/2019	5	5	
4	Pretreatment test	Paving	8/12/2019	8/16/2019	5	5	

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Page 7 of 23

San Dieguito Valley Groundwater Desalination Design Pilot - San Diego County, Summer

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.01

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
Site preparation	Dumpers/Tenders	1	4.00	16	0.38
Site preparation	Graders	0	0.00	187	0.41
Site preparation	Other Construction Equipment	2	8.00	172	0.42
Site preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Boring, well, and discharge construction	Bore/Drill Rigs	1	24.00	221	0.50
Boring, well, and discharge construction	Concrete/Industrial Saws	0	0.00	81	0.73
Boring, well, and discharge construction	Dumpers/Tenders	1	4.00	16	0.38
Boring, well, and discharge construction	Other Construction Equipment	3	8.00	172	0.42
Boring, well, and discharge construction	Rubber Tired Dozers	0	0.00	247	0.40
Boring, well, and discharge construction	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Surface restoration	Cement and Mortar Mixers	0	0.00	9	0.56
Surface restoration	Cranes	0	0.00	231	0.29
Surface restoration	Dumpers/Tenders	1	4.00	16	0.38
Surface restoration	Forklifts	0	0.00	89	0.20
Surface restoration	Other Construction Equipment	2	8.00	172	0.42
Surface restoration	Pavers	0	0.00	130	0.42
Surface restoration	Rollers	0	0.00	80	0.38
Surface restoration	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pretreatment test	Cement and Mortar Mixers	0	0.00	9	0.56
Pretreatment test	Other Construction Equipment	1	24.00	172	0.42
Pretreatment test	Other Construction Equipment	1	8.00	172	0.42
Pretreatment test	Pavers	0	0.00	130	0.42
Pretreatment test	Rollers	0	0.00	80	0.38
Pretreatment test	Tractors/Loaders/Backhoes	0	0.00	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
Site preparation	4	6.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Boring, well, and discharge construction	7	6.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Surface restoration	4	6.00	0.00	1.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Pretreatment test	2	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

3.2 Site preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/c	day		
Fugitive Dust	11 11 11	, , ,			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.3196	13.8665	10.7255	0.0158		0.7599	0.7599		0.6998	0.6998		1,562.294 9	1,562.294 9	0.4879		1,574.493 0
Total	1.3196	13.8665	10.7255	0.0158	0.0000	0.7599	0.7599	0.0000	0.6998	0.6998		1,562.294 9	1,562.294 9	0.4879		1,574.493 0

3.2 Site preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0138	0.3720	0.0960	8.3000e- 004	0.0203	2.5900e- 003	0.0229	5.8500e- 003	2.4800e- 003	8.3200e- 003		88.8050	88.8050	6.8600e- 003		88.9764
Worker	0.0236	0.0164	0.1857	5.2000e- 004	0.0493	3.5000e- 004	0.0496	0.0131	3.2000e- 004	0.0134		52.2120	52.2120	1.6700e- 003		52.2537
Total	0.0374	0.3884	0.2817	1.3500e- 003	0.0696	2.9400e- 003	0.0725	0.0189	2.8000e- 003	0.0217		141.0170	141.0170	8.5300e- 003		141.2301

Mitigated Construction On-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/c	day		
Fugitive Dust			1		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.3196	13.8665	10.7255	0.0158		0.7599	0.7599		0.6998	0.6998	0.0000	1,562.294 9	1,562.294 9	0.4879		1,574.493 0
Total	1.3196	13.8665	10.7255	0.0158	0.0000	0.7599	0.7599	0.0000	0.6998	0.6998	0.0000	1,562.294 9	1,562.294 9	0.4879		1,574.493 0

3.2 Site preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0138	0.3720	0.0960	8.3000e- 004	0.0203	2.5900e- 003	0.0229	5.8500e- 003	2.4800e- 003	8.3200e- 003		88.8050	88.8050	6.8600e- 003		88.9764
Worker	0.0236	0.0164	0.1857	5.2000e- 004	0.0493	3.5000e- 004	0.0496	0.0131	3.2000e- 004	0.0134		52.2120	52.2120	1.6700e- 003		52.2537
Total	0.0374	0.3884	0.2817	1.3500e- 003	0.0696	2.9400e- 003	0.0725	0.0189	2.8000e- 003	0.0217		141.0170	141.0170	8.5300e- 003		141.2301

3.3 Boring, well, and discharge construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	lay		
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1 1 1	0.0000			0.0000
Off-Road	2.7992	31.7587	22.2264	0.0517		1.4495	1.4495		1.3342	1.3342		5,109.987 0	5,109.987 0	1.6104		5,150.246 4
Total	2.7992	31.7587	22.2264	0.0517	0.0000	1.4495	1.4495	0.0000	1.3342	1.3342		5,109.987 0	5,109.987 0	1.6104		5,150.246 4

3.3 Boring, well, and discharge construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/c	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	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	0.0236	0.0164	0.1857	5.2000e- 004	0.0493	3.5000e- 004	0.0496	0.0131	3.2000e- 004	0.0134		52.2120	52.2120	1.6700e- 003		52.2537
Total	0.0236	0.0164	0.1857	5.2000e- 004	0.0493	3.5000e- 004	0.0496	0.0131	3.2000e- 004	0.0134		52.2120	52.2120	1.6700e- 003		52.2537

Mitigated Construction On-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/d	day		
Fugitive Dust		1 1 1 1			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1 1 1	0.0000			0.0000
Off-Road	2.7992	31.7587	22.2264	0.0517		1.4495	1.4495		1.3342	1.3342	0.0000	5,109.987 0	5,109.987 0	1.6104		5,150.246 4
Total	2.7992	31.7587	22.2264	0.0517	0.0000	1.4495	1.4495	0.0000	1.3342	1.3342	0.0000	5,109.987 0	5,109.987 0	1.6104		5,150.246 4

3.3 Boring, well, and discharge construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	со	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/o	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	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	0.0236	0.0164	0.1857	5.2000e- 004	0.0493	3.5000e- 004	0.0496	0.0131	3.2000e- 004	0.0134		52.2120	52.2120	1.6700e- 003		52.2537
Total	0.0236	0.0164	0.1857	5.2000e- 004	0.0493	3.5000e- 004	0.0496	0.0131	3.2000e- 004	0.0134		52.2120	52.2120	1.6700e- 003		52.2537

3.4 Surface restoration - 2019

Unmitigated Construction On-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Off-Road	1.3196	13.8665	10.7255	0.0158		0.7599	0.7599		0.6998	0.6998		1,562.294 9	1,562.294 9	0.4879		1,574.493 0
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.3196	13.8665	10.7255	0.0158		0.7599	0.7599		0.6998	0.6998		1,562.294 9	1,562.294 9	0.4879		1,574.493 0

3.4 Surface restoration - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	day		
Hauling	1.7400e- 003	0.0601	0.0130	1.6000e- 004	3.4900e- 003	2.3000e- 004	3.7200e- 003	9.6000e- 004	2.2000e- 004	1.1700e- 003		17.3095	17.3095	1.5300e- 003		17.3478
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
Worker	0.0236	0.0164	0.1857	5.2000e- 004	0.0493	3.5000e- 004	0.0496	0.0131	3.2000e- 004	0.0134		52.2120	52.2120	1.6700e- 003		52.2537
Total	0.0253	0.0765	0.1986	6.8000e- 004	0.0528	5.8000e- 004	0.0534	0.0140	5.4000e- 004	0.0146		69.5214	69.5214	3.2000e- 003		69.6014

Mitigated Construction On-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	lay		
Off-Road	1.3196	13.8665	10.7255	0.0158		0.7599	0.7599		0.6998	0.6998	0.0000	1,562.294 9	1,562.294 9	0.4879		1,574.493 0
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.3196	13.8665	10.7255	0.0158		0.7599	0.7599		0.6998	0.6998	0.0000	1,562.294 9	1,562.294 9	0.4879		1,574.493 0

3.4 Surface restoration - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Hauling	1.7400e- 003	0.0601	0.0130	1.6000e- 004	3.4900e- 003	2.3000e- 004	3.7200e- 003	9.6000e- 004	2.2000e- 004	1.1700e- 003		17.3095	17.3095	1.5300e- 003		17.3478
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
Worker	0.0236	0.0164	0.1857	5.2000e- 004	0.0493	3.5000e- 004	0.0496	0.0131	3.2000e- 004	0.0134		52.2120	52.2120	1.6700e- 003		52.2537
Total	0.0253	0.0765	0.1986	6.8000e- 004	0.0528	5.8000e- 004	0.0534	0.0140	5.4000e- 004	0.0146		69.5214	69.5214	3.2000e- 003		69.6014

3.5 Pretreatment test - 2019

Unmitigated Construction On-Site

	ROG	NOx	со	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	lay		
Off-Road	2.1000	22.5928	16.5948	0.0247		1.1898	1.1898		1.0946	1.0946		2,448.565 7	2,448.565 7	0.7747		2,467.933 2
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.1000	22.5928	16.5948	0.0247		1.1898	1.1898		1.0946	1.0946		2,448.565 7	2,448.565 7	0.7747		2,467.933 2

3.5 Pretreatment test - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	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
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/d	lay		
Off-Road	2.1000	22.5928	16.5948	0.0247		1.1898	1.1898		1.0946	1.0946	0.0000	2,448.565 7	2,448.565 7	0.7747		2,467.933 2
Paving	0.0000	1 1 1 1				0.0000	0.0000		0.0000	0.0000		 	0.0000			0.0000
Total	2.1000	22.5928	16.5948	0.0247		1.1898	1.1898		1.0946	1.0946	0.0000	2,448.565 7	2,448.565 7	0.7747		2,467.933 2

3.5 Pretreatment test - 2019

Mitigated Construction Off-Site

	ROG	NOx	со	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	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
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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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

4.2 Trip Summary Information

	Avei	rage Daily Trip Ra	ate	Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

		Miles			Trip %			Trip Purpos	е %
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
Other Non-Asphalt Surfaces	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
Other Non-Asphalt Surfaces	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271

5.0 Energy Detail

Historical Energy Use: N

Page 19 of 23

San Dieguito Valley Groundwater Desalination Design Pilot - San Diego County, Summer

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

<u>Unmitigated</u>

	NaturalGa s Use	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr					lb/d	day							lb/c	lay		
Other Non- Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Page 20 of 23

San Dieguito Valley Groundwater Desalination Design Pilot - San Diego County, Summer

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGa s Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr					lb/d	day							lb/c	lay		
Other Non- Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	1 1 1	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/	day							lb/d	day		
Mitigated	0.0000	0.0000	4.0000e- 005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e- 005	9.0000e- 005	0.0000		9.0000e- 005
Unmitigated	0.0000	0.0000	4.0000e- 005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e- 005	9.0000e- 005	0.0000		9.0000e- 005

6.2 Area by SubCategory

<u>Unmitigated</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day								lb/day							
Architectural Coating	0.0000				1 1 1	0.0000	0.0000	1 1 1	0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	4.0000e- 005	0.0000		0.0000	0.0000	1 1 1 1	0.0000	0.0000		9.0000e- 005	9.0000e- 005	0.0000		9.0000e- 005
Total	0.0000	0.0000	4.0000e- 005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e- 005	9.0000e- 005	0.0000		9.0000e- 005

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory					lb/o	day							lb/d	day		
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	4.0000e- 005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e- 005	9.0000e- 005	0.0000		9.0000e- 005
Total	0.0000	0.0000	4.0000e- 005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e- 005	9.0000e- 005	0.0000		9.0000e- 005

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Pumps	1	24.00	305	84	0.74	Diesel

UnMitigated/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
Equipment Type					lb/o	day							lb/c	lay		
Pumps	1.2695	10.5871	11.2877	0.0197		0.6216	0.6216	1	0.6216	0.6216		1,869.103 7	1,869.103 7	0.1118		1,871.899 3
Total	1.2695	10.5871	11.2877	0.0197		0.6216	0.6216		0.6216	0.6216		1,869.103 7	1,869.103 7	0.1118		1,871.899 3

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Page 23 of 23

San Dieguito Valley Groundwater Desalination Design Pilot - San Diego County, Summer

Boilers

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

11.0 Vegetation

San Dieguito Valley Groundwater Desalination Design Pilot

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.40	1000sqft	0.01	400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (Ib/MWhr)	720.49	CH4 Intensity (Ib/MWhr)	0.029	N2O Intensity ((Ib/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Per contractor and engineer.

Off-road Equipment - from contractor and engineer.

Trips and VMT - from contractor and engineer

Grading -

Vehicle Trips - from contractor and engineer.

Consumer Products - no paved areas.

Area Coating - not paved.

Energy Use -

Construction Off-road Equipment Mitigation -

Stationary Sources - Emergency Generators and Fire Pumps -

Operational Off-Road Equipment - from engineer.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Parking	24	0
tblConstructionPhase	NumDays	2.00	14.00
tblConstructionPhase	NumDays	1.00	7.00
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	305.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	24.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	WorkerTripNumber	10.00	6.00
tblTripsAndVMT	WorkerTripNumber	18.00	6.00
tblTripsAndVMT	WorkerTripNumber	10.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblVehicleTrips	ST_TR	0.00	2.50
tblVehicleTrips	SU_TR	0.00	2.50

Page 4 of 23

San Dieguito Valley Groundwater Desalination Design Pilot - San Diego County, Winter

tblVehicleTrips	WD_TR	0.00	2.50

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year					lb/	day							lb/d	day		
2019	2.8258	31.7772	22.4018	0.0522	0.0696	1.4498	1.4991	0.0189	1.3346	1.3476	0.0000	5,159.001 9	5,159.001 9	1.6120	0.0000	5,199.300 8
Maximum	2.8258	31.7772	22.4018	0.0522	0.0696	1.4498	1.4991	0.0189	1.3346	1.3476	0.0000	5,159.001 9	5,159.001 9	1.6120	0.0000	5,199.300 8

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year					lb/	day							lb/c	day		
2019	2.8258	31.7772	22.4018	0.0522	0.0696	1.4498	1.4991	0.0189	1.3346	1.3476	0.0000	5,159.001 9	5,159.001 9	1.6120	0.0000	5,199.300 8
Maximum	2.8258	31.7772	22.4018	0.0522	0.0696	1.4498	1.4991	0.0189	1.3346	1.3476	0.0000	5,159.001 9	5,159.001 9	1.6120	0.0000	5,199.300 8

	ROG	NOx	СО	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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/	day							lb/d	lay		
Area	0.0000	0.0000	4.0000e- 005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e- 005	9.0000e- 005	0.0000		9.0000e- 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
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
Offroad	1.2695	10.5871	11.2877	0.0197		0.6216	0.6216		0.6216	0.6216		1,869.103 7	1,869.103 7	0.1118		1,871.899 3
Total	1.2695	10.5871	11.2877	0.0197	0.0000	0.6216	0.6216	0.0000	0.6216	0.6216		1,869.103 8	1,869.103 8	0.1118	0.0000	1,871.899 4

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category		•				b/day							lb/o	day		
Area	0.0000	0.0000) 4.000 005	0e- 0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e- 005	9.0000e- 005	0.0000		9.0000e- 005
Energy	0.0000	0.0000) 0.000	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) 0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Offroad	1.2695	10.5871	1 11.28	.77 0.0197		0.6216	0.6216		0.6216	0.6216		1,869.103 7	1,869.103 7	0.1118		1,871.899 3
Total	1.2695	10.5871	1 11.28	77 0.0197	0.0000	0.6216	0.6216	0.0000	0.6216	0.6216		1,869.103 8	1,869.103 8	0.1118	0.0000	1,871.899 4
	ROG		NOx	со	SO2 Fi	ugitive Exl PM10 P	haust Pl M10 T	M10 Fu otal P	gitive ExI M2.5 P	naust PM2 M2.5 To	2.5 Bio- tal	CO2 NBio	CO2 Total	CO2 CI	H4 Ni	20 CO2

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

0.00

3.0 Construction Detail

0.00

0.00

0.00

0.00

0.00

0.00

Construction Phase

Percent

Reduction

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site preparation	Site Preparation	1/2/2019	1/10/2019	5	7	
2	Boring, well, and discharge construction	Grading	1/11/2019	1/30/2019	5	14	
3	Surface restoration	Paving	1/31/2019	2/6/2019	5	5	
4	Pretreatment test	Paving	8/12/2019	8/16/2019	5	5	

Page 7 of 23

San Dieguito Valley Groundwater Desalination Design Pilot - San Diego County, Winter

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.01

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
Site preparation	Dumpers/Tenders	1	4.00	16	0.38
Site preparation	Graders	0	0.00	187	0.41
Site preparation	Other Construction Equipment	2	8.00	172	0.42
Site preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Boring, well, and discharge construction	Bore/Drill Rigs	1	24.00	221	0.50
Boring, well, and discharge construction	Concrete/Industrial Saws	0	0.00	81	0.73
Boring, well, and discharge construction	Dumpers/Tenders	1	4.00	16	0.38
Boring, well, and discharge construction	Other Construction Equipment	3	8.00	172	0.42
Boring, well, and discharge construction	Rubber Tired Dozers	0	0.00	247	0.40
Boring, well, and discharge construction	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Surface restoration	Cement and Mortar Mixers	0	0.00	9	0.56
Surface restoration	Cranes	0	0.00	231	0.29
Surface restoration	Dumpers/Tenders	1	4.00	16	0.38
Surface restoration	Forklifts	0	0.00	89	0.20
Surface restoration	Other Construction Equipment	2	8.00	172	0.42
Surface restoration	Pavers	0	0.00	130	0.42
Surface restoration	Rollers	0	0.00	80	0.38
Surface restoration	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pretreatment test	Cement and Mortar Mixers	0	0.00	9	0.56
Pretreatment test	Other Construction Equipment	1	24.00	172	0.42
Pretreatment test	Other Construction Equipment	1	8.00	172	0.42
Pretreatment test	Pavers	0	0.00	130	0.42
Pretreatment test	Rollers	0	0.00	80	0.38
Pretreatment test	Tractors/Loaders/Backhoes	0	0.00	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
Site preparation	4	6.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Boring, well, and discharge construction	7	6.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Surface restoration	4	6.00	0.00	1.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Pretreatment test	2	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

3.2 Site preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/c	day		
Fugitive Dust		1 1 1			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.3196	13.8665	10.7255	0.0158		0.7599	0.7599		0.6998	0.6998		1,562.294 9	1,562.294 9	0.4879		1,574.493 0
Total	1.3196	13.8665	10.7255	0.0158	0.0000	0.7599	0.7599	0.0000	0.6998	0.6998		1,562.294 9	1,562.294 9	0.4879		1,574.493 0

3.2 Site preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0144	0.3723	0.1065	8.1000e- 004	0.0203	2.6300e- 003	0.0229	5.8500e- 003	2.5200e- 003	8.3700e- 003		86.5501	86.5501	7.2900e- 003		86.7324
Worker	0.0266	0.0185	0.1754	4.9000e- 004	0.0493	3.5000e- 004	0.0496	0.0131	3.2000e- 004	0.0134		49.0148	49.0148	1.5800e- 003		49.0544
Total	0.0410	0.3907	0.2819	1.3000e- 003	0.0696	2.9800e- 003	0.0726	0.0189	2.8400e- 003	0.0218		135.5649	135.5649	8.8700e- 003		135.7868

Mitigated Construction On-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/c	lay		
Fugitive Dust		1 1 1 1			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1 1 1	0.0000			0.0000
Off-Road	1.3196	13.8665	10.7255	0.0158		0.7599	0.7599		0.6998	0.6998	0.0000	1,562.294 9	1,562.294 9	0.4879		1,574.493 0
Total	1.3196	13.8665	10.7255	0.0158	0.0000	0.7599	0.7599	0.0000	0.6998	0.6998	0.0000	1,562.294 9	1,562.294 9	0.4879		1,574.493 0

3.2 Site preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0144	0.3723	0.1065	8.1000e- 004	0.0203	2.6300e- 003	0.0229	5.8500e- 003	2.5200e- 003	8.3700e- 003		86.5501	86.5501	7.2900e- 003		86.7324
Worker	0.0266	0.0185	0.1754	4.9000e- 004	0.0493	3.5000e- 004	0.0496	0.0131	3.2000e- 004	0.0134		49.0148	49.0148	1.5800e- 003		49.0544
Total	0.0410	0.3907	0.2819	1.3000e- 003	0.0696	2.9800e- 003	0.0726	0.0189	2.8400e- 003	0.0218		135.5649	135.5649	8.8700e- 003		135.7868

3.3 Boring, well, and discharge construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	со	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	2.7992	31.7587	22.2264	0.0517		1.4495	1.4495		1.3342	1.3342		5,109.987 0	5,109.987 0	1.6104		5,150.246 4
Total	2.7992	31.7587	22.2264	0.0517	0.0000	1.4495	1.4495	0.0000	1.3342	1.3342		5,109.987 0	5,109.987 0	1.6104		5,150.246 4
3.3 Boring, well, and discharge construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/c	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	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	0.0266	0.0185	0.1754	4.9000e- 004	0.0493	3.5000e- 004	0.0496	0.0131	3.2000e- 004	0.0134		49.0148	49.0148	1.5800e- 003		49.0544
Total	0.0266	0.0185	0.1754	4.9000e- 004	0.0493	3.5000e- 004	0.0496	0.0131	3.2000e- 004	0.0134		49.0148	49.0148	1.5800e- 003		49.0544

Mitigated Construction On-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	day		
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		1 1 1	0.0000			0.0000
Off-Road	2.7992	31.7587	22.2264	0.0517		1.4495	1.4495		1.3342	1.3342	0.0000	5,109.987 0	5,109.987 0	1.6104		5,150.246 4
Total	2.7992	31.7587	22.2264	0.0517	0.0000	1.4495	1.4495	0.0000	1.3342	1.3342	0.0000	5,109.987 0	5,109.987 0	1.6104		5,150.246 4

3.3 Boring, well, and discharge construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/o	day		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	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	0.0266	0.0185	0.1754	4.9000e- 004	0.0493	3.5000e- 004	0.0496	0.0131	3.2000e- 004	0.0134		49.0148	49.0148	1.5800e- 003		49.0544
Total	0.0266	0.0185	0.1754	4.9000e- 004	0.0493	3.5000e- 004	0.0496	0.0131	3.2000e- 004	0.0134		49.0148	49.0148	1.5800e- 003		49.0544

3.4 Surface restoration - 2019

Unmitigated Construction On-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	lay		
Off-Road	1.3196	13.8665	10.7255	0.0158		0.7599	0.7599		0.6998	0.6998		1,562.294 9	1,562.294 9	0.4879		1,574.493 0
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.3196	13.8665	10.7255	0.0158		0.7599	0.7599		0.6998	0.6998		1,562.294 9	1,562.294 9	0.4879		1,574.493 0

3.4 Surface restoration - 2019

Unmitigated Construction Off-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	day		
Hauling	1.7800e- 003	0.0607	0.0139	1.6000e- 004	3.4900e- 003	2.3000e- 004	3.7300e- 003	9.6000e- 004	2.2000e- 004	1.1800e- 003		17.0182	17.0182	1.5900e- 003		17.0579
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
Worker	0.0266	0.0185	0.1754	4.9000e- 004	0.0493	3.5000e- 004	0.0496	0.0131	3.2000e- 004	0.0134		49.0148	49.0148	1.5800e- 003		49.0544
Total	0.0284	0.0792	0.1893	6.5000e- 004	0.0528	5.8000e- 004	0.0534	0.0140	5.4000e- 004	0.0146		66.0330	66.0330	3.1700e- 003		66.1122

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/c	lay		
Off-Road	1.3196	13.8665	10.7255	0.0158		0.7599	0.7599		0.6998	0.6998	0.0000	1,562.294 9	1,562.294 9	0.4879		1,574.493 0
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	1.3196	13.8665	10.7255	0.0158		0.7599	0.7599		0.6998	0.6998	0.0000	1,562.294 9	1,562.294 9	0.4879		1,574.493 0

3.4 Surface restoration - 2019

Mitigated Construction Off-Site

	ROG	NOx	со	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/c	Jay							lb/c	day		
Hauling	1.7800e- 003	0.0607	0.0139	1.6000e- 004	3.4900e- 003	2.3000e- 004	3.7300e- 003	9.6000e- 004	2.2000e- 004	1.1800e- 003		17.0182	17.0182	1.5900e- 003		17.0579
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
Worker	0.0266	0.0185	0.1754	4.9000e- 004	0.0493	3.5000e- 004	0.0496	0.0131	3.2000e- 004	0.0134		49.0148	49.0148	1.5800e- 003		49.0544
Total	0.0284	0.0792	0.1893	6.5000e- 004	0.0528	5.8000e- 004	0.0534	0.0140	5.4000e- 004	0.0146		66.0330	66.0330	3.1700e- 003		66.1122

3.5 Pretreatment test - 2019

Unmitigated Construction On-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/o	day							lb/c	lay		
Off-Road	2.1000	22.5928	16.5948	0.0247		1.1898	1.1898		1.0946	1.0946		2,448.565 7	2,448.565 7	0.7747		2,467.933 2
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	2.1000	22.5928	16.5948	0.0247		1.1898	1.1898		1.0946	1.0946		2,448.565 7	2,448.565 7	0.7747		2,467.933 2

3.5 Pretreatment test - 2019

Unmitigated Construction Off-Site

	ROG	NOx	со	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/c	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	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
Total	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

Mitigated Construction On-Site

	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/d	day		
Off-Road	2.1000	22.5928	16.5948	0.0247		1.1898	1.1898		1.0946	1.0946	0.0000	2,448.565 7	2,448.565 7	0.7747		2,467.933 2
Paving	0.0000					0.0000	0.0000		0.0000	0.0000		 - - - -	0.0000			0.0000
Total	2.1000	22.5928	16.5948	0.0247		1.1898	1.1898		1.0946	1.0946	0.0000	2,448.565 7	2,448.565 7	0.7747		2,467.933 2

3.5 Pretreatment test - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/d	day							lb/c	lay		
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	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
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

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	со	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/e	day							lb/c	lay		
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	1	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	· · · · · · · · · · · · · · · · · · ·	0.0000

4.2 Trip Summary Information

	Avei	rage Daily Trip Ra	ate	Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

		Miles			Trip %			Trip Purpos	е %
Land Use	H-W or C-W H-S or C-C H-O or C-N			H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	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
Other Non-Asphalt Surfaces	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271

5.0 Energy Detail

Historical Energy Use: N

Page 19 of 23

San Dieguito Valley Groundwater Desalination Design Pilot - San Diego County, Winter

5.1 Mitigation Measures Energy

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

5.2 Energy by Land Use - NaturalGas

<u>Unmitigated</u>

	NaturalGa s Use	ROG	NOx	СО	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr					lb/e	day							lb/d	lay		
Other Non- Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGa s Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr					lb/e	day							lb/d	lay		
Other Non- Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	со	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					lb/	day							lb/c	lay		
Mitigated	0.0000	0.0000	4.0000e- 005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e- 005	9.0000e- 005	0.0000		9.0000e- 005
Unmitigated	0.0000	0.0000	4.0000e- 005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e- 005	9.0000e- 005	0.0000		9.0000e- 005

6.2 Area by SubCategory

<u>Unmitigated</u>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory					lb/	day							lb/o	day		
Architectural Coating	0.0000		1 1 1		1 1 1	0.0000	0.0000	1 1 1	0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	4.0000e- 005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e- 005	9.0000e- 005	0.0000		9.0000e- 005
Total	0.0000	0.0000	4.0000e- 005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e- 005	9.0000e- 005	0.0000		9.0000e- 005

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory					lb/o	day							lb/d	day		
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	4.0000e- 005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e- 005	9.0000e- 005	0.0000		9.0000e- 005
Total	0.0000	0.0000	4.0000e- 005	0.0000		0.0000	0.0000		0.0000	0.0000		9.0000e- 005	9.0000e- 005	0.0000		9.0000e- 005

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Pumps	1	24.00	305	84	0.74	Diesel

UnMitigated/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
Equipment Type					lb/e	day							lb/d	day		
Pumps	1.2695	10.5871	11.2877	0.0197		0.6216	0.6216		0.6216	0.6216		1,869.103 7	1,869.103 7	0.1118		1,871.899 3
Total	1.2695	10.5871	11.2877	0.0197		0.6216	0.6216		0.6216	0.6216		1,869.103 7	1,869.103 7	0.1118		1,871.899 3

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Page 23 of 23

San Dieguito Valley Groundwater Desalination Design Pilot - San Diego County, Winter

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
User Defined Equipment					
Equipment Type	Number				
		-			

11.0 Vegetation

San Dieguito Valley Groundwater Desalination Design Pilot

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.40	1000sqft	0.01	400.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.6	Precipitation Freq (Days)	40
Climate Zone	13			Operational Year	2020
Utility Company	San Diego Gas & Electric				
CO2 Intensity (Ib/MWhr)	720.49	CH4 Intensity (Ib/MWhr)	0.029	N2O Intensity ((Ib/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Page 2 of 27

San Dieguito Valley Groundwater Desalination Design Pilot - San Diego County, Annual

Project Characteristics -

Land Use -

Construction Phase - Per contractor and engineer.

Off-road Equipment - from contractor and engineer.

Trips and VMT - from contractor and engineer

Grading -

Vehicle Trips - from contractor and engineer.

Consumer Products - no paved areas.

Area Coating - not paved.

Energy Use -

Construction Off-road Equipment Mitigation -

Stationary Sources - Emergency Generators and Fire Pumps -

Operational Off-Road Equipment - from engineer.

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Parking	24	0
tblConstructionPhase	NumDays	2.00	14.00
tblConstructionPhase	NumDays	1.00	7.00
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	1.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	305.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	24.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	3.00
tblTripsAndVMT	WorkerTripNumber	10.00	6.00
tblTripsAndVMT	WorkerTripNumber	18.00	6.00
tblTripsAndVMT	WorkerTripNumber	10.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00
tblVehicleTrips	ST_TR	0.00	2.50
tblVehicleTrips	SU_TR	0.00	2.50

Page 4 of 27

San Dieguito Valley Groundwater Desalination Design Pilot - San Diego County, Annual

tblVehicleTrips	WD_TR	0.00	2.50

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					ton	s/yr							МТ	/yr		
2019	0.0331	0.3637	0.2641	5.3000e- 004	7.0000e- 004	0.0177	0.0184	1.9000e- 004	0.0163	0.0165	0.0000	47.4087	47.4087	0.0147	0.0000	47.7758
Maximum	0.0331	0.3637	0.2641	5.3000e- 004	7.0000e- 004	0.0177	0.0184	1.9000e- 004	0.0163	0.0165	0.0000	47.4087	47.4087	0.0147	0.0000	47.7758

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					ton	s/yr							МТ	/yr		
2019	0.0331	0.3637	0.2641	5.3000e- 004	7.0000e- 004	0.0177	0.0184	1.9000e- 004	0.0163	0.0165	0.0000	47.4086	47.4086	0.0147	0.0000	47.7757
Maximum	0.0331	0.3637	0.2641	5.3000e- 004	7.0000e- 004	0.0177	0.0184	1.9000e- 004	0.0163	0.0165	0.0000	47.4086	47.4086	0.0147	0.0000	47.7757

	ROG	NOx	со	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)
1	1-2-2019	4-1-2019	0.3356	0.3356
3	7-2-2019	9-30-2019	0.0441	0.0441
		Highest	0.3356	0.3356

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					ton	is/yr							MT	ī/yr		
Area	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	0.0000	1	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
Offroad	0.1936	1.6145	1.7214	3.0100e- 003		0.0948	0.0948	1	0.0948	0.0948	0.0000	258.5824	258.5824	0.0155	0.0000	258.9692
Waste	F:					0.0000	0.0000	1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water	F:					0.0000	0.0000	1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.1936	1.6145	1.7214	3.0100e- 003	0.0000	0.0948	0.0948	0.0000	0.0948	0.0948	0.0000	258.5824	258.5824	0.0155	0.0000	258.9692

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CC		SO2	Fugitive PM10	Exhaus PM10	t PM ⁷ Tot	10 Fi tal F	ugitive PM2.5	Exhaust PM2.5	PM2.5 Tota	Bio- CO2	2 NBio- CC	02 Tota	al CO2	CH4	I N	120	CO2e
Category						t	ons/yr									MT/	/yr			
Area	0.0000	0.000	0 0.00	00 0.	.0000		0.0000	0.00	000		0.0000	0.0000	0.0000	1.0000e 005	- 1.00 0	000e- 005	0.000)0 0.(0000	1.0000e- 005
Energy	0.0000	0.000	0 0.00	00 0.	.0000		0.0000	0.00	000		0.0000	0.0000	0.0000	0.0000	0.0	0000	0.000	0.0	0000	0.0000
Mobile	0.0000	0.000	0 0.00	00 0.	.0000	0.0000	0.0000	0.00	000 0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0	0000	0.000)0 0.(0000	0.0000
Offroad	0.1936	1.614	5 1.72	14 3.0	0100e- 003		0.0948	0.09	948		0.0948	0.0948	0.0000	258.582	4 258	.5824	0.015	5 0.0	0000	258.9692
Waste	F;						0.0000	0.00	000		0.0000	0.0000	0.0000	0.0000	0.0	0000	0.000	0.0	0000	0.0000
Water	F;						0.0000	0.00	000		0.0000	0.0000	0.0000	0.0000	0.0	0000	0.000	0.0	0000	0.0000
Total	0.1936	1.614	5 1.72	14 3.0	0100e- 003	0.0000	0.0948	0.09	948 (0.0000	0.0948	0.0948	0.0000	258.582	4 258	5.5824	0.015	5 0.0	0000	258.9692
	ROG		NOx	CO	SO)2 Fu	igitive E PM10	xhaust PM10	PM10 Total	Fug PM	itive Exl 12.5 P	haust PM M2.5 To	2.5 Bio tal	- CO2 NB	io-CO2	Total C	002	CH4	N20	CO2e
Percent Reduction	0.00		0.00	0.00	0.0	00	0.00	0.00	0.00	0.	00 (0.00 0.1	DO (0.00	0.00	0.00	D	0.00	0.0	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	Site preparation	Site Preparation	1/2/2019	1/10/2019	5	7	
2	Boring, well, and discharge construction	Grading	1/11/2019	1/30/2019	5	14	
3	Surface restoration	Paving	1/31/2019	2/6/2019	5	5	
4	Pretreatment test	Paving	8/12/2019	8/16/2019	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.01

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
Site preparation	Dumpers/Tenders	1	4.00	16	0.38
Site preparation	Graders	0	0.00	187	0.41
Site preparation	Other Construction Equipment	2	8.00	172	0.42
Site preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Boring, well, and discharge construction	Bore/Drill Rigs	1	24.00	221	0.50
Boring, well, and discharge construction	Concrete/Industrial Saws	0	0.00	81	0.73
Boring, well, and discharge construction	Dumpers/Tenders	1	4.00	16	0.38
Boring, well, and discharge construction	Other Construction Equipment	3	8.00	172	0.42
Boring, well, and discharge construction	Rubber Tired Dozers	0	0.00	247	0.40
Boring, well, and discharge construction	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Surface restoration	Cement and Mortar Mixers	0	0.00	9	0.56
Surface restoration	Cranes	0	0.00	231	0.29
Surface restoration	Dumpers/Tenders	1	4.00	16	0.38
Surface restoration	Forklifts	0	0.00	89	0.20
Surface restoration	Other Construction Equipment	2	8.00	172	0.42
Surface restoration	Pavers	0	0.00	130	0.42
Surface restoration	Rollers	0	0.00	80	0.38
Surface restoration	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pretreatment test	Cement and Mortar Mixers	0	0.00	9	0.56
Pretreatment test	Other Construction Equipment	1	24.00	172	0.42
Pretreatment test	Other Construction Equipment	1	8.00	172	0.42
Pretreatment test	Pavers	0	0.00	130	0.42
Pretreatment test	Rollers	0	0.00	80	0.38
Pretreatment test	Tractors/Loaders/Backhoes	0	0.00	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
Site preparation	4	6.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Boring, well, and discharge construction	7	6.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Surface restoration	4	6.00	0.00	1.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Pretreatment test	2	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

3.2 Site preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							МТ	/yr		
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6200e- 003	0.0485	0.0375	6.0000e- 005		2.6600e- 003	2.6600e- 003		2.4500e- 003	2.4500e- 003	0.0000	4.9605	4.9605	1.5500e- 003	0.0000	4.9993
Total	4.6200e- 003	0.0485	0.0375	6.0000e- 005	0.0000	2.6600e- 003	2.6600e- 003	0.0000	2.4500e- 003	2.4500e- 003	0.0000	4.9605	4.9605	1.5500e- 003	0.0000	4.9993

3.2 Site preparation - 2019

Unmitigated Construction Off-Site

	ROG	NOx	со	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					ton	s/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	5.0000e- 005	1.3200e- 003	3.5000e- 004	0.0000	7.0000e- 005	1.0000e- 005	8.0000e- 005	2.0000e- 005	1.0000e- 005	3.0000e- 005	0.0000	0.2790	0.2790	2.0000e- 005	0.0000	0.2795
Worker	8.0000e- 005	6.0000e- 005	6.1000e- 004	0.0000	1.7000e- 004	0.0000	1.7000e- 004	4.0000e- 005	0.0000	5.0000e- 005	0.0000	0.1572	0.1572	1.0000e- 005	0.0000	0.1573
Total	1.3000e- 004	1.3800e- 003	9.6000e- 004	0.0000	2.4000e- 004	1.0000e- 005	2.5000e- 004	6.0000e- 005	1.0000e- 005	8.0000e- 005	0.0000	0.4361	0.4361	3.0000e- 005	0.0000	0.4368

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					ton	s/yr							МТ	/yr		
Fugitive Dust		1 1 1	, , ,		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6200e- 003	0.0485	0.0375	6.0000e- 005		2.6600e- 003	2.6600e- 003		2.4500e- 003	2.4500e- 003	0.0000	4.9605	4.9605	1.5500e- 003	0.0000	4.9992
Total	4.6200e- 003	0.0485	0.0375	6.0000e- 005	0.0000	2.6600e- 003	2.6600e- 003	0.0000	2.4500e- 003	2.4500e- 003	0.0000	4.9605	4.9605	1.5500e- 003	0.0000	4.9992

3.2 Site preparation - 2019

Mitigated Construction Off-Site

	ROG	NOx	со	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					ton	s/yr							МТ	/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	5.0000e- 005	1.3200e- 003	3.5000e- 004	0.0000	7.0000e- 005	1.0000e- 005	8.0000e- 005	2.0000e- 005	1.0000e- 005	3.0000e- 005	0.0000	0.2790	0.2790	2.0000e- 005	0.0000	0.2795
Worker	8.0000e- 005	6.0000e- 005	6.1000e- 004	0.0000	1.7000e- 004	0.0000	1.7000e- 004	4.0000e- 005	0.0000	5.0000e- 005	0.0000	0.1572	0.1572	1.0000e- 005	0.0000	0.1573
Total	1.3000e- 004	1.3800e- 003	9.6000e- 004	0.0000	2.4000e- 004	1.0000e- 005	2.5000e- 004	6.0000e- 005	1.0000e- 005	8.0000e- 005	0.0000	0.4361	0.4361	3.0000e- 005	0.0000	0.4368

3.3 Boring, well, and discharge construction - 2019

Unmitigated Construction On-Site

	ROG	NOx	со	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					ton	s/yr							MT	/yr		
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0196	0.2223	0.1556	3.6000e- 004		0.0102	0.0102		9.3400e- 003	9.3400e- 003	0.0000	32.4499	32.4499	0.0102	0.0000	32.7056
Total	0.0196	0.2223	0.1556	3.6000e- 004	0.0000	0.0102	0.0102	0.0000	9.3400e- 003	9.3400e- 003	0.0000	32.4499	32.4499	0.0102	0.0000	32.7056

3.3 Boring, well, and discharge construction - 2019

Unmitigated Construction Off-Site

	ROG	NOx	со	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					ton	s/yr							МТ	/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	1.7000e- 004	1.3000e- 004	1.2300e- 003	0.0000	3.4000e- 004	0.0000	3.4000e- 004	9.0000e- 005	0.0000	9.0000e- 005	0.0000	0.3144	0.3144	1.0000e- 005	0.0000	0.3146
Total	1.7000e- 004	1.3000e- 004	1.2300e- 003	0.0000	3.4000e- 004	0.0000	3.4000e- 004	9.0000e- 005	0.0000	9.0000e- 005	0.0000	0.3144	0.3144	1.0000e- 005	0.0000	0.3146

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					ton	s/yr							МТ	/yr		
Fugitive Dust			1 1 1		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0196	0.2223	0.1556	3.6000e- 004		0.0102	0.0102		9.3400e- 003	9.3400e- 003	0.0000	32.4499	32.4499	0.0102	0.0000	32.7055
Total	0.0196	0.2223	0.1556	3.6000e- 004	0.0000	0.0102	0.0102	0.0000	9.3400e- 003	9.3400e- 003	0.0000	32.4499	32.4499	0.0102	0.0000	32.7055

3.3 Boring, well, and discharge construction - 2019

Mitigated Construction Off-Site

	ROG	NOx	со	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					ton	s/yr							MT	ſ/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	1.7000e- 004	1.3000e- 004	1.2300e- 003	0.0000	3.4000e- 004	0.0000	3.4000e- 004	9.0000e- 005	0.0000	9.0000e- 005	0.0000	0.3144	0.3144	1.0000e- 005	0.0000	0.3146
Total	1.7000e- 004	1.3000e- 004	1.2300e- 003	0.0000	3.4000e- 004	0.0000	3.4000e- 004	9.0000e- 005	0.0000	9.0000e- 005	0.0000	0.3144	0.3144	1.0000e- 005	0.0000	0.3146

3.4 Surface restoration - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/yr							MT	/yr		
Off-Road	3.3000e- 003	0.0347	0.0268	4.0000e- 005		1.9000e- 003	1.9000e- 003		1.7500e- 003	1.7500e- 003	0.0000	3.5432	3.5432	1.1100e- 003	0.0000	3.5709
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.3000e- 003	0.0347	0.0268	4.0000e- 005		1.9000e- 003	1.9000e- 003		1.7500e- 003	1.7500e- 003	0.0000	3.5432	3.5432	1.1100e- 003	0.0000	3.5709

3.4 Surface restoration - 2019

Unmitigated Construction Off-Site

	ROG	NOx	со	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					ton	s/yr							MT	/yr		
Hauling	0.0000	1.5000e- 004	3.0000e- 005	0.0000	1.0000e- 005	0.0000	1.0000e- 005	0.0000	0.0000	0.0000	0.0000	0.0390	0.0390	0.0000	0.0000	0.0391
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	6.0000e- 005	5.0000e- 005	4.4000e- 004	0.0000	1.2000e- 004	0.0000	1.2000e- 004	3.0000e- 005	0.0000	3.0000e- 005	0.0000	0.1123	0.1123	0.0000	0.0000	0.1124
Total	6.0000e- 005	2.0000e- 004	4.7000e- 004	0.0000	1.3000e- 004	0.0000	1.3000e- 004	3.0000e- 005	0.0000	3.0000e- 005	0.0000	0.1513	0.1513	0.0000	0.0000	0.1514

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					ton	s/yr							МТ	/yr		
Off-Road	3.3000e- 003	0.0347	0.0268	4.0000e- 005		1.9000e- 003	1.9000e- 003		1.7500e- 003	1.7500e- 003	0.0000	3.5432	3.5432	1.1100e- 003	0.0000	3.5709
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.3000e- 003	0.0347	0.0268	4.0000e- 005		1.9000e- 003	1.9000e- 003		1.7500e- 003	1.7500e- 003	0.0000	3.5432	3.5432	1.1100e- 003	0.0000	3.5709

3.4 Surface restoration - 2019

Mitigated Construction Off-Site

	ROG	NOx	со	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					ton	s/yr							MT	/yr		
Hauling	0.0000	1.5000e- 004	3.0000e- 005	0.0000	1.0000e- 005	0.0000	1.0000e- 005	0.0000	0.0000	0.0000	0.0000	0.0390	0.0390	0.0000	0.0000	0.0391
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	6.0000e- 005	5.0000e- 005	4.4000e- 004	0.0000	1.2000e- 004	0.0000	1.2000e- 004	3.0000e- 005	0.0000	3.0000e- 005	0.0000	0.1123	0.1123	0.0000	0.0000	0.1124
Total	6.0000e- 005	2.0000e- 004	4.7000e- 004	0.0000	1.3000e- 004	0.0000	1.3000e- 004	3.0000e- 005	0.0000	3.0000e- 005	0.0000	0.1513	0.1513	0.0000	0.0000	0.1514

3.5 Pretreatment test - 2019

Unmitigated Construction On-Site

	ROG	NOx	СО	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					ton	s/yr							MT	/yr		
Off-Road	5.2500e- 003	0.0565	0.0415	6.0000e- 005		2.9700e- 003	2.9700e- 003		2.7400e- 003	2.7400e- 003	0.0000	5.5533	5.5533	1.7600e- 003	0.0000	5.5972
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.2500e- 003	0.0565	0.0415	6.0000e- 005		2.9700e- 003	2.9700e- 003		2.7400e- 003	2.7400e- 003	0.0000	5.5533	5.5533	1.7600e- 003	0.0000	5.5972

3.5 Pretreatment test - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category					ton	s/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

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					ton	s/yr							МТ	/yr		
Off-Road	5.2500e- 003	0.0565	0.0415	6.0000e- 005		2.9700e- 003	2.9700e- 003		2.7400e- 003	2.7400e- 003	0.0000	5.5533	5.5533	1.7600e- 003	0.0000	5.5972
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	5.2500e- 003	0.0565	0.0415	6.0000e- 005		2.9700e- 003	2.9700e- 003		2.7400e- 003	2.7400e- 003	0.0000	5.5533	5.5533	1.7600e- 003	0.0000	5.5972

3.5 Pretreatment test - 2019

Mitigated Construction Off-Site

	ROG	NOx	со	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					ton	s/yr							МТ	'/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

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					ton	s/yr							MT	/yr		
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Avei	rage Daily Trip Ra	ate	Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

		Miles			Trip %			Trip Purpos	e %
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
Other Non-Asphalt Surfaces	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
Other Non-Asphalt Surfaces	0.588316	0.042913	0.184449	0.110793	0.017294	0.005558	0.015534	0.023021	0.001902	0.002024	0.006181	0.000745	0.001271

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					ton	s/yr							МТ	/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	8,					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

<u>Unmitigated</u>

	NaturalGa s 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					ton	s/yr							MT	/yr		
Other Non- Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGa s 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					ton	s/yr							MT	/yr		
Other Non- Asphalt Surfaces	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

<u>Unmitigated</u>

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr		MT	/yr	
Other Non- Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Page 21 of 27

San Dieguito Valley Groundwater Desalination Design Pilot - San Diego County, Annual

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr		МТ	/yr	
Other Non- Asphalt Surfaces	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	со	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					ton	s/yr							МТ	/yr		
Mitigated	0.0000	0.0000	0.0000	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	0.0000	0.0000	0.0000	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

<u>Unmitigated</u>

	ROG	NOx	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											МТ	/yr		
Architectural Coating	0.0000					0.0000	0.0000	1 1 1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					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	0.0000	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	0.0000	0.0000	0.0000	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

Mitigated

	ROG	NOx	СО	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					ton	s/yr							МТ	/yr		
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					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	0.0000	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	0.0000	0.0000	0.0000	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		МТ	ī/yr	
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

<u>Unmitigated</u>

	Indoor/Out door Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal		МТ	√yr	
Other Non- Asphalt Surfaces	0/0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Page 24 of 27

San Dieguito Valley Groundwater Desalination Design Pilot - San Diego County, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Out door Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal		МТ	/yr	
Other Non- Asphalt Surfaces	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
		МТ	7/yr	
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000
Page 25 of 27

San Dieguito Valley Groundwater Desalination Design Pilot - San Diego County, Annual

8.2 Waste by Land Use

<u>Unmitigated</u>

	Waste Disposed	Total CO2	CH4	N2O	CO2e	
Land Use	tons	MT/yr				
Other Non- Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000	
Total		0.0000	0.0000	0.0000	0.0000	

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e	
Land Use	tons	MT/yr				
Other Non- Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000	
Total		0.0000	0.0000	0.0000	0.0000	

9.0 Operational Offroad

Page 26 of 27

San Dieguito Valley Groundwater Desalination Design Pilot - San Diego County, Annual

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Pumps	1	24.00	305	84	0.74	Diesel

UnMitigated/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
Equipment Type	pe tons/yr								МТ	/yr						
Pumps	0.1936	1.6145	1.7214	3.0100e- 003		0.0948	0.0948		0.0948	0.0948	0.0000	258.5824	258.5824	0.0155	0.0000	258.9692
Total	0.1936	1.6145	1.7214	3.0100e- 003		0.0948	0.0948		0.0948	0.0948	0.0000	258.5824	258.5824	0.0155	0.0000	258.9692

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Equipment Type	Number	Heat Input/Day	Heat Input/Vear	Boilor Poting	Fuel Type
Equipment Type	Number	Tleat Input/Day	rieat input/real	Doller Kating	Гиегтуре

User Defined Equipment

Equipment Type	Number
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11.0 Vegetation



APPENDIX B: BIOLOGICAL RESOURCES ASSESSMENT





September 26, 2018

Rosalyn Prickett Woodard & Curran 10509 Vista Sorrento Parkway, Suite 205 San Diego CA, 92121

RE: Biological Resources Assessment for the Olivenhain Municipal Water District (OMWD) San Dieguito Valley Groundwater Desalination Design Pilot Project

This report documents the results of a records search and site visit conducted by ECORP Consulting, Inc. (ECORP) for the OMWD San Dieguito Valley Groundwater Desalination Design Pilot Project (Proposed Project). The Proposed Project is located in the City of San Diego (City), directly adjacent to the municipal boundary with the County of San Diego (County) between Via De La Valle and San Dieguito Road in the San Dieguito River Valley (Figure 1). The Proposed Project is within City jurisdiction. Resources within Proposed Project impact areas consist solely of developed land and disturbed vegetation and no special-status or protected resources were detected in these areas through background research or during the site survey. This letter report has been prepared in accordance with the City of San Diego Land Development Code Biology Guidelines (City of San Diego 2012).

PROJECT LOCATION AND DESCRIPTION

The Proposed Project is located on incorporated City of San Diego lands within the San Dieguito River Valley. Adjacent land uses include the Morgan Run Country Club to the north, Rancho Paseana to the east, San Dieguito River and Fairbanks Ranch Country Club to the south, and Surf Cup Soccer Fields and Via de la Valle to the west (Figure 2).

The Proposed Project will install and conduct a one-year pump test to support OMWD in pursuing brackish groundwater desalination in the San Dieguito Valley Groundwater Basin. The Project will involve installation and operation of a test well, installation and operation of a manganese pre-treatment field test, and the installation of an above-ground well line to discharge pump test water into the Surf Cup irrigation pond. OMWD will conduct baseline sampling at the test well site, followed by quarterly sampling for a 12-month period.

During wet-weather conditions, pump test water may be discharged to a nearby swale at the west end of the Surf Cup property. Water will be conveyed from the Surf Cup irrigation pond via an abandoned 12inch pipeline. A temporary six-inch pipeline will be installed at the terminus of the abandoned pipe to convey water into the western drainage swale. This temporary pipeline will be trenched approximately 12 inches below the ground surface to allow for vehicles to pass over the pipeline. Rip rap (12-in diameter) will be installed temporarily in a 15 ft by 10 ft area within the swale to slow surface flows. The entire construction footprint will be located on City of San Diego lands. During the installation of the test well, the drill rig will operate constantly for six days. A sound wall barrier will be installed around the test well site to mitigate noise for sensitive biological resources and nearby residential homes. The sound wall barrier will mitigate noise levels to less than 75 dBA at a 50-ft distance from all construction activities. Sound levels will be continuously monitored throughout construction activities to ensure adequate noise mitigation measures.

The Proposed Project is accessed by an existing hard-packed dirt road off of Via de la Valle Road, south of the project site. This road will be temporarily used as an ingress and egress route for workers and construction equipment and is not anticipated to be impacted by the Proposed Project.

For purposes of this report, the term "project site" refers to the areas directly impacted by the Proposed Project, which consists of urban/developed and disturbed lands. The test well, all field testing, discharge area, and any equipment staging will occur within the project site. The term "survey area" includes a 500-ft survey buffer around the project site,

Construction of the Proposed Project is estimated to take approximately one month and will consist of an average crew of 10 workers, including inspectors. Construction could generate up to 12 round-trip trips per day, including two round trips for off hauling of material, two round trips for delivery of materials, and 10 small vehicle trips for construction worker commuting.



Map Date: 8/6/2018 Service Layer Credit: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P. NRCan, Esri Japan, METI, Ear China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreeMap contributors, and the GIS User Community



Figure 1. Project Vicinity 2018-139 San Dieguito Valley Groundwater Desalination Pilot Project



Map Date: 9/25/2018 Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METT, Esri China (Hong Kong), Esri Korea, Erri (Thailand), NGCC, © OpenStreeMate contributors, and the GIS User Community

ECORP Consulting, Inc.

Figure 2. Project Location 2018-139 San Dieguito Valley Groundwater Desalination Pilot Project

Figure 3. Project Overview



Date: 3/28/2018

PROJECT PURPOSE

OMWD is a public agency in north San Diego County that provides water, wastewater, and recycled water service, hydroelectric power generation, and the operation of Elfin Forest Recreational Reserve. OMWD, a member of the San Diego County Water Authority (SDCWA), covers an area of 48 square miles and serves a 2015 population of 70,522 using 22,295 potable water meters (OMWD, 2016a). OMWD is fully reliant on SDCWA to meet potable water demands within its service area. Due to rising costs, decreasing availability, and uncertain future reliability of this purchased water, OMWD intends to develop and expand its local water supplies to achieve long-term water reliability, control costs, and advance sustainability. The Proposed Project will evaluate the feasibility of desalinating the brackish groundwater in the San Dieguito Valley groundwater basin. This design pilot supports the future use of available local groundwater and reduces reliance on imported water.

REGIONAL CONTEXT

The Proposed Project is within the City of San Diego's Multiple Species Conservation Program (MSCP) Planning Area (City of San Diego 1996). The MSCP is a conservation program designed to facilitate the implementation of a regional habitat preserve by coordinating project impacts and mitigation while allowing the issuance of "take" permits for special-status upland species at the local level. This habitat preserve is known as the Multi-Habitat Planning Area (MHPA) and lands within it have been designated for conservation. Various jurisdictions, including the City of San Diego, have developed MSCP Subarea plans to establish guidelines for the implementation of their respective preserve areas which are included in the regional MHPA. The project site is located outside of the City's MHPA.

MSCP "covered species" are those that are considered adequately protected within the City of San Diego, provided that they are conserved according to the conditions of coverage provided in the City's MSCP Subarea plan.

In addition to general guidelines and directives provided in the City's MSCP subarea plan, development in the City of San Diego is subject to restrictions discussed in the City of San Diego Land Development Code Biology Guidelines (City of San Diego 2012). These guidelines have been prepared to ensure the consideration of environmentally sensitive lands located in the vicinity of any proposed development. Determinations on the level of significance of an effect a project may have on the environment under the Development Code and CEQA are made using guidelines established by the City's Significance Determination Thresholds.

METHODS

ECORP conducted a literature review of the latest versions of the California Natural Diversity Database (CNDDB; CDFW 2018a), and California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Plants (CNPS 2018) within five miles of the property, as well as a review of the U. S. Department of Agriculture Natural Resources Conservation Service Web Soil Survey (USDA 2018), U.S. Fish and Wildlife Service (USFWS) Critical Habitat Portal and Information for Planning and Consultation (IPaC) Trust Resources List (USFWS 2018a), and USFWS National Wetland Inventory (USFWS 2018b). The project site, as well as a 500-foot buffer around the project site (hereafter referred to as "survey area"), was surveyed on foot by biologists familiar with the biological resources located in the regional vicinity of the property. Proposed Project areas were surveyed to provide for 100 percent visual coverage. ECORP biologists Josh Corona-Bennett and Jessie Dubus conducted an on-site survey throughout the survey area on August 14, 2018 to further examine the biological resources present on the property and to determine the potential presence for special-status biological resources. Environmental conditions were conducive for performing the assessment for wildlife and plants. Focused, protocol-level surveys were not conducted as part of this site visit. Vegetation mapping was conducted using aerial imagery and ground-truthed during field surveys in accordance with City Guidelines. Plant and wildlife species observed during the survey were recorded. Representative photographs of the property were taken. Binoculars were used to aid in bird identifications.

RESULTS

Habitats and Vegetation Communities

Vegetation classifications are described below according to the City's Environmentally Sensitive Lands (ESL) definitions, pursuant to the City of San Diego's Biology Guidelines (City of San Diego 2012). Within the MSCP, upland vegetation communities are divided into four tiers of biological sensitivity, based on the rarity and ecological importance of each vegetation community. Tier I vegetation communities are the most sensitive, while Tier IV vegetation communities are the least sensitive. Wetland-associated habitats are not assigned a tier in the City's guidelines, although impacts to these habitats require mitigation. As noted previously, the Proposed Project is not within the City's MHPA.

The specific location of each plant community identified in the survey area, relative to the project disturbance areas, is depicted in Figure 4. Representative photographs of the habitats within the survey area are included within Attachment 1. Overall, impacts are only expected to the Urban/Developed and Disturbed areas. The other vegetation communities described below were identified within the survey area or adjacent to the Proposed Project impact areas.

Disturbed Southern Coastal Salt Marsh (Holland Code 52120)

Coastal salt marshes are intertidal features that occur as fringes bordering upland areas. This vegetation type occurs in the drainage swale on the western end of Surf Cup, likely due to the inundation of brackish water from the nearby San Dieguito River during overflow conditions. It is considered disturbed because it is mowed and dominated by primarily non-native grasses and herbs. This community contains plants that are tolerant of saline conditions, such as perennial pickleweed (*Salicornia* sp.) and estuary seablite (*Suaeda esteroa*), a CNPS 1B species. Impacts to this vegetation community are not anticipated as a part of the Proposed Project.

Coastal and Valley Freshwater Marsh (Holland Code 52410)

This vegetation type is dominated by perennial hydrophytic plants such as bulrush (*Scirpus* spp.) and cattail (*Typha* spp). It typically occurs along the coast and in coastal valleys near river mouths and around





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	Figure 4. Vegetation Map						
Мар	Features						
	Study Area - 22.23 acres						
	500' Buffer						
	Disturbance/Staging Area						
0	Approximate Test Well Location						
<u>Proje</u>	ct Components						
	Abandonded 12" Line						
	Access road from Villa De La Valle						
_	Buried Piping (temp)						
	Proposed Test Well Piping to Irrigation Pond						
Vege	tation Community ¹						
	11200 Disturbed Wetland						
	11300 Disturbed Habitat						
	12000 Urban/Developed						
	13300 Saltpan/Mudflats						
	18200 Intensive Agriculture - Dairies, Nurseries, Chicken Ranches						
	18300 Extensive Agriculture - Field/Pasture, Row Crops						
	32500 Diegan Coastal Sage Scrub						
	42200 Non-Native Grassland						
	52120 Southern Coastal Salt Marsh						
	52410 Coastal and Valley Freshwater Marsh						
	64100 Open Water						
	Disturbed 11300 Upland Habitat						
	Disturbed 11300 Upland Habitat (in staging area)						
	Disturbed 32500 Diegan Coastal Sage Scrub						
	Disturbed 52410 Coastal and Valley Freshwater Marsh/63300 Southern Riparian Scrub						
	Estuary Seablite (Suaeda esteroa)						
	Ornamental Trees						
¹ Data derived from SANDAG, aerial inturpretation and field survey							
	ENVIRONMENTAL CONSULTANTS						

Map Date: 9/26/2018

the margins of lakes and spring, in areas lacking significant current that are permanently flooded by fresh water. Within the survey area, it occurs in a small swath north of the pedestrian bridge on Morgan Run golf course. Impacts to this vegetation community are not anticipated as a part of the Proposed Project.

Disturbed Coastal and Valley Freshwater Marsh

Disturbed coastal and valley freshwater marsh occurs south and on the east side of the pedestrian bridge on Morgan Run golf course. The abundance of non-native species such as tamarisk (*Tamarix ramosissima*) and arundo (*Arundo donax*) differentiate these disturbed areas from other freshwater marsh habitat observed in the survey area. These areas will not be impacted by this project.

Southern Riparian Scrub (Holland Code 63300)

Southern riparian scrub is a riparian habitat that can be dominated by a variety of riparian plant species, typically including mule fat (*Baccharis salicifolia*) and various species of willows (*Salix spp.*), but also containing more mature woodland species. This vegetation community on site consists predominantly of mule fat, willows, and an abundance of tamarisk in the tree layer. This habitat is adjacent to coastal and valley freshwater marsh associated with San Dieguito River. Impacts to this vegetation community are not anticipated as a part of the Proposed Project.

Disturbed Wetland (Holland Code 11200)

Disturbed wetland areas are generally associated with areas of wetlands that have been disturbed in the past by human-made impacts. This vegetation community is characterized by wetland species that tolerate disturbance and is dominated by non-native species. Near the existing channel, this vegetation type is mostly dominated by cattail (*Typha domingensis*) and tamarisk. Impacts to this vegetation community are not anticipated as a part of the Proposed Project.

Diegan Coastal Sage Scrub (Holland Code 32500) – Tier II

Diegan coastal sage scrub comprises low-growing, aromatic, drought-deciduous, soft-woody shrubs. Typically, this community is found on sites with steep, dry slopes or on clay-rich soils that are slow to release stored water. This vegetation community occurs approximately 500 ft north of the dirt access road, across Villa de la Valle. Dominant species included California encelia (*Encelia californica*), coastal sagebrush (*Artemisia californica*), and jimson weed (*Datura wrightii*). This vegetation community has the potential to host special-status species such as the Coastal California gnatcatcher. Impacts to this vegetation community are not anticipated as a part of the Proposed Project.

Disturbed Diegan Coastal Sage Scrub

Disturbed Diegan coastal sage scrub occurs west of the dirt access road. The sparse distribution of the shrub species typically dominant in this vegetation community and the abundance of non-native species are characteristics that distinguish this community from a more typic stand of Diegan coastal sage scrub. Impacts to disturbed Diegan coastal sage scrub are not anticipated as a part of the Proposed Project.

Urban/developed (Holland Code 12000) – Tier IV

A majority of the survey area consists of urban and developed land, including project areas that will be used for access, staging, and installation of the pipeline. Developed areas do not constitute a vegetation classification, but rather a land cover type. Areas mapped as developed are largely devoid of vegetation. Hard-packed dirt paths, structures, and dump sites were mapped as developed. This vegetation/habitat community is not considered to be sensitive by the City, or by state or federal agencies.

Ornamental Vegetation (Holland Code 11000) – Tier IV

Ornamental vegetation is human-planted and grown for decorative and purposes. Examples of this vegetation type include rows of non-native trees and flowers used for landscaping. Ornamental vegetation in the project area includes non-native myoporum (*Myoporum parvifolium*), Bougainvillea (*Bougainvillea sp.*) and non-native grasses planted for golf course landscaping. This vegetation/habitat community is not considered to be sensitive by the City, or by state or federal agencies.

Disturbed (Holland Code 11300) – Tier IV

A disturbed designation has been applied to areas that have been heavily impacted by human activity and an abundance of non-native plant species. These areas are dominated by at least 50 percent cover of invasive broad-leaved non-native plant species and non-native grasses as an additional major component. There were sparse occurrences of elderberry (*Sambucus nigra*) trees and patches of goldenbush (*Isocoma menziesii*) scrub and non-native plants such as black mustard (*Brassica nigra*) and hottentot-fig ice plant (*Carpobrotus edulis*) within these areas. This vegetation/habitat community is not considered to be sensitive by the City, or by state or federal agencies.

Special-status species

The flora and fauna observed during the field reconnaissance survey included those that are typical of the aforementioned vegetation communities. Wildlife observed included common raven (*Corvus corax*), northern mockingbird (*Mimus polyglottos*), house finch (*Haemorhous mexicanus*), California ground squirrel (*Otospermophilus beecheyi*), and red-tailed hawk (*Buteo jamaicensis*). Although none were observed, amphibian and reptile species expected to occur are those that can thrive amid disturbance, such as the western fence lizard (*Sceloporus occidentalis*) and pacific treefrog (*Psuedacris regilla*).

Special-status plant and wildlife species reported for the region in the literature review or for which suitable habitat occurs within the survey area were assessed for their potential to occur based on the standardized guidelines described in the Attachments 2 and 3. The survey area contains wetland, riparian, and coastal sage scrub vegetation which are conducive to supporting special-status plants and wildlife, however the Proposed Project impact areas are Urban/Developed and Disturbed. The disturbance areas will be cleared of herbaceous vegetation and used as construction equipment staging areas. The disturbance area around the proposed test well site is unvegetated and currently used for overflow parking for the Surf Cup soccer fields. The proposed impact area within the western drainage swale consists of disturbed vegetation.

Special-status plants were evaluated for their potential to occur within the Proposed Project area where impacts could occur. Special-status wildlife were evaluated for their potential to occur within the survey area, a broader area which includes the Proposed Project area and buffer, where direct or indirect impacts could occur.

Special-Status Plants

A literature search using the CNDDB and the CNPS's Electronic Inventory was conducted to determine the special-status species that have been documented within a five-mile radius of the Proposed Project. The special-status plant species reported in these databases for the area were then assessed for their potential to occur in the Proposed Project area. A thorough pedestrian survey of the Proposed Project area was performed by qualified ECORP biologists on August 14, 2018.

One special-status plant, estuary seablite was detected within the discharge swale, adjacent to the Proposed Project area. Approximately 30 specimens were observed in a 40 ft by 10 ft area (depicted in Figure 4) located outside of the proposed impact area. While direct and indirect impacts to these plants are not anticipated as a result of the Proposed Project, measures are recommended to reduce potential impacts. Additionally, one special-status plant species was determined to have a moderate potential to occur and four were determined to have low potential to occur in the Proposed Project area, described below. The remaining 73 plant species evaluated are presumed absent from the Proposed Project area due to the lack of suitable habitat and/or other conditions such as soil or elevation. Attachment 2 provides a complete list of plant species evaluated and the justification for their potential to occur. In addition, nearly all of the special-status plants evaluated in Attachment 2 would have been detected during the August reconnaissance survey, if present.

Special-Status Plant Species with a Moderate Potential to Occur

Southern tarplant (*Centromadia parryi* ssp. *australis*) is a CNPS 1B.1 species, and not covered by the MCSP. A record for this species exists within CNDDB, in an area overlapping the Proposed Project alignment but outside of proposed impact areas. Southern tarplant occurs in salt marshes and swamps, valley and foothill grassland, and vernal pools. The blooming period of this species is between May and November, so the species would have been observed during the reconnaissance survey, if present. It was not observed during the August site survey. Typical habitat for this species does not occur within the proposed disturbance areas, however due to the proximity of previous records, measures are recommended to reduce potential impacts to this species.

Special-Status Plant Species with a Low Potential to Occur

The four special-status plant species that were determined to have a low potential to occur are listed below with their status designations. Justifications for their potential are provided in Attachment 2.

- San Diego sagewort (Artemisia palmeri), CNPS 4.2
- Smooth tarplant (Centromadia pungens ssp. laevis), CNPS 1B.1
- Coulter's goldfields (Lasthenia glabrata ssp. coulteri), CNPS 1B.1

Robinson's pepper-grass (Lepidium virginicum var. robinsonii), CNPS 4.3

Special-Status Wildlife

A literature search using the CDFW's CNDDB and USFWS's IPAC was conducted to determine the specialstatus wildlife species that have been documented within a five-mile radius of the Proposed Project site. The special-status wildlife species reported in these databases for the area were then assessed for their potential to occur in the survey and Proposed Project areas.

Twenty-six special-status wildlife species had been previously recorded within five miles of the Proposed Project area, one of which had been documented within the survey area: light-footed Ridgway's rail (*Rallus obsoletus levipes*). This species is assumed present in the survey area however determined to be unlikely to occur in the Proposed Project area. This species is further discussed below. An additional six species were evaluated because habitat conditions associated with those species are affiliated with the survey area or general project vicinity. One special-status wildlife species was determined to have a high potential to occur, three were determined to have a moderate potential to occur, and 12 were determined to have a low potential to occur in the survey area. The remaining 15 wildlife species evaluated are presumed absent from the survey area due to the lack of suitable habitat. Attachment 3 provides a complete list of wildlife species evaluated and the justification for their potential to occur in the survey and Proposed Project area.

The proposed disturbance areas are previously disturbed and dominated by bare ground and are not highly associated with any of the species evaluated. The access road to be used for the Proposed Project is frequently used by vehicles, Surf Cup users, and landscaping and maintenance equipment; therefore, the transportation of workers and construction equipment on this access road is not anticipated to directly or indirectly impact birds or wildlife during ingress and egress. Due to the close proximity of suitable habitat, it is possible that construction activities could influence activity for these species. These species are discussed in more detail below. No special-status wildlife species were observed or detected during the reconnaissance survey.

Special-Status Wildlife Species Assumed to be Present Within the Survey Area

Light-footed Ridgway's rail is a federally endangered species, a State Fully Protected species, and a species covered by the City MSCP. Focused light-footed Ridgway's rail surveys were performed for the El Camino Real Bridge Replacement Project (Caltrans 2015). The survey area included suitable habitat areas south of El Camino Real bridge and the section of the San Dieguito River south of the Proposed Project area. During these surveys, a solitary individual was observed approximately 300 feet south of the disturbance area. The majority of the rail pairs and individuals observed during the 2015 surveys were between the El Camino Real Bridge and over 1,500 feet south of the disturbance area. Their preferred habitat includes freshwater and saltwater marshes that occur along river corridors. The coastal salt marsh adjacent to the Proposed Project area does not provide suitable cover or foraging habitat for this species. Suitable nesting and foraging habitat for this species does not occur within or immediately adjacent to the Proposed Project disturbance areas, however due to the proximity of previous records, measures are recommended to

reduce potential impacts to this species. In addition, implementation of sound walls that are part of the project design will eliminate potential direct and indirect impacts to this species.

Special-Status Wildlife Species with a High Potential to Occur

San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) is a CDFW Species of Special Concern. It occurs in a variety of open or semi-open grasslands, croplands, and sparse coastal scrub. This species is likely to forage and travel through the Proposed Project disturbance areas and access road, however it will flee these areas upon human/vehicle presence. They are a highly disturbance-tolerant species and are likely accustomed to existing vehicles and people in the vicinity. Impacts to this species are not anticipated as a part of the Proposed Project.

Special-Status Wildlife Species with a Moderate Potential to Occur

Orange-throated whiptail (*Aspidoscelis hyperythra*) is a CDFW Watch List species and covered under the City MSCP. This species has been observed approximately one mile southwest of the survey area. This species is associated with semi-arid open areas with coarse soils in coastal sage scrub, chaparral, and dry riparian areas and washes. Habitat associated with this species occurs in the survey area, however marginally suitable habitat within the Proposed Project area. This species was determined to have a moderate potential to occur in the survey area and a low potential to occur within the disturbance areas of the Proposed Project. Impacts to this species are not anticipated as a part of the Proposed Project.

Belding's savannah sparrow (*Passerculus sandwichensis beldingi*), is a state-listed as endangered and a species covered by the City MSCP. Their preferred habitat includes moist grasslands and meadows. Records occur within five miles of the survey area. While certain areas of the survey area contain suitable habitat for this species, the Proposed Project areas do not provide suitable habitat. Impacts to this species are not anticipated as a part of the Proposed Project.

California black rail (*Laterallus jamaicensis coturniculus*), a state-listed as threatened species and not covered under the City MSCP. Their preferred habitat includes coastal and inland marshes. While certain areas of the survey area contain suitable habitat for this species, the Proposed Project areas do not provide suitable habitat. Impacts to this species are not anticipated as a part of the Proposed Project.

Special-Status Wildlife Species with a Low Potential to Occur

The 12 special-status wildlife species that were determined to have a low potential to occur are listed below with their status designations. Justifications for their potential are provided in Attachment 3.

- Tricolored blackbird (Agelaius tricolor), CDFW Threatened;
- California glossy snake (Arizona elegans occidentalis), CDFW Species of Special Concern (SSC)
- Coast horned lizard (Phrynosoma blainvillii), CDFW SSC
- Coronado skink (*Plestiodon skiltonianus interparietalis*), CDFW Watch List;
- Red-diamond rattlesnake (Crotalus ruber), CDFW SSC;
- Least Bell's vireo (Vireo bellii pusillus), USFWS endangered, CDFW SSC, covered by City MSCP;

- Burrowing owl (Athene cunicularia), USFWS Bird of Conservation Concern, CDFW SSC, covered by City MSCP;
- White-tailed kite (*Elanus leucurus*), CDFW Fully Protected;
- California horned lark (Eremophila alpestris actia), CDFW Watch List;
- Northwestern San Diego pocket mouse (Chaetodipus fallax fallax), CDFW SSC;
- San Diego desert woodrat (Neotoma lepida intermedia), CDFW SSC; and
- Dulzura pocket mouse (Chaetodipus californicus femoralis), CDFW SSC.

Large Mammal Use

There were no signs of large mammal species observed in the Proposed Project area during the surveys, but the survey area is within the San Diego County range of native medium and large mammals, including bobcat (*Lynx rufus*), mountain lion (*Felis concolor*), mule deer (*Odocoileus hemionus*), and coyote (*Canis latrans*). Disturbances due to agriculture, developed areas, and ongoing human activity likely limit the use of the survey area by the deer and mountain lion, but use by both bobcat and coyote, along with many smaller mammal species, could occur due to the water sources present and natural stream corridors, specifically the nearby San Dieguito River. If these species were to use the site, they would be expected to pass through temporarily.

Migratory Birds and Raptors

The survey area contains habitat for migratory bird species and potential for raptor foraging and nesting. No long-standing nests were observed within the survey area during the reconnaissance survey; however, non-native palm, eucalyptus, and other tree species provide suitable habitat for raptor nesting while the adjacent fallow/agricultural land is suitable for foraging. Due to the lack of a dense shrub layer and sparsely distributed riparian vegetation, there is insufficient habitat for riparian species such as least Bell's vireo or southwestern willow flycatcher (*Empidonax extimus traillii*).

Jurisdictional Wetlands and Waterways

The project site is outside of the City of San Diego's coastal overlay zone and as currently proposed avoids Environmentally Sensitive Lands including wetlands. The San Dieguito River and associated wetlands occur outside of the project site, but within the survey area. The western drainage swale where water will be conveyed to is a man-made, non-wetland swale constructed in upland/dryland habitat prior to 1953. There were no ordinary high water mark indicators. The feature is a constructed grassland swale that is frequently mowed and maintained (see Photo 5). Despite routine maintenance in this area, the topographic low areas of the swale support some salt marsh species.

Impacts to wetlands and waterways are not anticipated as a part of the Proposed Project. The San Dieguito River is outside of the project site, and the rip rap dissipation area has been designed to be in disturbed upland habitat associated with the swale. The project will not impact any coastal salt marsh habitat in this area; this habitat will be avoided completely.

Wildlife Corridors and Linkages

The natural movement corridors within the property occur along the San Dieguito River. Rivers and streams and associated habitats serve as natural corridors for wildlife due to their abundant cover, the source of seasonal water, and the directional path that they represent for navigation. Land uses within the Project Area and on surrounding the properties are disturbed and developed, and offer some constraints to wildlife movement, but movement corridors exist in the survey area primarily through the riparian habitats and open, unfenced fields. The design would retain the existing contiguity with the surrounding landscape and wildlife movement would most likely be unchanged as a result of the Proposed Project.

Topography and Soils

Topography throughout the project site is relatively flat. A soils analysis search was conducted using NRCS soil survey data (http://websoilsurvey.nrcs.usda.gov). Seven soil series occur within the Project area (Figure 5). A majority of the soil series identified on the project site are dominated by loamy sands, which are generally well drained sandy soils that are found at alluvial fans and toeslopes. There are no map units indicating that clay soils that could support vernal pools occur in the vicinity. Historical aerial images were reviewed using Google Earth. There were no indications of depressions or areas where ponding would occur on the access road or within either of the proposed disturbance areas.

DISCUSSION

Significance of Project Impacts and Proposed Minimization Measures

The Proposed Project consists of the installation and operation of a manganese pre-treatment field test, and the installation of an above-ground well line to discharge pump test water into the Surf Cup irrigation pond. OMWD will conduct baseline sampling, followed by quarterly sampling for a 12-month period. Under wet-weather periods, pump test water may be discharged to a nearby drainage channel at the west end of the Surf Cup property. Water will be conveyed from the Surf Cup irrigation pond via an abandoned 12-inch pipeline. A temporary above-ground pipeline will be installed to convey water from the abandoned pipeline into the western drainage swale. Rip rap will be installed temporarily within the swale to slow surface flows. The Proposed Project includes the installation of a sound wall barrier around construction activities to mitigate noise levels to less than 75 dBA at a 50-ft distance from all construction activities.

All disturbance and staging will occur within the project site, which consists of urban/developed land and disturbed areas. The disturbance areas will be cleared of herbaceous vegetation and used as construction equipment staging areas. The Proposed Project disturbance area is unvegetated and currently used for overflow parking for the Surf Cup soccer fields. The amount of each vegetation type impacted by the Proposed Project is included in Table 1.

The dirt access road will be used to transport workers and equipment such as loaders and trucks. The road is currently used by maintenance workers and no new impacts are anticipated as a result of the use of this road.



Figure 5. NRCS Soils Map

Map Features

Study Area

Series Designation - Series Description

CsB - Corralitos loamy sand, 0 to 5 percent slopes

CsC - Corralitos loamy sand, 5 to 9 percent slopes

GoA - Grangeville fine sandy loam, 0 to 2 percent slopes

HrE2 - Huerhuero loam, 15 to 30 percent slopes, eroded

TeF - Terrace escarpments

TuB - Tujunga sand, 0 to 5 percent slopes

Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) Database for San Diego County, CA



Table 1 – Vegetation Communities Impacted

Vegetation Community (Holland Code)	Proposed Temporary Impact/Permanent Impact (acres)
Disturbed Southern Coastal Salt Marsh (52120)	0.0/0.0
Coastal and valley freshwater marsh (52410)	0.0/ 0.0
Disturbed coastal and valley freshwater marsh (52410)	0.0/0.0
Southern riparian scrub (63300)	0.0/0.0
Disturbed wetland (11200)	0.0/0.0
Diegan coastal sage scrub (32500)	0.0/0.0
Disturbed Diegan coastal sage scrub (32500)	0.0/0.0
Urban/developed (12000)	3.08/0.0
Extensive Agriculture – Field/Pasture, Row Crops (18300)	0.0/0.0
Ornamental Vegetation (11000)	0.0/0.0
Disturbed (11300)	0.883/0.0

The vegetation/habitat communities in the Proposed Project areas are not considered to be sensitive by the City, or by state or federal agencies, therefore impacts will not be significant. Implementation of Measures 1 (Mark disturbance limits), 5 (Pre-construction survey), 6 (Initial biological monitoring), 7 (Worker education), 9 (Trash containment), 11 (Speed limit), and 12 (SWPPP), which are described below, during the construction phase, direct and indirect impacts (dust) to the other vegetation communities identified within the survey area will be avoided.

Light-footed Ridgway's rail is known to occur near the project site. Typical habitat for this species does not occur within the proposed disturbance areas, however potential for the species to enter the project site exists. With implementation of Measures 1 (Mark disturbance limits), 2 (Avoiding breeding season) 3 (Nighttime lighting requirements), 5 (Pre-construction survey), 6 (Initial biological monitoring), 7 (Worker education), 9 (Trash containment), 10 (trench and hole covering), 11 (Speed limit), and 12 (SWPPP) which are described below, during the construction phase, direct and indirect impacts to rail can be avoided. In addition, implementation of sound walls that are part of the project design will eliminate potential direct and indirect impacts to this species.

There is habitat for general nesting birds and raptors in the vicinity of the Proposed Project area. With implementation of Measure 1 (Mark disturbance limits), 3 (Nighttime lighting requirements), 4 (Avoid nesting season), 5 (Pre-construction survey), 6 (Initial biological monitoring), 7 (Worker education), 9 (Trash containment), and 11 (Speed limit), which are described below, direct and indirect impacts to general nesting birds and raptors can be avoided.

Estuary seablite is known to occur immediately adjacent to the drainage swale. With implementation of Measures 1 (Mark disturbance limits), 6 (Initial biological monitoring), 7 (Worker education), and 12 (SWPPP) which are described below, during the construction phase, direct and indirect impacts to estuary seablite can be avoided.

Typical habitat for southern tarplant does not occur within the proposed disturbance areas, however there are records in close proximity. With implementation of Measure 8 (Soil salvage), described below, the potential for impacts to this species and existing seed bank is reduced.

Due to the installation of a sound wall barrier, the implementation of the measures 1-12, and the short duration of project construction, the Proposed Project is not anticipated to significantly affect wildlife or plants in the area.

CUMULATIVE IMPACTS

Cumulative impacts refer to incremental individual environmental effects of two or more projects when considered together. These impacts taken individually may be minor, but collectively significant as they occur over a period of time.

The Proposed Project would result in the removal of disturbed vegetation. Disturbed vegetation is not considered to be sensitive by the City, or by state or federal agencies, and therefore the removal of disturbed vegetation is not anticipated to contribute to cumulative impacts to vegetation.

Construction of the Proposed Project is estimated to take approximately one month and will consist of an average crew of 10 workers, including inspectors. Construction could generate up to 12 round-trip trips per day, including two round trips for off hauling of material, two round trips for delivery of materials, and 10 small vehicle trips for construction worker commuting. The area is frequented by maintenance and mowing crews from the neighboring golf course, as well as golf course patrons. Temporary impacts as a result of construction, staging, and the transportation of workers and equipment on the existing unvegetated dirt road are not significant and are not anticipated to contribute to cumulative impacts.

Due to current noise levels of the area, the implementation of a nesting bird survey prior to construction, and the short duration of project construction, the Proposed Project is not anticipated to significantly affect wildlife or plants in the area and is not anticipated to contribute to cumulative impacts.

With the application of the recommended avoidance and minimization measures listed below, significant direct, indirect, or cumulative impacts to biological resources are not anticipated as a result of the Proposed Project.

RECOMMENDED MEASURES

The following measures are recommended to avoid or otherwise minimize impacts to biological resources:

- 1. Project disturbance limits shall be clearly identified prior to construction activities and restricted to the minimal size necessary to complete the Proposed Project.
- 2. To avoid take of light-footed Ridgway's rail and potential direct and indirect impacts, it is recommended that vegetation clearing/grubbing and construction activities occur outside of the rail breeding season (between September 16 and March 14). According to our vegetation mapping, the disturbance/staging areas east and west of the river do not contain and are not immediately adjacent to wetland vegetation. Should construction need to occur during the rail

breeding season (March 15 to September 15), consultation with the USFWS and focused surveys may be necessary. In addition, rail exclusionary fencing or stacked straw bales may need to be installed in project areas closest to wetland vegetation to inhibit entry of rails into the construction footprint. Noise abatement measures have been included in the Proposed Project description and no additional noise abatement is recommended. Because this species is a year-round resident of the San Dieguito River, Measures 1, 3, 4, 5, 6, 7, 9, 10, 11, and 12 provide additional coverage for all project activities regardless of the season.

- 3. During nighttime construction, all lighting used will be of the lowest illumination necessary for project construction, selectively placed and directed at the immediate work area and away from adjacent sensitive habitats. Light glare shields will be used to reduce the extent of illumination into sensitive habitats.
- 4. To avoid take of general nesting and migratory birds/raptors and potential direct and indirect impacts, it is recommended that vegetation clearing/grubbing and construction activities occur outside of the general nesting bird/raptor breeding season (between September 16 and January 31). If construction cannot be planned to occur outside of this season (February 1 to September 15), a pre-construction nesting bird survey should be conducted by a qualified biologist. If nesting raptors/birds are found within 500 feet of construction activities, then an appropriately sized nowork buffer zone (in consultation with CDFW/USFWS, as appropriate) should be established around the active nest until a qualified biologist determines the nest is no longer active. Construction will not be able occur within the no-work buffer zone area until the biologist determines that the buffer is no longer necessary (e.g., nest becomes inactive). Measure 4 (above) will also reduce indirect impacts to nesting and migratory birds and raptors.
- 5. Regardless of time of year, within three days prior to commencement of construction activities (including staging of equipment, clearing and grubbing) a qualified biologist shall perform a preconstruction survey for sensitive biological resources within 500 feet of Proposed Project area and verify disturbance limits have been clearly identified. If a sensitive biological resource is identified during the pre-construction survey with potential for direct or indirect impacts from the Project, biological monitoring may be necessary throughout project duration.
- 6. A qualified biological monitor shall be present during initial clearing and grubbing activities. As appropriate, the biologist may relocate animal species offsite to appropriate habitat and in compliance with any applicable Federal, State, and local regulations pertaining to relocation activities.
- 7. A qualified biological monitor shall train contractors and construction personnel expected to be in the project impact areas on the biological resources associated within the project and avoidance and minimization measures being implemented as part of the project and document that training is implemented.
- 8. Surface soils in the vegetated excavation areas shall be removed and preserved during construction and replaced when construction is complete. The biological monitor (Measure 5) will verify this is completed.

- 9. The project site shall be kept as clear of debris as possible. All food-related trash items will be enclosed in sealed containers and regularly removed from the site. All spoils and materials (including grubbed vegetation) will be disposed of properly.
- 10. Trenches or bore holes shall not be left open if they cannot be backfilled that same day. If a trench or bore-hole cannot be backfilled, placement of a wood plank with minimum dimensions of 2-inch-thick by 6-inch-wide should be placed in a manner that an animal can climb out of the hole or trench. If an animal becomes trapped in a hole or trench a qualified biologist should be contacted immediately to relocate the animal.
- 11. The construction-related vehicle speed limit on the dirt access road leading to the Project area shall be less than 15 miles per hour, unless otherwise posted.
- 12. Erosion and sediment control measures and BMPs should be implemented in accordance with the approved SWPPP for the Proposed Project for protection of water quality and biological resources.

If you have any questions concerning this letter report, please contact me at (858) 279-4040.

Sincerely,

Monyaa

Margaret Bornyasz Senior Ecologist/Regulatory Specialist

ECORP CONSULTING, INC.

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ATTACHMENT 1.

Site Survey Photos

Attachment 1. Site Photos



Photo 1. Test well site facing west



Photo 2. Test well site facing Morgan Run County Club to the north



Photo 3. Test well site facing east (Dried grass has been removed by Surf Cup)



Photo 4. Existing Surf Cup irrigation pond



Photo 5. Existing swale facing north



Photo 6. Existing swale facing south



Photo 7. Ultimate drainage outlet to San Dieguito River

ATTACHMENT 2.

Rare Plant Potential for Occurrence Table

Attachment 2. Special-Status Species Potential for Occurrence List: Plants

Scientific Name Common Name	Status	Flowering Period / Elevation Range (meters)	Habitat	Potential to Occur Within the Project Area
Acanthomintha ilicifolia San Diego thorn- mint	USFWS: THR CDFW: END CNPS: 1B.1 MSCP: Covered	Apr-Jun (10-960)	Clay; openings. Chaparral, Coastal Scrub, Valley and Foothill Grassland, and Vernal Pools.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Acmispon prostratus Nuttall's acmispon	USFWS: None CDFW: None CNPS: 1B.1 MSCP: None	Mar-Jun (0-10)	Coastal dunes, Coastal scrub (sandy)	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Adolphia californica California adolphia	USFWS: None CDFW: None CNPS: 2B.1 MSCP: None	Dec-May (10-740)	Clay. Chaparral, Coastal Scrub, Valley and Foothill Grasslands.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Agave shawii var. shawii Shaw's agave	USFWS: None CDFW: None CNPS: 2B.1 MSCP: None	Sep-May (3-120)	Maritime succulent scrub, Coastal bluff scrub, Coastal scrub.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Ambrosia monogyra Singlewhorl burrobrush	USFWS: None CDFW: None CNPS: 2B.2 MSCP: None	Aug-Nov (10-500)	Sandy, Chaparral, Sonoran Desert scrub.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.

Scientific Name Common Name	Status	Flowering Period / Elevation Range (meters)	Habitat	Potential to Occur Within the Project Area
Ambrosia pumila San Diego ambrosia	USFWS: END CDFW: None CNPS: 1B.1 MSCP: Covered	April-October (20-415)	Chaparral, coastal scrub, valley and foothill grassland, and vernal pools. Sandy loam or Clay, Disturbed areas, Alkaline areas.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Aphanisma blitoides aphanisma	USFWS: None CDFW: None CNPS: 1B.2 MSCP: Covered	Feb-Jun (1-305)	Sandy or gravelly. Coastal bluff, scrub, Coastal dunes, Coastal scrub.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Arctostaphylos glandulosa ssp. crassifolia Del Mar manzanita	USFWS: END CDFW: None CNPS: 1B.1 MSCP: Covered	Dec-Jun (0-365)	Chaparral (maritime, sandy).	Presumed Absent: Records occur within one mile of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Artemisia palmeri San Diego sagewort	USFWS: None CDFW: None CNPS: 4.2 MSCP: None	May-Sep (15-915)	Sandy, mesic. Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland.	Low: Records occur within five miles of the Project area, and the site provides marginally suitable habitat in the western disturbance area.
Astragalus tener var. titi coastal dunes milk- vetch	USFWS: END CDFW: END CNPS: 1B.1 MSCP: Covered	Mar-May (1-50)	Often vernally mesic areas. Coastal bluff scrub (sandy), Coastal dunes, Coastal prairie (mesic).	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.

Scientific Name Common Name	Status	Flowering Period / Elevation Range (meters)	Habitat	Potential to Occur Within the Project Area
Atriplex coulteri Coulter's saltbush	USFWS: None CDFW: None CNPS: 1B.2 MSCP: None	Mar-Oct (3-460)	alkaline or clay. Coastal bluff scrub, Coastal dunes, Coastal scrub, Valley and foothill grassland.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Atriplex pacifica South Coast saltscale	USFWS: None CDFW: None CNPS: 1B.2 MSCP: None	Mar-Oct (0-140)	Coastal bluff scrub, Coastal dunes, Coastal scrub, Playas.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Atriplex parishii Parish's brittlescale	USFWS: None CDFW: None CNPS: 1B.1 MSCP: None	Jun-Oct (25-1900)	Alkaline. Chenopod scrub, Playas, Vernal pools.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Baccharis vanessae Encinitas baccharis	USFWS: THR CDFW: END CNPS: 1B.1 MSCP: Covered	Aug, Oct, Nov (60-720)	Sandstone. Chaparral (Torrey Pine forest), Cismontane woodland.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Bergerocactus emoryi Golden-spined cereus	USFWS: None CDFW: None CNPS: 2B.2 MSCP: None	May-Jun (3-395)	Sandy. Closed- cone coniferous forest, Chaparral, Coastal scrub.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.

Scientific Name Common Name	Status	Flowering Period / Elevation Range (meters)	Habitat	Potential to Occur Within the Project Area
Bloomeria clevelandii San Diego goldenstar	USFWS: None CDFW: None CNPS: 1B.1 MSCP: Covered	Apr-May (50-465)	Clay. Chaparral, Coastal scrub, Valley and Foothill Grassland, Vernal Pools.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Brodiaea filifolia Thread-leaved brodiaea	USFWS: None CDFW: None CNPS: 1B.2 MSCP: Covered	Mar-Jun (25-1120)	Often Clay. Chaparral, Cismontane woodland, Coastal Scrub, Playas, Valley and Foothill Grassland, Vernal Pools	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Brodiaea orcuttii Orcutt's brodiaea	USFWS: None CDFW: None CNPS: 1B.1 MSCP: Covered	May-Jul (30-1692)	Mesic, Clay. Closed-cone coniferous forest, Chaparral, Cismontane woodland, Meadows and Seeps, Valley and Foothill grassland, Vernal pools.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Calandrinia breweri Brewer's calandrinia	USFWS: None CDFW: None CNPS: 4.2 MSCP: None	Mar-Jun (10-1220)	Sandy or loamy, disturbed sites and burns. Chaparral, Coastal scrub.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Scientific Name Common Name	Status	Flowering Period / Elevation Range (meters)	Habitat	Potential to Occur Within the Project Area
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Camissoniopsis lewisii Lewis' evening- primrose	USFWS: None CDFW: None CNPS: 3 MSCP: None	Mar-May (0-300)	Sandy or clay. Coastal bluff scrub, Cismontane woodland, Coastal dunes, Coastal scrub, Valley and foothill grassland.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Ceanothus verrucosus Wart-stemmed ceanothus	USFWS: None CDFW: None CNPS: 2B.2 MSCP: Covered	Dec-May (1-380)	Chaparral	Presumed Absent: Records occur within one mile of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Centromadia parryi ssp. australis Southern tarplant	USFWS: None CDFW: None CNPS: 1B.1 MSCP: None	May-Nov (0-480)	Marshes and Swamps, Valley and Foothill grassland, Vernal pools	Moderate: Records occur within one mile of the Project area and the site provides marginally suitable habitat.
Centromadia pungens ssp. laevis Smooth tarplant	USFWS: None CDFW: None CNPS: 1B.1 MSCP: None	Apr-Sep (0-640)	Alkaline. Chenopod scrub, Meadows and seeps, Playas, Riparian woodland, Valley and foothill grassland.	Low: Records occur beyond five miles of the Project site and the site provides marginally suitable habitat.
Chaenactis glabriuscula var. orcuttiana Orcutt's pincushion	USFWS: None CDFW: None CNPS: 1B.1 MSCP: None	Jan-Aug (0-100)	Coastal bluff scrub (sandy), Coastal dunes.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.

Scientific Name Common Name	Status	Flowering Period / Elevation Range (meters)	Habitat	Potential to Occur Within the Project Area
Chorizanthe orcuttiana Orcutt's spineflower	USFWS: END CDFW: END CNPS: 1B.1 MSCP: None	Mar-May (3-125)	Sandy openings. Closed-cone coniferous forest, Chaparral (maritime), Coastal scrub.	Presumed Absent: Records occur within one mile of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Chorizanthe polygonoides var. longispina long-spined spineflower	USFWS: None CDFW: None CNPS: 1B.2 MSCP: None	Apr-Jul (30-1530)	Often clay. Chaparral, Coastal scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Cistanthe maritima Seaside cistanthe	USFWS: None CDFW: None CNPS: 4.2 MSCP: None	Mar-Jun (5-300)	Sandy. Coastal bluff scrub, Coastal scrub, Valley and foothill grassland.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Comarostaphylis diversifolia ssp. diversifolia Summer holly	USFWS: None CDFW: None CNPS: 1B.2 MSCP: None	Apr-Jun (30-790)	Chaparral, Cismontane woodland.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Convolvulus simulans small-flowered morning-glory	USFWS: None CDFW: None CNPS: 4.2 MSCP: None	Mar-Jul (30-740)	Clay, serpentinite seeps. Chaparral (openings), Coastal scrub, Valley and foothill grassland.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Corethrogyne filaginifolia var. incana San Diego sand aster	USFWS: None CDFW: None CNPS: 1B.1 MSCP: None	Jun-Sep (3-115)	Coastal bluff scrub, Chaparral, Coastal scrub.	Presumed Absent: Records occur within five miles of the Project area and the site provides suitable habitat.

Scientific Name Common Name	Status	Flowering Period / Elevation Range (meters)	Habitat	Potential to Occur Within the Project Area
Corethrogyne filaginifolia var. linifolia Del Mar Mesa sand aster	USFWS: None CDFW: None CNPS: 1B.1 MSCP: Covered	May, Jul, Aug, Sep (15-150)	Coastal bluff scrub, Chaparral, Coastal scrub	Presumed Absent: Records occur within one mile of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Cryptantha wigginsii Wiggins' cryptantha	USFWS: None CDFW: None CNPS: 1B.2 MSCP: None	Feb-Jun (20-275)	Often clay. Coastal scrub.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Cylindropuntia californica var. californica Snake cholla	USFWS: None CDFW: None CNPS: 1B.1 MSCP: Covered	Apr-May (30-150)	Chaparral, Coastal scrub	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Dichondra occidentalis western dichondra	USFWS: None CDFW: None CNPS: 4.2 MSCP: None	Mar-Jul (50-500)	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Dudleya blochmaniae ssp. blochmaniae Blochman's dudleya	USFWS: None CDFW: None CNPS: 1B.1 MSCP: None	Apr-Jun (5-450)	Rocky, often clay or serpentinite. Coastal bluff scrub, Chaparral, Coastal scrub, Valley and foothill grassland.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.

Scientific Name Common Name	Status	Flowering Period / Elevation Range (meters)	Habitat	Potential to Occur Within the Project Area
Dudleya brevifolia short-leaved dudleya	USFWS: None CDFW: END CNPS: 1B.1 MSCP: Covered	Apr-May (30-250)	Torrey sandstone. Chaparral (maritime, openings), Coastal scrub.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Dudleya variegata Variegated dudleya	USFWS: None CDFW: None CNPS: 1B.2 MSCP: Covered	Apr-Jun (3-580)	Clay. Chaparral, Cismontane woodland, Coastal scrub, Valley and Foothill grassland, Vernal pools.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Dudleya viscida Sticky dudleya	USFWS: None CDFW: None CNPS: 1B.2 MSCP: Covered	May-Jun (10-550)	Rocky. Coastal bluff scrub, Chaparral, Cismontane woodland, Coastal scrub.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Ericameria palmeri var. palmeri Palmer's goldenbush	USFWS: END CDFW: END CNPS: 1B.1 MSCP: None	Sep-Nov (30-600)	Mesic. Chaparral, Coastal scrub.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Eryngium aristulatum var. parishii San Diego button- celery	USFWS: END CDFW: END CNPS: 1B.1 MSCP: Covered	Apr-Jun (20-620)	Mesic. Coastal scrub, Valley and foothill grassland, Vernal pools.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.

Scientific Name Common Name	Status	Flowering Period / Elevation Range (meters)	Habitat	Potential to Occur Within the Project Area
Erysimum ammophilum Sand-loving wallflower	USFWS: None CDFW: None CNPS: 1B.2 MSCP: None	Feb-Jun (0-60)	Sandy, openings. Chaparral (maritime), Coastal dunes, Coastal scrub.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Euphorbia misera Cliff spurge	USFWS: None CDFW: None CNPS: 2B.2 MSCP: None	December- October (10-500)	Occurs in coastal bluff scrub, coastal scrub.	Presumed Absent: Records occur within one mile of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Ferocactus viridescens San Diego barrel cactus	USFWS: None CDFW: None CNPS: 2B.1 MSCP: Covered	May-June (3-450)	Occurs in chaparral, coastal scrub, valley and foothill grassland, and vernal pools.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Frankenia palmeri Palmer's frankenia	USFWS: None CDFW: None CNPS: 2B.1 MSCP: None	May-Jul (0-10)	Coastal dunes, Marshes and swamps (coastal salt), Playas.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Geothallus tuberosus Campbell's liverwort	USFWS: None CDFW: None CNPS: 1B.1 MSCP: None	(10-600)	Coastal scrub (mesic), Vernal pools.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present.
Harpagonella palmeri Palmer's grapplinghook	USFWS: None CDFW: None CNPS: 4.2 MSCP: None	Mar-May (20-955)	Clay. Chaparral, Coastal scrub, Valley and foothill grassland.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.

Scientific Name Common Name	Status	Flowering Period / Elevation Range (meters)	Habitat	Potential to Occur Within the Project Area
Hazardia orcuttii Orcutt's hazardia	USFWS: None CDFW: THR CNPS: 1B.1 MSCP: None	Aug-Oct (80-85)	Often clay. Chaparral (maritime), Coastal scrub.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Heterotheca sessiliflora ssp. sessiliflora Beach goldenaster	USFWS: None CDFW: None CNPS: 1B.1 MSCP: None	Mar-Dec (0-1225)	Coastal scrub (mesic), Vernal pools.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Hordeum intercedens Vernal barley	USFWS: None CDFW: None CNPS: 3.2 MSCP: None	Mar-Jun (5-1000)	Coastal dunes, Coastal scrub, Valley and foothill grassland (saline flats and depressions), Vernal pools.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
<i>Isocoma menziesii</i> var. <i>decumbens</i> Decumbent goldenbush	USFWS: None CDFW: None CNPS: 1B.2 MSCP: None	Apr-Nov (10-135)	Chaparral, Coastal scrub.	Presumed Absent: Records occur within one mile of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Iva hayesiana San Diego marsh- elder	USFWS: None CDFW: None CNPS: 2B.2 MSCP: None	Apr-Oct (10-500)	Marshes and swamps, Playas.	Presumed Absent: Records occur within one mile of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Lasthenia glabrata ssp. coulteri Coulter's goldfields	USFWS: None CDFW: None CNPS: 1B.1 MSCP: None	Feb-Jun (1-1220)	Marshes and swamps (coastal salt), Playas, Vernal pools	Low: Records occur within five miles of the Project area and marginally suitable habitat is present.

Scientific Name Common Name	Status	Flowering Period / Elevation Range (meters)	Habitat	Potential to Occur Within the Project Area
Lepidium virginicum var. robinsonii Robinson's pepper- grass	USFWS: None CDFW: None CNPS: 4.3 MSCP: None	Jan-Jul (1-885)	Chaparral, Coastal scrub.	Low: Records occur within five miles of the Project area and marginally suitable habitat is present.
Leptosyne maritima Sea dahlia	USFWS: None CDFW: None CNPS: 2B.2 MSCP: None	Mar-May (5-150)	Coastal bluff scrub, Coastal scrub.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Lycium californicum California box-thorn	USFWS: None CDFW: None CNPS: 4.2 MSCP: None	Mar, Jun, Jul, Aug (5-150)	Coastal bluff scrub, Coastal scrub.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
<i>Microseris</i> <i>douglasii ssp.</i> <i>platycarpha</i> Small-flowered microseris	USFWS: None CDFW: None CNPS: 4.2 MSCP: None	Mar-May (15-1070)	Clay, Cismontane woodland, Coastal scrub, Valley and foothill grassland, Vernal pools.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Mobergia calculiformis Light gray lichen	USFWS: None CDFW: None CNPS: 3 MSCP: None	N/A	On rocks. Coastal scrub.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.

Scientific Name Common Name	Status	Flowering Period / Elevation Range (meters)	Habitat	Potential to Occur Within the Project Area
Monardella viminea Willowy monardella	USFWS: END CDFW: END CNPS: 1B.1 MSCP: Covered	Jun-Aug (50-225)	Alluvial ephemeral washes. Chaparral, Coastal scrub, Riparian forest, Riparian scrub, Riparian woodland.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
<i>Myosurus minimus</i> ssp. <i>apus</i> Little mousetail	USFWS: None CDFW: None CNPS: 3.1 MSCP: None	Mar-Jun (20-640)	Valley and Foothill grassland, Vernal Pools	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Navarretia fossalis spreading navarretia	USFWS: None CDFW: None CNPS: 1B.1 MSCP: None	Apr-Jun (30-655)	Chenopod scrub, Marshes and swamps, Playas, Vernal pools.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Navarretia prostrata Prostrate vernal pool navarretia	USFWS: None CDFW: None CNPS: 1B.1 MSCP: Covered	Apr-Jul (3-1210)	Mesic. Coastal scrub, Meadows and seeps, Valley and foothill grassland (alkaline), Vernal pools.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Nemacaulis denudata var. denudate Coast wooly heads	USFWS: None CDFW: None CNPS: 1B.1 MSCP: None	Mar-Aug (0-100)	Dunes and coastal strand	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.

Scientific Name Common Name	Status	Flowering Period / Elevation Range (meters)	Habitat	Potential to Occur Within the Project Area
Orcuttia californica California Orcutt grass	USFWS: END CDFW: END CNPS: 1B.1 MSCP: Covered	Apr-Aug (15-660)	Vernal Pools	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Orobanche parishii ssp. brachyloba Short-lobed broomrape	USFWS: None CDFW: None CNPS: 4.2 MSCP: None	Apr-Oct (3-305)	Sandy. Coastal bluff scrub, Coastal dunes, Coastal scrub.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
<i>Phacelia</i> <i>ramosissima</i> var. <i>austrolitoralis</i> South coast branching phacelia	USFWS: None CDFW: None CNPS: 3.2 MSCP: None	Mar-Aug (5-300)	Sandy, sometimes rocky. Chaparral, Coastal dunes, Coastal scrub, Marshes and swamps (coastal salt).	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Phacelia stellaris Brand's star phacelia	USFWS: None CDFW: None CNPS: 1B.1 MSCP: None	Mar-Jun (1-400)	Coastal dunes, Coastal scrub.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Pinus torreyana ssp. torreyana Torrey pine	USFWS: None CDFW: None CNPS: 1B.2 MSCP: Covered	(30-160)	Sandstone. Closed-cone coniferous forest, Chaparral.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.

Status	Elevation Range (meters)	Habitat	Potential to Occur Within the Project Area
USFWS: None CDFW: None CNPS: 4.2 MSCP: None	Mar-Jun (15-1585)	Chaparral, Cismontane woodland, Valley and foothill grassland.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
USFWS: END CDFW: END CNPS: 1B.1 MSCP: Covered	May-July (100-200)	Vernal pools, Chaparral, Coastal Sage Scrub	Presumed Absent: Records occur within five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
USFWS: None CDFW: None CNPS: 1B.1 MSCP: None	Feb-Apr (15-400)	Sandy, clay loam. Closed-cone coniferous forest, Chaparral, Coastal scrub.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
USFWS: None CDFW: None CNPS: 4.2 MSCP: None	Mar-Jun (50-1300)	Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
USFWS: None CDFW: None CNPS: 4.1 MSCP: None	(20-640)	Chaparral, Coastal scrub.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
	Status USFWS: None CDFW: None CNPS: 4.2 MSCP: None USFWS: END CDFW: END CNPS: 1B.1 MSCP: Covered USFWS: None CDFW: None CNPS: 1B.1 MSCP: None CNPS: 4.2 MSCP: None CNPS: 4.2 MSCP: None CNPS: 4.1 MSCP: None	StatusElevation Range (meters)USFWS: None CDFW: None CNPS: 4.2 MSCP: NoneMar-Jun (15-1585)USFWS: END CDFW: END CNPS: 1B.1 MSCP: CoveredMay-July (100-200)USFWS: None CDFW: None (15-400)USFWS: None CDFW: None CDFW: None CDFW: None CDFW: None CNPS: 4.2 MSCP: NoneMar-Jun (50-1300)USFWS: None CDFW: None CNPS: 4.1 MSCP: None(20-640) (20-640)	StatusElevation Range (meters)HabitatUSFWS: None CDFW: None CNPS: 4.2 MSCP: NoneMar-Jun (15-1585)Chaparral, Cismontane woodland, Valley and foothill grassland.USFWS: END CDFW: END CDFW: END CNPS: 1B.1 MSCP: CoveredMay-July (100-200)Vernal pools, Chaparral, Coastal Sage ScrubUSFWS: None CDFW: None (20-1300)Sandy, clay loam. Chaparral, Cismontane woodland, clay loam. Chaparral, Coastal scrub.USFWS: None CDFW: None(20-640)USFWS: None CDFW: None CDFW: None CDFW: None CDFW: None CDFW: None CDFW: None(20-640)

Scientific Name Common Name	Status	Flowering Period / Elevation Range (meters)	Habitat	Potential to Occur Within the Project Area
<i>Senecio aphanactis</i> chaparral ragwort	USFWS: None CDFW: None CNPS: 4.1 MSCP: None	Jan-Apr(May) (15-800)	Sometimes alkaline. Chaparral, Cismontane woodland, Coastal scrub.	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
<i>Sidalcea</i> <i>neomexicana</i> salt spring checkerbloom	USFWS: None CDFW: None CNPS: 2B.2 MSCP: None	Mar-Jun (15-1530)	Alkaline, mesic. Chaparral, Coastal scrub, Lower montane coniferous forest, Mojavean desert scrub, Playas.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Stemodia durantifolia White wooly stemodia	USFWS: None CDFW: None CNPS: 2B.1 MSCP: None	Jan-Dec (0-400)	Wetland and riparian habitats	Presumed Absent: Records occur within five miles of the Project area, however suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Stipa diegoensis San Diego County needle grass	USFWS: None CDFW: None CNPS: 4.2 MSCP: None	Feb-Jun (10-800)	Rocky, often mesic. Chaparral, Coastal scrub.	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
Suaeda esteroa Estuary seablite	USFWS: None CDFW: None CNPS: 1B.2 MSCP: None	Jul-Oct (0-5)	Marshes and swamps (coastal salt).	Presumed Absent: This species was observed during the site survey within the discharge swale, approximately 300 ft south of pipe and rip rap installation area. Impacts to this species are not anticipated as a part of the Proposed Project.

Scientific Name Common Name	Status	Flowering Period / Elevation Range (meters)	Habitat	Potential to Occur Within the Project Area
Suaeda taxifolia Woolly seablite	USFWS: None CDFW: None CNPS: 4.2 MSCP: None	Jan-Dec (0-50)	Coastal bluff scrub, Coastal dunes, Marshes and swamps (margins of coastal salt).	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present. This species would have been detected during the August 2018 survey, if present.
(FESA, USFWS) END: Federally listed, er THR: Federally listed, th Other Designations (MSCP [Multiple Species Covered: Covered species California Native Plant	ndangered reatened c Conservation Plan]) es Society (CNPS) Des i	ignations:	State I (CESA, END: THR:	Designations CDFW) State-listed, endangered State-listed, threatened
 1A: Plants presumed e 1B: Plants rare and en 2: Plants rare, threate 3: Plants about which 4: Plants of limited dis Plants 1B, 2, and 4 exter .1 Seriously endangered .2 Fairly endangered in .3 Not very endangered 	extinct in California. dangered in CA and ned, or endangered need more informat stribution; a watch lis nsion meanings: ed in CA (over 80% o n California (20-80% ed in CA (<20% of oc	throughout their in CA but more c ion; a review list st. f occurrences thre occurrences threat	r range. common elsewhere in reatened / high degree eatened) ened or no current thr	their range. e and immediacy of threat) eats known)
All special-status plant specie based on the following criter Present: Species was observ High: Habitat (including soils recorded within 5 mi (8 km) of Moderate: Habitat (including occurs within the database se marginal or limited amounts Low: Limited habitat for the s not within 5 mi (8 km) of the the database search. Presumed Absent: Species w time for identification; or hab of the species does not include	es found within the data ia guidelines: ed in the Proposed Pro- sand elevation factors) of the site. g soils and elevation fac- earch, but not within 5 i of habitat occurs in the species occurs in the Pr- site; or suitable habitat vas not observed during itat (including soils and de the Proposed Projec	abase searches wer ject area during a for the species occ tors) for the specie mi (8 km) of the sit Proposed Project oposed Project are strongly associate g focused surveys o l elevation factors) t area.	re assessed for their pote site visit or previous focus curs in the Proposed Project es occurs in the Proposed e; or a known occurrence area. and a known occurrence d with the species occurs conducted in accordance does not exist on the Pro	ntial to occur in the Proposed Project area sed survey. ect area and a known occurrence has been Project area and a known occurrence occurs within 5 mi (8 km) of the site and ce occurs within the database search, but s on site, but no records were found within with protocol guidelines at an appropriate oject site, or the known geographic range
Note: Location information o environmental factors associa potential for occurrence. Sources: California Natural D	n some sensitive specie ated with species occuri	es may be of quest rence requirements W 2018a) Californi	ionable accuracy or unave s may be considered suffi	ailable; therefore, for survey purposes, icient reason to give a species a positive

ATTACHMENT 3.

Wildlife Potential for Occurrence Table

Scientific Name Common Name	Status	Habitat	Potential to Occur in the Survey Area
		CRUSTACEANS	1
Streptocephalus woottoni Riverside Fairy Shrimp	USFWS: END CDFW: None MSCP: Covered	Occurs in deep vernal pools, tectonic swales, and earth slump basins	Presumed Absent: Records occur beyond five miles of the survey area and suitable habitat does not occur.
Branchinecta sandiegonensis San Diego Fairy Shrimp	USFWS: END CDFW: None MSCP: Covered	Occurs in deep vernal pools, tectonic swales, and earth slump basins	Presumed Absent: Records occur beyond five miles of the survey area and suitable habitat does not occur.
		REPTILES	
Aspidoscelis hyperythra Orange-throated whiptail	USFWS: None CDFW: WL MSCP: Covered	Semi-arid open areas with coarse soils including coastal sage scrub, chaparral, and dry riparian areas and washes.	Moderate: Records occur within one mile of the survey area and marginally suitable habitat is present.
Arizona elegans occidentalis California glossy snake	USFWS: None CDFW: SSC MSCP: None	Variety of arid habitats including arid scrub, rocky washes, grasslands, and chaparral.	Low : Records occur within five miles of the survey area and marginally suitable habitat is present.
Phrynosoma blainvillii coast horned lizard	USFWS: None CDFW: SSC MSCP: None	Open areas of valleys, foothills, and semiarid mountains with sandy soil and low vegetation including chaparral, woodlands, and grasslands.	Low: Records occur within five miles of the survey area and marginally suitable habitat is present. Ant mounds (primary prey base) were not observed within the survey area.

Attachment 3. Special-Status Species Potential for Occurrence List: Wildlife

Scientific Name Common Name	Status	Habitat	Potential to Occur in the Survey Area
Plestiodon skiltonianus interparietalis Coronado skink	USFWS: None CDFW: WL MSCP: None	Inhabits grassland, chaparral, especially in open sunny areas, also prefers rocky areas near streams with lots of vegetation	Low: Records occur within five miles of the survey area and marginally suitable habitat is present.
Crotalus ruber red-diamond rattlesnake	USFWS: None CDFW: SSC MSCP: None	Found in coastal chaparral, arid scrub, rocky grassland, oak and pine woodlands, desert mountain slopes and rocky desert flats.	Low: Records occur within five miles of the survey area and marginally suitable habitat is present.
	- 1	BIRDS	
Rallus obsoletus levipes Light-footed Ridgway's Rail	USFWS: END CDFW: FP MSCP: Covered	Saltwater marshes, freshwater marshes, and mangrove swamps	Assumed Present: This species is known to occur within the survey area however it is unlikely to occur within the Project area.
Agelaius tricolor Tricolored blackbird	USFWS: None CDFW: THR MSCP: Covered	Wetlands, agricultural fields	Low: Records occur beyond five miles of the survey area however marginally suitable habitat is present. This species would have been detected during the August 2018 survey, if present
Polioptila californica californica Coastal California Gnatcatcher	USFWS: THR CDFW: SSC MSCP: Covered	Dry coastal slopes, washes, and mesas with areas of low vegetation and coastal sage scrub.	Presumed Absent: Records occur within one mile of the Project area. Marginally suitable habitat is present approximately 500 ft north of the project site, but this habitat is noncontiguous and does not host suitable nesting habitat. Suitable nesting habitat is not present in the survey area.

Scientific Name Common Name	Status	Habitat	Potential to Occur in the Survey Area
Sterna antillarum browni California Least Tern	USFWS: END CDFW: FP MSCP: Covered	Sparsely vegetated sandbars along rivers, sand and gravel pits, lake and reservoir shorelines	Presumed Absent: Records occur beyond five miles of the Project area and suitable habitat is not present.
<i>Vireo bellii pusillus</i> Least Bell's Vireo	USFWS: END CDFW: SSC MSCP: Covered	Riparian woodlands and willow- cottonwood forests particularly with streamside thickets and dense brush.	Low: Records occur beyond five miles of the survey area however marginally suitable habitat is present. This species would have been detected during the August 2018 survey, if present.
Empidonax traillii extimus Southwestern Willow Flycatcher	USFWS: END CDFW: END MSCP: Covered	Riparian woodlands particularly with willow thickets. Nests in densest areas of shrubs and trees with low-density canopies.	Presumed Absent: Records occur beyond five miles of the survey area and it does not contain suitable habitat.
Charadrius nivosus nivosus Western Snowy Plover	USFWS: THR/BCC CDFW: SSC MSCP: Covered	Sandy beaches, salt pond levees & shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	Presumed Absent: Records occur beyond five miles of the survey area and it does not contain suitable habitat.
Passerculus sandwichensis beldingi Belding's savannah sparrow	USFWS: None CDFW: END MSCP: Covered	Valleys, moist grasslands and meadows	Moderate: Records occur within five miles of the survey area and it provides marginally suitable habitat.

Scientific Name Common Name	Status	Habitat	Potential to Occur in the Survey Area
Artemisiospiza belli belli Bell's sage sparrow	USFWS: BCC CDFW: WL MSCP: None	Chaparral dominated with California sagebrush or chamise. Nests on ground or within 1 meter above ground in a shrub.	Presumed Absent: Records occur within five miles of the survey area, however suitable habitat is not present.
Athene cunicularia burrowing owl	USFWS: BCC CDFW: SSC MSCP: Covered	Open grasslands including prairies, plains, and savannah, or vacant lots and airports. Nests in abandoned dirt burrows.	Low: Records occur within five miles of the survey area, however suitable small mammal burrows and open non-native grassland habitat was not observed. This species or sign of its presence would have been detected during the August 2018 survey, if present.
Aimophila ruficeps canescens southern California rufous-crowned sparrow	USFWS: None CDFW: WL MSCP: Covered	Coastal sage scrub, dominated by CA sagebrush, or in coastal bluff scrub with low scattered scrub and moderate to steep, dry, and rocky slopes. Nests on ground or within 1 meter of ground in shrubs or trees.	Presumed Absent: Records occur within five miles of the survey area, however suitable habitat is not present.
Laterallus jamaicensis coturniculus California black rail	USFWS: None CDFW: THR MSCP: None	Inhabits marshes along the coast and inland.	Moderate: Records occur within five miles of the survey area. Suitable habitat occurs in the survey area however it is unlikely to occur within the Project area.

Scientific Name Common Name	Status	Habitat	Potential to Occur in the Survey Area
Elanus leucurus white-tailed kite	USFWS: none CDFW: FP MSCP: None	Open habitat in lowlands including savanna, open woodlands, marshes, and agricultural fields. Nests in trees near a marsh.	Low: Records occur within five miles of the survey area, however suitable nesting habita is not present. The species may forage in the survey area however it is unlikely in the Project area.
Eremophila alpestris actia California horned lark	USFWS: None CDFW: WL MSCP: None	Bare open areas dominated by low vegetation or widely scattered shrubs, includes prairies, deserts, and plowed fields. Nests in a hollow on the ground.	Low: Records occur within five miles of the survey area and the site provides marginally suitable habitat
Campylorhynchus brunneicapillus sandiegensis coastal cactus wren	USFWS: None CDFW: SSC MSCP: Covered	Obligate inhabitant of tall cactus stands within coastal sage scrub habitat.	Presumed Absent: Records occur within five miles of the survey area, however suitable habitat is not present.
		MAMMALS	
Eumops perotis californicus Western Mastiff Bat	USFWS: None CDFW: SSC MSCP: None	Rock crevices that form vertical or nearly vertical cliffs	Presumed Absent: Records occur within five miles of the survey area, however suitable habitat is not present.
Perognathus longimembris pacificus Pacific Pocket	USFWS: END CDFW: SSC MSCP: None	Sandy, Coastal sage scrub, Chaparral, Sonoran Desert	Presumed Absent: Records occur within five miles of the survey area, however suitable habitat is not present.

Scientific Name Common Name	Status	Habitat	Potential to Occur in the Survey Area
Chaetodipus fallax fallax northwestern San Diego pocket mouse	USFWS: None CDFW: SSC MSCP: None	Coastal scrub, chaparral, sagebrush, and grasslands in southwestern California including portions of San Diego, Riverside, and San Bernardino counties.	Low: Records occur within five miles of the survey area and marginally suitable habitat occurs in the survey area, however it is unlikely in the Project area.
Neotoma lepida intermedia San Diego desert woodrat	USFWS: None CDFW: SSC MSCP: None	Coastal scrub from San Diego to San Luis Obispo County, particularly in dense canopies, rock outcrops, rocky cliffs, and slopes.	Low: Records occur within five miles of the survey area and it provides marginally suitable habitat. This species (or their middens) would have been detected in the Project area during the August 2018 survey, if present.
<i>Lasiurus blossevillii</i> western red bat	USFWS: None CDFW: SSC MSCP: None	Roosts in trees or large leafy shrubs and tend to avoid caves and buildings. Occurs in lowlands to mountains, in woodlands and forests and, especially along riparian habitats.	Presumed Absent: Records occur within five miles of the survey area, however suitable habitat is not present.
Myotis yumanensis Yuma myotis	USFWS: None CDFW: None MSCP: None	Roosts in buildings, mines, caves, or crevices. The species also has been seen roosting in abandoned swallow nests and under bridges.	Presumed Absent: Records occur within five miles of the survey area, however suitable habitat is not present.

Scientific Name Common Name	Status	Habitat	Potential to Occur in the Survey Area
<i>Lasiurus cinereus</i> hoary bat	USFWS: None CDFW: SSC MSCP: None	Prefers trees at the edge of clearings. Winters in California. Prefers regions dominated by pasture or croplands, often roosts in trees.	Presumed Absent: One record occurs within five miles of the survey area, however suitable habitat is not present.
Nyctinomops femorosaccus pocketed free-tailed bat	USFWS: None CDFW: SSC MSCP: None	Roosts in crevices of outcrops and cliffs, shallow caves, and buildings. Found along rugged canyons, high cliffs, and semiarid rock outcroppings.	Presumed Absent: One record occurs within five miles of the survey area, however suitable habitat is not present.
<i>Lepus californicus bennettii</i> San Diego black- tailed jackrabbit	USFWS: None CDFW: SSC MSCP: None	Variety of open or semi-open country including grasslands, croplands, and sparse coastal scrub.	High: Records occur within five miles of the survey area and the site provides suitable habitat.
Chaetodipus californicus femoralis Dulzura pocket mouse	USFWS: None CDFW: SSC MSCP: None	Occurs in a variety of habitats, especially where grassland and chaparral occur in	Low: Records occur within five miles of the survey area and the site provides marginally suitable habitat.

Scientific Name Common Name	Status	Habitat	Potential to Occur in the Survey Area
Federal Designations:			
(Federal Endangered Spec	cies Act, United Sta	tes Fish and Wildlife Se	ervice [USFWS]
BCC: Birds of conservation	n concern		
END: Federally listed, end	dangered		
THR: Federally listed, thre	atened		

State Designations (Wildlife):

(California Endangered Species Act, California Department of Fish and Wildlife [CDFW])
 END: State-listed, endangered
 THR: State-listed, threatened
 FP: State-fully protected
 SSC: Species of Special Concern

Other Designations

(MSCP [Multiple Species Conservation Plan]) **Covered:** Covered species

All sensitive species found within the database searches were assessed for their potential to occur in the survey area and Proposed Project area based on the following criteria guidelines:

Present: Species was observed in the survey area during a site visit or previous focused survey. **High:** Habitat (including soils and elevation factors) for the species occurs in the survey area and a known occurrence has been recorded within 5 mi (8 km) of the site.

Moderate: Habitat (including soils and elevation factors) for the species occurs in the survey area and a known occurrence occurs within the database search, but not within 5 mi (8 km) of the site; or a known occurrence occurs within 5 mi (8 km) of the site and marginal or limited amounts of habitat occurs in the survey area.

Low: Limited habitat for the species occurs in the survey area and a known occurrence occurs within the database search, but not within 5 mi (8 km) of the site; or suitable habitat strongly associated with the species occurs on site, but no records were found within the database search.

Presumed Absent: Species was not observed during focused surveys conducted in accordance with protocol guidelines at an appropriate time for identification; or habitat (including soils and elevation factors) does not exist on site, or the known geographic range of the species does not include the survey area.

Note: Location information on some sensitive species may be of questionable accuracy or unavailable; therefore, for survey purposes, environmental factors associated with species occurrence requirements may be considered sufficient reason to give a species a positive potential for occurrence.

Source: California Natural Diversity Database (CDFW 2018a), IPAC Trusted Resources List (USFWS 2018a).



APPENDIX C: CULTURAL RESOURCES ASSESSMENT



Cultural Resources Survey Report for the San Dieguito Valley Groundwater Desalination Pilot Project, City of San Diego, San Diego County, California

LDR number:

U.S. Geological Survey 7.5-minute Quadrangle:

USGS Del Mar 7.5" Topographic Quadrangle

Submitted to:

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MANAGEMENT SUMMARY

A cultural resources investigation was conducted for the San Dieguito Valley Groundwater Desalination Design Pilot Project (Project) located on incorporated City of San Diego lands directly adjacent to the municipal boundary with the County of San Diego between Via De La Valle and San Dieguito Road in the San Dieguito River Valley, California. The Project is within City of San Diego jurisdiction. The Olivenhain Municipal Water District (OMWD) is the project sponsor and the lead agency under the California Environmental Quality Act (CEQA) for this Project. The Project Area is less than three acres in size.

The cultural resources investigation included a records search and field survey. On July 31, 2018, a cultural resources records search of the California Historical Resources Information System (CHRIS) was requested from the South Coastal Information Center (SCIC) at San Diego State University, and a search of the Sacred Lands File was requested from the Native American Heritage Commission (NAHC) in Sacramento. On September 10, 2018, an intensive systematic pedestrian survey of the Project Area was conducted by ECORP archaeologist John O'Connor. An additional off-site area was surveyed by John O'Connor on September 24, 2018.

The CHRIS records search results indicate that 100 previous cultural resources studies have been conducted within a one-mile search radius of the Project Area. Of these studies, 20 investigations overlapped the Project Area. A total of 42 cultural resources have been previously recorded within one mile of the Project Area, including 38 pre-contact (prehistoric) sites, two historic-era sites, and two multi-component sites. Additionally, six historic addresses are listed within the one-mile search radius. No previously recorded sites or historic-era properties are located within the Project Area

The results of the Sacred Lands File search by the NAHC did not indicate the presence of Native American sacred lands within the vicinity of the Project Area. In addition to the search of the Sacred Lands File, the NAHC identified 27 Native American groups and individuals with historical and traditional ties to the Project Area. Letters were sent by OMWD to two Native American organizations on August 29, 2018, in compliance with California Assembly Bill 52 (AB 52). One Native American group, the San Luis Rey Band of Mission Indians, had previously requested consultation with OMWD regarding proposed projects in its traditional cultural area.

Field surveys of the property were conducted on September 10 and September 24, 2018, by a qualified ECORP archaeologist. One historic-era cultural resource was identified during the field surveys. This resource has been evaluated as not eligible for listing on the California Register of Historical Resources (CRHR) and the National Register of Historic Places (NRHP).

I. PROJECT DESCRIPTION AND LOCATION

The San Dieguito Valley Groundwater Desalination Design Pilot (Project) will install and conduct a oneyear pump test to support Olivenhain Municipal Water District (OMWD) in pursuing brackish groundwater desalination in the San Dieguito Valley Groundwater Basin. The Project will involve installation and operation of a test well, installation and operation of a manganese field test, and discharge of pump test water to the Surf Cup irrigation pond and, if needed during wet-periods discharge, to an onsite drainage swale at the western edge of Surf Cup.

The San Dieguito Valley Groundwater Desalination Design Pilot (Project) is located on City of San Diego lands within the San Dieguito River Valley. The proposed test well site will be located on Surf Cup Soccer Fields property, which is designated Park, Open Space, and Recreation in the City of San Diego General Plan. Specifically, the Project Area is located in an unsectioned Portion of the San Dieguito Landgrant, San Bernardino Base and Meridian, as depicted on the U.S. Geological Survey (USGS) 1994 Del Mar California 7.5-minute Topographic Quadrangle maps (Figure 2). The Project Area is located in the San Dieguito River Valley, approximately 20 miles north of downtown San Diego and ±3 miles inland from Solana Beach. Adjacent land uses include the Morgan Run Country Club to the north, Rancho Paseana to the east, San Dieguito River and Fairbanks Ranch Country Club to the south, and Surf Cup Soccer Fields and Via de la Valle to the west. The proposed test well site and discharge pipelines can be accessed from Via de la Valle, along an existing dirt access road on the Surf Cup property.

John T. O'Connor, M.A., RPA authored the report and completed the field surveys, under the direction of Lisa Westwood, RPA, who meets the qualifications for Principal Investigator (resumes in Attachment A). This report was prepared in general conformance with Appendix D of the City of San Diego's Archaeological Resources Report Form from the Historical Resources Guidelines of the Land Development Manual, which is used when no archaeological resources were identified within a project area.



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Figure 1. Project Vicinity 2018-140 RW Extension to San Diego Surf Cup



Map Date: 9/25/2018 iService Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed



Figure 2. Project Location

2018-139 San Dieguito Valley Brackish Groundwater Desalination Pilot Project

II. SETTING

Natural Environment

The Project Area bridges the San Dieguito River ±3 miles inland from the San Dieguito Lagoon at an elevation of approximately 250 feet above sea level. The environment can be characterized as a Mediterranean climate with plant communities associated with the California Coastal Chaparral Forest and Scrub province. The Project will extend under the San Dieguito River, an important regional waterway that supports riparian vegetation communities at various degrees of constraint from the inland mountains to the coast. The vegetation within the vicinity includes disturbed wetlands, disturbed coastal and valley freshwater marsh/southern riparian scrub, ornamental trees, agriculture, and disturbed Diegan coastal sage scrub. Rancho San Dieguito (Rancho Santa Fe) was used for cattle grazing and agriculture for decades in the nineteenth and twentieth centuries, and the area is now predominantly occupied by residential development, industrial, and recreational land use facilities.

Local geology can be characterized as Quaternary alluvium, with excessively drained riverwash in the proximate vicinity of the San Dieguito River and Quaternary marine and river terrace escarpments at the southwest edge of the Project Area. Surface sediments of the Project Area are primarily sandy loam entisols and mollisols as components of the alluvial fan and flood plain. Leached alfisols are present in the marine terrace soils at the west end of the Project Area. Five primary soil groups are present in the Project Area. Soils in the river corridor are classified as a mix of riverwash. Corralitos loamy sand with 0 to 5 percent slopes exists in the western portion of the Project Area and contains approximately 81 cm of A-horizon soils overlying 102 cm of C-horizon soils. Tujunga sand with 0 to 5 percent slopes is present both west and east of the riverwash drainage occupied by the San Dieguito River. This soil type displays approximately 4 cm of A-horizon soil capping approximately 196 cm of C-horizon soils. Grangeville fine sandy loam with 0 to 2 percent slopes exists in the central portion of the Project Area to the east of the river and contains 28 cm of A-horizon, 23 cm of B-horizon, and 101 cm of C-horizon soils. Eroded Huerohuero loam with 15 to 30 percent slopes is present in the marine terrace sediments at the very west end of the Project Area (Soilweb 2018). These soils data indicate that there is a potential for buried archaeological resources, but that the probability of in situ or intact archaeological deposits is relatively low.

Prehistory

The archaeological history of southern California is remarkably complex, with a great deal of variation and the overlapping of specific technological and cultural traditions from the onset of documented human habitation in the terminal Pleistocene to the period of European contact in the Late Holocene. Today, archaeology and culture history are typically described according to geological epoch, with delineations in years before present (B.P.) between the Pleistocene (>10,000 B.P.), Early Holocene (10,000-6,500 B.P.), Middle Holocene (6,500 B.P.-3,500 B.P.) and the Late Holocene (3,500 B.P. to present). This approach places human history squarely in the realm of greater ecology and geological history in a way that allows

discussion of human activity through time without limitations imposed by provincial labels. In California this distinct use of geological terminology is not entirely arbitrary as elements of technological change and diversification in cultural practices are observable at the transition of temporal periods (Erlandson and Colten 1991). However, terminology that is generally accepted by California archaeologists and the California Office of Historic Preservation (OHP) is still helpful in describing ancient patterns of human activity. Below are discussed the predominant archaeological patterns through time in San Diego County in relation to behavioral traditions and temporal periods, and in specific reference to the Project Area.

San Dieguito Complex – 10,000 to 8,500 B.P.

Terminal Pleistocene archaeological deposits are notably present on the California Channel Islands, but the onset of human activity in coastal areas of the Southern Bight appear after 10,000 B.P. (Erlandson et al. 2007). Early Holocene warming temperatures, rising sea level, and megafaunal extinction resulted in landscape and resource change that contributed to alternative subsistence strategies in local populations, with an emphasis on hunting smaller game and increasing reliance on plant gathering. Early Holocene archaeological sites in San Diego County occur around bays, sloughs, and coastal valleys that allowed early peoples continued access to aquatic resources. These coastal sites contain large amounts of marine faunal remains along with worked tools, such as lithic bifaces, milling tools, and bone tools from which archaeologists may reconstruct the human past in southern California (Gallegos 1991).

The San Dieguito Complex is a cultural tradition originating in the Early Holocene and defined by material found at the Harris archaeological site (CA-SDI-149) on the San Dieguito River near Lake Hodges in San Diego County (Warren 1968). Diagnostic artifacts associated with the San Dieguito Complex include lithic manufacturing implements and a variety of chipped stone tools, including projectile points, knives, scrapers, engraving tools, and stone crescents (Knell and Becker 2017; Koerper et al. 1991). Particular interest has been paid to the stone crescents that appear in Terminal Pleistocene and Early Holocene deposits throughout the region. Though only a single specimen was found at CA-SDI-149, this class of artifacts has come to define human-environmental interactions of the period due to association with paleoshorelines and wetland habitats that existed on the Channel Islands, along the California coast, in interior areas of California and the Great Basin, and further east in what is today Wyoming and Colorado between ~12,000-8,000 cal B.P. (Moss and Erlandson 2013). The majority of these crescents appear to be utilitarian implements for the hunting of birds (Erlandson and Braje 2008; Moss and Erlandson 2013). Sanchez et al. (2017) have confirmed a strong spatial association between stone crescents and reconstructed wetland habitats, supporting the argument that these artifacts were predominantly used for the harvesting of aquatic species and avifaunal resources that once existed along Terminal Pleistocene-Early Holocene paleoshorelines.

The San Dieguito Complex at CA-SDI-149 dates to between $9,030 \pm 350$ B.P. and $8,490 \pm 400$ B.P. (Gallegos 1991; Knell and Becker 2017). The presence of comparable artifacts and archaeological deposits are seen specifically throughout Southern California and northwestern Mexico between 9,000 and 7,000 B.P. However, it is important to note the scarcity of San Dieguito materials and radiocarbon age determinations as well as the substantial spatiotemporal overlap with artifacts and faunal assemblages

typically associated with later cultural traditions (Scharlotta 2015). The established use of groundstone technologies during the Early Holocene provides support for the continuation of certain subsistence practices during the Middle Holocene concurrent with decreases in wetland associated flaked-stone lithic assemblages. Early Holocene sites in coastal San Diego County have yielded artifacts and subsistence remains characteristic of succeeding technological traditions, including manos, metates, core-cobble tools, and species of marine shell more closely associated with the lagoon ecosystems, hotter and drier environmental contexts, and variable behavioral practices of the Middle Holocene (Gallegos 1991; Koerper et al. 1991).

La Jolla Complex – 8,500 to 1,300 B.P.

Sea levels continued to rise during the Early to Middle Holocene transition, eventually stabilizing around 6,000 B.P. and filling low-lying coastal areas and canyons in what became a relatively dense concentration of highly productive estuaries and coastal ecosystems (Masters and Gallegos 1997). The relationship of human populations to coastal resources consequently changed through time. Rocky reefs and kelp beds were more extensive during the earlier part of the Holocene and exploited by humans settling on the coast. Early Holocene coastal populations tended to aggregate around estuaries and areas of dense intertidal and littoral sustenance resources, but a greater focus on lagoon resources can be seen in later archaeological deposits. As sea level rose, a transition in species of exploited shellfish and vertebrates is seen, from rocky reef species to sandy beach species that reflects the changes in shoreline during the Middle Holocene. Western North America experienced a period of increased warmth and aridity during the Middle Holocene that likely impacted migrations and settlement patterns from the continental interior to the coast (Kennett et al. 2007). Increasingly, human populations in California began to process plant foods with the manos (pestles) and metates (mortars) in an observable shift in technology and subsistence practices that effectively replaced the San Dieguito Complex with a lengthy tradition of cultural behaviors alternately termed the La Jolla Complex (Warren et al. 1961; Byrd and Raab 2007), Encinitas Tradition (Warren 1968), and Milling Stone Period (Wallace 1955). The term "La Jolla Complex" is used here.

The La Jolla Complex is most identified with the manos and metates found along the San Diego County coast beginning about 8,500 B.P. (Sutton and Gardner 2010), but La Jolla tool kits included a wide array of lithic and bone tools. Most La Jolla Complex sites are located around Middle Holocene coastal lagoons which continued filling with sea water due to the sustained retreat of ice caps and global influx of liquid water following the last glacial maximum (LGM, ~20,000 B.P.). Shellfish from these lagoons were an important part of the diet, and most La Jolla sites are classified as shell middens. Both rocky shores shellfish, such as Mytilus sp. (mussels), and bay/estuary shellfish, such as Argopecten sp. (scallops), Chione sp. (cockles), and Ostrea lurida (oyster) are found in La Jolla sites. Rocky shores species are much reduced in quantity and almost disappear from the middens in the Late Holocene. This has been attributed to increased sediment deposition around the mouths of the lagoons along the northern and central San Diego coast, which covered the rocky habitats. Fewer sites were occupied in these areas during the Late Holocene. However, the larger bays to the south (Mission Bay and San Diego Bay) never silted in, and there are numerous La Jolla Complex sites in this area (Masters and Gallegos 1997).

The Pauma Complex is a term to describe an inland cultural pattern beginning around 7,500 B.P. in San Diego County and occurring up to approximately 1,000 B.P. (Sutton and Gardner 2010; True 1958, 1970). Pauma archaeological deposits have numerous manos and metates similar to coastal sites of the same period but lack the marine subsistence remains seen in La Jolla sites. Other Pauma Complex artifacts include core and cobble tools, scraper planes, unifacial scrapers, and infrequent cogged stones and discoidals. In most Pauma Pattern sites, the mano-metate tool kit predominates which suggests the collection and processing of seeds and other plant materials. Pauma sites are located on older high elevation alluvial terraces in valleys and canyons. Some Pauma sites may be buried in shallow alluvium. Shared similarities between the inland Pauma Complex and the coastal La Jolla Complex may reflect extended cultural ties or different seasonal manifestations of the same people, with the La Jolla Complex emphasizing marine resources (shellfish and fish) and the Pauma Complex emphasizing hard seeds. There are more planing and scraping tools in the La Jolla Complex and more grinding tools (i.e., manos and metates) in the Pauma Complex which undoubtedly correspond to differential resource procurement and processing throughout this time period (Waugh 1986:55-56).

The San Diego coastline began to resemble its current appearance after about 3,500 B.P., with estuaries silting in and a consequential decline in lagoon resources due to increased sedimentation along the San Diego coastline (Gallegos 2002). A warming climate combined with the loss of estuarine resources during the Middle Holocene resulted in an observable transition in settlement patterns during the Late Holocene as many people moved away from the coasts to more fully exploit inland habitats, though San Diego Bay remained due to freshwater runoff and tidal flushing. Additionally, coastal sedimentation and infilling events coincided with the development of the sandy beaches seen today that eliminated majority rocky coastal environments and gave way to a shift in the kinds of subsistence resources available at these locations (Byrd and Reddy 2002). This increased reliance on sandy shore species and the dominance of small terrestrial taxa in archaeological contexts, such as lagomorphs and waterfowl, is reflective of the unique coastal environment of much of San Diego in the Late Holocene.

Late Period (Kumeyaay) - 1,300 B.P. to Contact

The Late Period (Kumeyaay) in San Diego archaeology is determined to have begun with substantial cultural and technological changes occurring around 1,300 B.P. The Late Holocene exemplified major cultural shifts with the entrance of Shoshonean language speakers, now known as the Cahuilla, Cupeño, and Luiseño, into the northern part of San Diego County sometime between and 3,500 B.P. and 1,300 B.P. This coincided with the establishment of definitive Ipai and Tipai (Kumeyaay peoples, Yuman language speakers) societal structures throughout the central and southern parts of the county. An abrupt decrease in coastal deposits appears to have occurred after 3,300 B.P. (Gallegos 2002), though increases in coastal occupation beginning around 1,600 to 1,200 B.P. appear to mirror sustained population increases throughout San Diego County during the Late Holocene to the present day (Byrd and Reddy 2002). Late Period settlement patterns are characterized by the establishment of permanent, sometimes seasonal, villages and ephemeral satellite sites dedicated to specific tasks, such as tool production, food processing, or resource acquisition (Byrd and Raab 2007). A focus on reliable water sources and intensified subsistence practices is evident in the location and nature of regional Late Period archaeological sites.

The Kumeyaay Period has been associated with population increases, particularly in coastal areas, and changes in settlement patterns (Scharlotta 2015). The Late Holocene was a time of technological change. Choices regarding technology and subsistence practices influenced the nature of human-environmental interactions with an expansion of diet breadth, the establishment of permanent villages, and changes in hunting and gathering processes that also affected social structure during the Kumeyaay period (Bettinger 2013; Gamble and Mattingly 2012). Transition to more sedentary settlement patterns can be witnessed in aspects of technological variation such as the greater use of bedrock mortars in addition to portable milling stones (Byrd and Raab 2007). The Late Period is primarily characterized by use of the bow and arrow, which was introduced to the western United States sometime between 2,300 and 1,300 B.P. (Bettinger 2013). Bettinger argues that the adoption of bow hunting effected an expansion in the utilization of once peripheral subsistence resources (i.e. intensification of plant resource harvesting and processing) due to the increased efficacy of hunting among small groups and a shift to more localized resource harvesting among smaller family bands. Decreases in time spent hunting are thought to encourage greater time spent collecting foodstuffs once perceived as too costly.

In San Diego, principal foods for inland populations included acorns, grasses, other seeds, and lagomorphs, in addition to continued hunting of deer. However, people had returned to the coasts during the Kumeyaay Period and were exploiting a wide variety of marine resources in addition to the extensive trade networks along the southern California coast and that of Baja California (Byrd and Raab 2007). Gamble and Mattingly (2012) document over 200 fire-affected rock features at Torrey Pines State Natural Reserve, positing the use of these features in the processing of Torrey pine nuts (*Pinus torreyana*) by Kumeyaay peoples on the coast over the last two millennia. The introduction of the bow and arrow to Southern California was followed by other archaeologically observable shifts prior to European contact, such as distinguishable changes in projectile point morphology, a switch from Coso (Sierra Nevada source) to Obsidian Butte (Salton Sea) as a source for volcanic glass, and even a transition from burial to cremation for the dead (Gallegos 2002). Ceramics appear in the archaeological record of after 1,300 B.P., with the distribution of reddish-brown sherds across San Diego County from the Peninsular Ranges to the Coast that differs from a lighter-colored buff pottery found in the deserts to the east (Quinn et al. 2013). Common ceramic forms include round-bottomed jars with restricted necks, bowls, scoops, plates, and other vessels used for cooking and storage. Ceramic pipes were also made (Gallegos 2002). Recovered ceramic specimens exhibit chemical signatures derived from similar geological contexts in the Laguna and Cuyamaca Mountains, suggesting the transfer of materials from mountain to coast within the extensive trade networks that undoubtedly existed at this time (Quinn et al. 2013).

Ethnohistory

The Kumeyaay (also known as Ipai and Tipai) are the Yuman-speaking native people of central and southern San Diego County and the northern Baja Peninsula in Mexico. Spanish missionaries and settlers used the collective term Diegueño for these people, which referred to people living near the presidio and mission of San Diego de Alcalá. Today, these people refer to themselves as Kumeyaay or as Ipai and Tipai, which are northern and southern subgroups of Kumeyaay language speakers, respectively (Luomala 1978).

The ancestral lands of the Kumeyaay extend north from Todos Santos Bay near Ensenada, Mexico to Agua Hedionda Lagoon in north San Diego County, and east to the west side of the Imperial Valley.

The primary source of Kumeyaay subsistence was vegetal food. Seasonal travel followed the ripening of plants from the lowlands to higher elevations of the mountain slopes. Acorns, grass and sage seeds, cactus fruits, wild plums, pinyon nuts, and agave stalks were the principal plant foods. Women sometimes transplanted wild onion and tobacco plants to convenient locations and sowed wild tobacco seeds. Deer, rabbits, small rodents, and birds provided meat. Village locations were selected for seasonal use and were occupied by exogamous, patrilineal clans or bands. Three or four clans might winter together, then disperse into smaller bands during the spring and summer (Luomala 1978).

The Kumeyaay were loosely organized into exogamous patrilineal groups termed sibs, clans, gens, and tribelets by ethnographers. The Kumeyaay term was *cimul*. The *cimul* used certain areas for hunting and gathering, but apparently did not control a bounded and defended territory, as did the Luiseño and Cahuilla. In addition, members of several different *cimul* usually lived in the same residential base, unlike the Luiseño where a single party or clan controlled a village and its territory. Kumeyaay lived in residential bases during the winter and subsisted on stored resources. No permanent houses were built. Brush shelters were temporary and were not re-used the next year. Ceremonies, including rites of passage and ceremonies to insure an abundance of food, were held in the winter residential bases. The *cimul* leader directed the ceremonies and settled disputes (Christenson 1990:58, 62). One of the most important ceremonies was the mourning ceremony. Upon death, the Kumeyaay cremated the body of the deceased. Ashes were placed in a ceramic urn and buried or hidden in a cluster of rocks. The family customarily held a mourning ceremony one year after the death of a family member. During this ceremony, the clothes of the deceased individual were burned to ensure that the spirit would not return for his or her possessions (Gifford 1931; Luomala 1978).

The Kumeyaay were geographically and linguistically divided into western and eastern Kumeyaay. The western and eastern Kumeyaay spoke two different dialects (Christenson 1990:64). The western Kumeyaay lived along the coast and in the valleys along the drainages west of the mountains. The eastern Kumeyaay lived in the canyons and desert east of the mountains. The western Kumeyaay spent the winter in residential bases in the lowland valleys and then broke into smaller *cimul* groups that moved gradually eastward toward the mountains, following ripening plants and occupying temporary residential bases along the way. Thus, each group occupied several different residential bases during the course of a year (Christenson 1990:292-293). The eastern Kumeyaay spent the winter in villages on the desert margin where water was available from springs at canyon mouths. They moved up the canyons toward the mountains during spring and summer. The eastern and western Kumeyaay met in the mountains in the fall where they gathered black oak acorns, traded, and held ceremonies (Christenson 1990:63). The large residential bases in the mountains appear archaeologically to be village sites (Gross and Sampson 1990).

The Kumeyaay population was estimated to be between 10,000 and 20,000 at the time of European contact, based on Spanish accounts and ethnographies (Gallegos 2002). Beginning in 1775, the semi-nomadic life of the Kumeyaay began to change as a result of contact with European-Americans,

particularly from the influence of the Spanish missions. Through successive Spanish, Mexican, and Anglo-American control, the Kumeyaay were forced to adopt a sedentary lifestyle and accept Christianity (Luomala 1978).

History

The first European to visit California was Spanish maritime explorer Juan Rodriguez Cabrillo in 1542. Cabrillo was sent north by the Viceroy of New Spain (Mexico) to look for the Northwest Passage. Cabrillo visited San Diego Bay, Catalina Island, San Pedro Bay, and the northern Channel Islands. The English adventurer Francis Drake visited the Miwok Native American group at Drake's Bay or Bodega Bay in 1579. Sebastian Vizcaíno explored the coast as far north as Monterey in 1602. He reported that Monterey was an excellent location for a port (Castillo 1978). Vizcaíno also named San Diego Bay to commemorate Saint Didacus. San Diego began to appear on European maps of the New World by 1624 (Gudde 1998:332).

In 1769, the Gaspar de Portolá Spanish land expedition arrived in the San Diego area from New Spain (Mexico), and Mission San Diego de Alcalá was founded by Father Junipero Serra as the first of 21 Spanish missions in *Alta California*. A *presidio* (military facility for Spanish soldiers) was built near the mission. The purpose of the missions and presidios was to establish Spanish economic, military, political, and religious control over the Alta California territory. The missions sustained themselves through cattle ranching and traded hides and tallow for supplies brought by ship. Mission San Diego was established to convert the Native Americans that lived in the area, known as the Kumeyaay or Diegueño. The presidio and mission were located on a hill on the south side of the San Diego River about three miles inland from the coast. After being destroyed by attacking Kumeyaay in 1775 during an attempt to drive out the Spanish (Robinson 1948:63; Castillo 1978:103), Mission San Diego was rebuilt in its present location on the north side of the river about 5.5 miles upstream from the presidio. However, the presidio remained in its original location and a small town or *pueblo* developed around it (Caughey 1933:123).

Mexico became independent from Spain in 1821, and what is now California became the Mexican province of Alta California. The Mexican government closed the missions in the 1830s and former mission lands were granted to retired soldiers and other Mexican citizens for use as cattle ranches. Much of the land along the coast and in the interior valleys became part of Mexican land grants or "ranchos" (Robinson 1948). During the Mexican period there were small towns at San Diego (near the presidio), San Juan Capistrano (around the mission), and Los Angeles. The rancho owners lived in one of the towns or in an adobe house on the rancho. The Mexican Period includes the years 1821 to 1848.

The American period began when the Treaty of Guadalupe Hidalgo was signed between Mexico and the United States in 1848. Alta California became part of the United States as the territory of California, officially becoming the State of California in 1850. Most Mexican land grants were confirmed to the grantees by U.S. courts, but usually with more restricted boundaries which were surveyed by the U.S. Surveyor General's office. Land that was not part of a land grant was owned by the U.S. government until it was acquired by individuals through purchase or homesteading. Floods and drought in the 1860s greatly reduced the cattle herds on the ranchos, making it difficult to pay the new American taxes on the
thousands of acres they owned. At the same time, the Homestead Act of 1862 brought American settlers to southern California in search of land to claim. Many Mexican-American cattle ranchers borrowed money at usurious rates from newly arrived Anglo-Americans. The resulting foreclosures and land sales transferred most of the land grants into the hands of Anglo-Americans (Cleland 1941:137-138).

San Diego County was created in 1850 as one of the first counties within the new state of California (Coy 1973; Marschner 2000). At that time, the area designated as San Diego County included nearly all of present-day San Diego, Imperial, Riverside, and San Bernardino Counties, as well as a small portion of present-day Inyo County (Coy 1973:221; Marschner 2000:39). The City of San Diego continued as a small settlement around the presidio until a new town was platted south of the old town by Alonzo Horton, a San Francisco furniture dealer. He sold lots beginning in 1867 and built a 700-foot wharf in 1869. By 1870 San Diego had 800 buildings and a population of 3,000 (Dumke 1944:134). The completion of the California Southern Railroad from National City and San Diego to San Bernardino via Oceanside in 1883 and the completion of the Santa Fe line from Los Angeles to Oceanside (connecting to San Diego via the California Southern track) in 1888 resulted in a real estate boom and the economic development of the San Diego area (Dumke 1944:136-137). The population continued to increase throughout the earlier part of the twentieth century, with continued growth in the City of San Diego as well as the gradual growth and eventual incorporation of various rural communities throughout San Diego County.

The Project Area lies in an unsectioned portion of the Rancho San Dieguito Mexican land grant, a large parcel that was awarded to Juan Maria Osuna in 1845. The Osuna family retained ownership of the land through transition to American rule, eventually selling Rancho San Dieguito to the Santa Fe Land Company in 1906. The land grant was renamed Rancho Santa Fe. This name remains in use for the Rancho Santa Fe residential community today (Rancho Santa Fe Association 2018). Population increased in the San Dieguito area following completion of the Lake Hodges Dam in 1918. The newly created reservoir facilitated the establishment of water infrastructure for communities in the San Dieguito River Valley and contributed to growth in the coastal areas near San Dieguito Lagoon. Communities such as Del Mar and Solana Beach experienced unprecedented growth and eventual incorporation as cities of San Diego County in 1959 and 1986, respectively (City of Solana Beach 2018). In 2003, completion of the Olivenhain Dam created further regional water security as an emergency storage facility connected to Lake Hodges. The proposed Project is located on incorporated lands of the City of San Diego, immediately adjacent to unincorporated Rancho Santa Fe and the municipal boundary with the County of San Diego .

III. AREA OF POTENTIAL EFFECTS (APE)

The Area of Potential Effects (APE) for this project is identical to the Project Area. The APE includes the location of actual construction work, equipment staging areas, and all ingress and egress routes for construction equipment and personnel. Anticipated direct, indirect, and cumulative impacts of the Project on cultural resources in the APE are expected to be negligible. No cultural resources were previously recorded within the APE, and no pre-contact archaeological resources have been recorded within the APE as a result of the field surveys. One historic-era resource that was identified and evaluated as part of the

cultural resources investigation has been determined as not eligible for listing on the CRHR and the NRHP. Additionally, this resource is not expected to be impacted by the proposed Project.

IV. STUDY METHODS

Records Search Methods

A cultural resources records search request was submitted on July 31, 2018, to the South Coastal Information Center (SCIC) located at San Diego State University. The records search was conducted by SCIC staff. The SCIC operates as a branch of the California Historical Resources Information System (CHRIS) and is the official repository of cultural resources reports and site records for San Diego and Imperial counties in southern California. The purpose of the records search was to determine the extent and location of previous surveys, previously identified pre-contact or historic-era archaeological site locations, architectural resources, historic properties, cultural landscapes, or ethnic resources within a onemile (1,600-meter) radius of the Project Area. Materials reviewed included survey and evaluation reports, archaeological site records, historic maps, and listings of resources on the NRHP, CRHR, California Points of Historical Interest, California Historical Landmarks, and National Historic Landmarks. Historic-period aerial photographs were also reviewed as a part of this study (NETROnline 2018).

A search of the Sacred Lands File was requested from the California NAHC on July 31, 2018. This search was requested to determine whether there are sensitive or sacred Native American resources in the vicinity of the Project Area that could be affected by the proposed Project. The NAHC was also asked to provide a list of Native American groups that have historic or traditional ties to the Project area.

An additional off-site area was added to the Project Area after the records searches were conducted. The off-site portion of the project area falls within the original one-mile (1,600-meter) search radius subjected to review.

Field Survey Methods

Field surveys of the Project Area were conducted on September 10 and September 24, 2018, by ECORP archaeologist John O'Connor, M.A., RPA. All accessible areas of the Project Area were surveyed on foot using a combination of straight transects or meandering paths based on topography. Ground visibility varied from 100% on graded dirt roads and fields to nearly 0% visibility in areas of dense vegetation along drainages and the San Dieguito River. Surface sediments were primarily silt and gravel on dirt roads and a mix of loam and humus in vegetated riparian areas.

V. RESULTS OF STUDY

Records Search Results

The results of the CHRIS records search through SCIC were received by ECORP on September 6, 2018. These results indicate that between the years of 1974 and 2017 there have been 100 previous cultural

13

resources studies within one mile of the Project Area. Previous surveys cover most of the area surrounding the Project within a one-mile radius, and include projects ranging from isolated archaeological investigations to broad assessments of cultural resources in the San Dieguito River Valley. The records search indicated that approximately 100 percent of the Project Area had been previously surveyed for cultural resources at some time in the past. Twenty investigations conducted between 1981 and 2013 overlapped the current Project boundaries. The report numbers for these investigations are SD-00074, SD-00672, SD-01891, SD-02725, SD-02986, SD-03643, SD-03676, SD-04177, SD-04235, SD-04236, SD-06926, SD-08837, SD-08989, SD-10131, SD-10415, SD-11623, SD-12422, SD-12458, SD-14397, and SD-16654. A list of all 100 previous investigations is included as part of the confidential records search results in Appendix C.

Forty-two previously recorded cultural resources are located within one mile of the Project Area. Documented resources include 38 pre-contact sites, two historic-era sites, and two multi-component sites. Previously recorded pre-contact sites consist of habitation sites, lithic scatters, and shell middens, all evidencing the long history of human habitation in the San Dieguito River Valley. The two historic-era sites include a historic trash scatter and the community of Rancho Santa Fe (Rancho San Dieguito) itself which is recognized as a cultural landscape. Multi-component sites include a pre-contact habitation site and historic trash scatter, and a lithic and ceramic scatter mixed with historic debris. Additionally, six historic addresses were identified within the one-mile records search radius. These properties consist of private residences in the Rancho Santa Fe area. No cultural resources were previously recorded within the Project Area.

A search of the Sacred Lands File was conducted by NAHC in Sacramento, California. The results of this search were received by ECORP on August 6, 2018. The NAHC Sacred Lands File search failed to indicate the presence of Native American sacred lands in the vicinity of the Project Area. The NAHC provided ECORP with a list of 27 Native American tribal entities which may be culturally affiliated with the area. A copy of the results of the NAHC Sacred Lands File Search may be found in Appendix B.

Separately from this cultural resources investigation, OMWD initiated the AB 52 process with project notification letters to two Native American entities on August 29, 2018. One Native American group, the San Luis Rey Band of Mission Indians, had previously requested consultation with OMWD regarding proposed projects in its traditional cultural area. AB 52 proceedings are not covered in this report, but discussion of the AB 52 process and consultation regarding the proposed project will be documented in the Project CEQA document.

Field Survey Results

Field surveys were conducted by ECORP archaeologist John O'Connor, M.A., RPA, on September 10 and September 24, 2018 (Figure 3). Ground visibility varied between 100% visibility on graded dirt roads and fields to near 0% ground visibility in heavily vegetated areas. One historic-era cultural resource was identified as a result of the field survey. SC-003 is a historic-era electric transmission line of utility poles supporting functional electric lines (Figure 4). This resource is located within the central portion of the Project Area, and therefore, was evaluated for significance and eligibility for the CRHR and the NRHP. Evaluation of SC-003 is presented below. A second historic-era transmission line is located along the northern edge of the off-site area in the western portion of the Project Area. This resource was not recorded and evaluated due to its location outside of the APE, but its presence is herein noted in relation to a modern concrete guy pole that is within the surveyed area. No previously recorded cultural resources were located in the Project Area. No new pre-contact archaeological resources were documented during this survey.



Figure 3. Representative overview of project environment in central portion of project area, with mix of riparian vegetation and graded dirt road. View southwest, September 10, 2018, Photo #0082



Figure 4. Representative image of cultural resource SC-3, a series of utility poles extending west to east across the Project Area. View south, September 10, 2018, Photo #0087

Evaluations

One historic-era resource was identified during the field survey portion of this cultural resources investigation. SC-003 is a series of utility poles constituting an electric transmission line that extends from west to east across the Project Area, from Via De La Valle in the west to the southeastern corner of the Morgan Run Golf Course beyond the eastern end of the Project Area. This resource was not previously documented. Therefore, the resource was evaluated for significance using CRHR eligibility criteria under CEQA and NRHP criteria under Section 106 of the Nation Historic Preservation Act (NHPA) discussed below.

Federal Evaluation Criteria

Under federal regulations implementing Section 106 of the NHPA (36 CFR 800), cultural resources identified in the finalized Project APE must be evaluated using NRHP and eligibility criteria. The eligibility criteria for the NRHP are as follows (36 CFR 60.4):

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess aspects of integrity of location, design, setting, materials, workmanship, feeling, association, and

- 1. is associated with events that have made a significant contribution to the broad patterns of our history;
- 2. is associated with the lives of a person or persons significance in our past;
- 3. embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic value, or represents a significant and distinguishable entity whose components may lack individual distinction; or
- 4. has yielded or may be likely to yield information important in prehistory or history.

In addition, the resource must be at least 50 years old, except in exceptional circumstances (36 CFR 60.4).

Effects to NRHP-eligible resources (historic properties) are adverse if the Project may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

State Evaluation Criteria

Under state law (CEQA) cultural resources are evaluated using CRHR eligibility criteria in order to determine whether any of the sites are historical resources, as defined by CEQA. CEQA requires that impacts to historical resources be identified and, if the impacts would be significant, that mitigation measures to reduce the impacts be applied.

An historical resource is a resource that

- 1. is listed in or has been determined eligible for listing in the CRHR by the State Historical Resources Commission;
- 2. is included in a local register of historical resources, as defined in PRC 5020.1(k);
- 3. has been identified as significant in a historical resources survey, as defined in PRC 5024.1(g); or
- 4. is determined to be historically significant by the CEQA lead agency [CCR Title 14, § 15064.5(a)].

In making this determination, the CEQA lead agency usually applies the CRHR eligibility criteria.

For cultural resources within the current Study Area, only the fourth definition of a historical resource is applicable because there are no resources previously determined eligible or listed on the CRHR, there are no resources included in a local register of historical resources, and no resources identified as significant in a qualified historical resources survey.

The eligibility criteria for the CRHR are as follows [CCR Title 14, § 4852(b)]:

- 1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
- 2. It is associated with the lives of persons important to local, California, or national history.
- 3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
- 4. It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition, the resource must retain integrity. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association [CCR Title 14, § 4852(c)].

Impacts to a historical resource (as defined by CEQA) are significant if the resource is demolished or destroyed or if the characteristics that made the resource eligible are materially impaired [CCR Title 14, Section 15064.5(a)].

Evaluation of SC-003: Electric Transmission Line

The following broad historical overview of electric transmission in California is included to provide a sense of the historical developments, techniques, and significant events associated with electric transmission systems. Specific historical accounts and important information about electric transmission systems are often not documented in the historical record because these types of systems primarily serve a utilitarian function and their historical developments through time are linked to the service they provide.

The number of electric utility companies in California significantly increased in the 1880s to meet the demand of the growing population and widespread use of Thomas Edison's new version of the incandescent light bulb (Adams 2010). Electric utility companies prior to the 1880s typically used low-voltage direct currents (DC), also invented by Edison, which transmitted electricity only about three miles. Since the electricity could not travel a long distance, only urban, densely populated areas could economically be served by these electric companies. Despite the limitations of DC systems, the California Electric Light Company of San Francisco was the first to begin installing long-distance electric transmission lines in California in 1879 (Adams 2010).

The alternating current (AC) system was developed later by Nikola Tesla and William Stanley (of the Westinghouse Company) and was more powerful than the DC system with the capability of transmitting higher voltages of electricity at significantly farther distance (Adams 2010). California

first saw use of the AC system when electrical engineer Almerian Decker and his partners opened the San Antonio Light and Power Company and in 1892 transmitted electricity over 14 miles in Pomona (JRP Historical 2007). In 1895, the Folsom power plant, designed by James Lighthipe of General Electric, produced and transmitted power to Sacramento approximately 22 miles away (JRP Historical 2007). By the end of the 1890s, several cities in California began to use AC systems in their power plants because of the capability to transmit electricity longer distances. Another new invention in electrical transmission and distribution was the "converter", also called the transformer. Transformers are designed to reduce high electrical voltages passing along transmission lines to lower voltages to be safely distributed to residences or businesses (Adams 2010).

Electric transmission lines throughout California continued to grow in length significantly into the twentieth century. In 1899, the Edison Electric Company, predecessor of Southern California Edison, used glazed porcelain insulators to hold the conductor wire, which allowed construction of an 83-mile-long electric transmission line from the Santa Ana River to Los Angeles, the longest line at the time (Adams 2010). The length of electric transmission lines continued to increase over the next decade. In 1901, the Bay Counties Power Company constructed a 142-mile-long electric transmission line from the Sierra Nevada to Oakland. John Debo Galloway was the engineer who designed the 142-mile-long transmission line, which is given credit for being the longest in the world at the time. Galloway was a major pioneer in the design of electric transmission lines in California (Adams 2010).

The utility poles and electric transmission line identified as SC-003 in this Project survey are not associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States. Therefore, they are evaluated as not eligible under NRHP Criterion A or CRHR Criterion 1. The lines were built in the twentieth century as part of an expanding system to meet the growing needs of the developing community. They are not associated with any particular individuals important to local, California or national history. Therefore SC-003 is evaluated as not eligible under NRHP Criterion B or CRHR Criterion 2. As part of an overall system of utilitarian structures built to provide energy, the electric transmission line does not embody the distinctive characteristics of a type, period, region, or method of construction. The line does not represent the work of a master or possess high artistic values. Therefore SC-003 is evaluated as not eligible under NRHP Criterion 3. The transmission lines and its history and contribution to the San Diego region have been well-documented and the potential to yield further information important to local, regional or national history is low. The utility poles and transmission line are evaluated as not eligible for the NRHP under Criterion D or the CRHR under Criterion 4.

The transmission lines in the Project Area retain integrity of location, design, materials, and workmanship, as it is in the same location as when they were constructed and consist of the same materials. Though the land around the resource has undergone periodic development, the transmission line also retains integrity

of association, feeling, and setting due to minimal changes in the line footprint as when it was constructed.

Regardless of integrity, SC-003 is evaluated as not eligible for the NRHP or CRHR as an individual property and is not a contributor to any district.

VI. RECOMMENDATIONS

One historic-era cultural resource was identified within the Project Area as a component of this investigation and was evaluated as not eligible for the CRHR and NRHP. No pre-contact archaeological resources have been documented within the Project Area. The archaeological sensitivity of the Project Area is low, and no testing program is recommended at this time. Although the archaeological sensitivity is low, there always is a potential for ground-disturbing activities to expose previously unrecorded cultural resources. CEQA requires the lead agency to address any unanticipated cultural resources discoveries during Project construction. Therefore, ECORP recommends the following mitigation measures be adopted and implemented by the Lead Agency to reduce potential adverse impacts to Less than Significant subsurface cultural resources present in the Project Area.

If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify OMWD. OMWD shall consult on a finding of eligibility and implement appropriate treatment measures if the find is determined to be eligible for inclusion in the NRHP or CRHR. Work may not resume within the no-work radius until the OMWD, through consultation as appropriate, determines that the site either: 1) is not eligible for the NRHP or CRHR; or 2) that the treatment measures have been completed to its satisfaction.
- If the find includes human remains, or remains that are potentially human, the professional archaeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the San Diego County Coroner (as per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California PRC, and AB 2641 will be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene,

the Coroner will notify the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the Project (§ 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§ 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate information center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

The lead agency is responsible for ensuring compliance with these mitigation measures because damage to significant cultural resources is in violation of CEQA. Section 15097 of Title 14, Chapter 3, Article 7 of CEQA, Mitigation Monitoring or Reporting, "the public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the Project and the measures it has imposed to mitigate or avoid significant environmental effects. A public agency may delegate reporting or monitoring responsibilities to another public agency or to a private entity which accepts the delegation; however, until mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program."

VII. CERTIFICATION

Preparer: John O'Connor, MA, RPA	Title: Cultural Resources Specialist
you	

Signature:

Date: September 25, 2018

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APPENDIX A

Resumes



John O'Connor, RPA

Cultural Resources Specialist

Mr. O'Connor is the Cultural Resources Specialist at the San Diego office of ECORP Consulting, Inc. Mr. O'Connor is a Registered Professional Archaeologist (RPA) and a Ph.D. candidate in Anthropology (archaeology and human ecology) at the University of Oregon. He has nine years of archaeological experience in North America and the Pacific Islands and has worked on professional and academic projects throughout California, Oregon, Hawaii, French Polynesia, and the Kingdom of Tonga. Mr. O'Connor has extensive archaeological field experience, including exploratory and inventory survey, feature mapping, subsurface testing, data recovery, artifact analysis, lithic analysis, remote sensing data capture, and geospatial data processing. He is versed in the evaluation of impacts to cultural resources for California Environmental Quality Act (CEQA) and National Historic Preservation Act (NHPA) Section 106 projects, the review of archaeological and ethnographic reports for agreement with Archaeological Resources Protection Act (ARPA) and American Indian Religious Freedom Act (AIRFA) protocol, and the recovery and handling of cultural materials in accordance with Native American Graves Protection and Repatriation Act (NAGPRA) compliance recommendations. Mr. O'Connor has applied knowledge of museum collections management and inter-institutional coordination with American Indian and Native Hawaiian organizations for the ethical treatment of ethnographic and archaeological resources.

Education

Ph.D. candidate, Anthropology, University of Oregon (in progress)M.A., Anthropology, University of Hawai'i at MānoaB.A. (Highest Honors), Anthropology, University of Hawai'i at Mānoa

Registrations, Certifications, Permits and Affiliations

- Register of Professional Archaeologists (RPA# 36341398)
- Permitted Archaeologist, Hawai'i Department of Land and Natural Resources
- Qualified Archaeologist, Oregon State Historic Preservation Office
- California Historical Resources Information System (CHRIS) Authorized User
- Hazardous Waste Operations and Emergency Response (HAZWOPER) 8-hour Refresher Training
- RAPIDGate Eid Passport credential, U.S. Department of Defense
- Sigma Xi Scientific Research Society
- Phi Beta Kappa Society
- American Association for the Advancement of Science
- Association of Environmental Professionals
- Society for American Archaeology
- Society for California Archaeology

- Society for Hawaiian Archaeology
- San Diego County Archaeological Society
- American Red Cross Adult and Pediatric First Aid/CPR/AED
- County of San Diego Bloodborne Pathogens Training

Professional Experience

Centennial Reservoir Project, Nevada County – Nevada Irrigation District (2018). Editor for cultural resources inventory and evaluation addendum report documenting testing and evaluation of eligibility for archaeological resources on 68-acre property in an unincorporated portion of western Nevada County, California.

Rancho Del Prado Specific Plan, San Bernardino County – KWC Engineers (2018). Archaeologist for cultural resources inventory survey of 430-acre property in an unincorporated area of southwestern San Bernardino County. Duties included review of site records, site relocation and update documentation, and evaluation of eligibility for the National Register of Historic Places and the California Register of Historical Resources, and technical writing as report co-author.

Metropolitan Airpark Project, San Diego County – Federal Aviation Administration and City of San Diego (2018). Archaeologist for review and edits of environmental documents for Metropolitan Airpark Project at Brown Field Municipal Airport (SDM) in Otay Mesa, San Diego. Duties include analysis of cultural resource management procedures, editing of Environmental Assessment (EA) documents for National Historic Preservation Act Section 106 and National Environmental Policy Act compliance, and recommendations for treatment of cultural resources within the area of potential effects for the airport redevelopment project.

Common Diversion Facility Project, Madera County – TV Trees, LLC (2018). Archaeologist for review and edits of project California Environmental Quality Act (CEQA) document. Duties include analysis of previous reports and cultural surveys, review and editing of tribal cultural resources section, and authorship of the cultural resources section for the CEQA document.

Richland Planned Communities, Inc., Riverside County TT37533 (formerly TT29262) Project, Riverside County - County of Riverside (2018). Archaeologist for review and analysis of cultural resource survey activities. Duties include coordination with field archaeologists and senior staff, communication with California Native American tribal entities, lead agency coordination, and technical writing as report coauthor.

Buena Sanitation District Master Plan Update, San Diego County - City of Vista, sub to Harris & Associates (2018). Field Director for archaeological monitoring for multiple task orders related to city-wide sewer update project. Duties include direction of archaeologists, lead agency coordination, archaeological monitoring of excavation and pipe replacement activities, and technical writing as report co-author.

Otay Ranch Pipeline Project, San Diego County - Cities of Chula Vista and San Diego, sub to Harris & Associates (2018). Field Director for archaeological inventory survey in support of the California

Environmental Quality Act document and permitting and compliance under Section 106 of the National Historic Preservation Act and Section 404 of the Clean Water Act. Duties included direction of field crew, identification and recording of pre-contact archaeological deposits, and technical writing as report co-author.

Carlsbad Sensitivity Model Project, San Diego County - City of Carlsbad (2018). Archaeologist and Data Specialist for creation of spatial sensitivity model for cultural resource planning in Carlsbad, California. Duties include California Historical Resources Information System records requests, document and site record review, evaluation of spatial data, map creation, coordination with city officials, and technical writing as report co-author.

Feather River West Levee Project, Sutter County - Sutter Butte Flood Control Agency (2018).

Archaeologist for review and analysis of cultural monitoring activities for multiple project task orders and special projects. Duties included review of site records and monitoring reports, coordination with on-site archaeological monitors, results analysis, report editing, tribal consultation, graphic design, preparation of educational outreach materials, and technical writing as report co-author.

Groundwater Desalination Pilot Test Project, San Diego County – Olivenhain Municipal Water District, sub to Woodard & Curran (2018). Assistant Project Manager in charge of cultural resources assessment in support of California Environmental Quality Act compliance for test well discharge pilot project area in Encinitas, California. Duties include project management of all cultural resource tasks, coordination with client and biological assessment group, records searches through California Historical Resources Information Center and Native American Heritage Commission, field inventory survey, and technical writing as report author.

Surf Cup Recycled Water Project, San Diego County – Olivenhain Municipal Water District, sub to Woodard & Curran (2018). Assistant Project Manager in charge of cultural resources assessment in support of California Environmental Quality Act compliance for recycled water service project area in Encinitas, California. Duties include project management of all cultural resource tasks, coordination with client and biological assessment group, records searches through California Historical Resources Information Center and Native American Heritage Commission, field inventory survey, and technical writing as report author.

Prima Deshecha Landfill Phase D, Orange County – OC Waste & Recycling, sub to Tetra Tech BAS (2018). Field Director for archaeological monitoring at Prima Deshecha Landfill in San Juan Capistrano. Duties include direction of archaeologists, lead agency coordination, archaeological monitoring of grading and earth moving activities, and evaluation of resource eligibility for the California Register of Historical Resources.

Osuna Valley Trail Bridge Project, San Diego County – San Dieguito River Park Joint Powers Authority, sub to Baranek Consulting Group (2018). Assistant Proposal Manager in charge of scope and costing for cultural resources survey of trail bridge replacement in Encinitas, California. Analysis will include cultural resources assessment in support of the California Environmental Quality Act document and National Historic Preservation Act Section 106 compliance for permitting under Clean Water Act Section 404. Trail 82 Rancho Santa Fe Road Project, San Diego County – City of Encinitas, sub to KOA Corporation
(2018). Assistant Proposal Manager in charge of scope and costing for cultural resources survey of Trail
82 multi-use trail improvement project along Rancho Santa Fe Road in Encinitas, California.

Bickford Ranch Specific Plan, Placer County - MacKay & Somps Civil Engineers, Inc. (2018). Archaeologist and Data Analyst for Bickford Ranch cultural sites overview. Duties included archival research, document and site record review, map analysis, data consolidation, and assessment of preservation and mitigation measures for eligible historical resources in accordance with National Historic Preservation Act Section 106 and the California Environmental Quality Act.

High Desert Solar Project, San Bernardino County - Middle River Power (2018). Archaeologist for Phase II archaeological inventory survey of 700-acre property in West Mojave Desert. Duties included review of site records, site relocation and update documentation, identification and recording of pre-contact and post-contact archaeological deposits, evaluation of eligibility for the National Register of Historic Places and the California Register of Historical Resources, and technical writing as report co-author.

Ra'iātea Historical Ecology Project, Ra'iātea - Tumara'a Commune, Ra'iātea; Service de la Culture et du Patrimoine, Bureau Archéologie, Tahiti; University of Oregon (2016-2018). Principal Investigator, Project Director, and Course Instructor for collaborative academic and government project to assess chronology and settlement patterns at Tevaitoa and throughout Tumara'a Commune, contribute to local archaeological and historical knowledge, and make recommendations for the mitigation of negative impacts to cultural resources. Duties included archaeological inventory survey, feature identification, controlled subsurface testing, artifact inventory, and land-use planning at Ra'iātea, Society Islands, French Polynesia, with instruction of university students and local secondary school students during archaeological field schools.

Pōhakuloa Training Area Inventory Survey, Hawaiʻi - U.S. Army Corps of Engineers (2016). Archaeologist for 6,000-acre archaeological inventory survey. Duties included archaeological feature identification and mapping, controlled subsurface testing, and data recovery at Pōhakuloa Training Area, Hawaiʻi Island.

Joint Base Pearl Harbor-Hickam West Loch Inventory Survey, Oʻahu - Naval Facilities Engineering Command (NAVFAC) Hawaiʻi (2014). Archaeologist participating in archaeological inventory survey, feature identification, and mapping at West Loch of Pearl Harbor, Oʻahu.

Hau'ula Leach Field Construction Monitoring, O'ahu - State of Hawai'i Department of Land and Natural Resources (2014). Archaeologist for private development leach field construction monitoring. Duties included the identification and recording of archaeological features and burials at Hau'ula, O'ahu.

Kamehameha Schools Punalu'u Archaeological Inventory Survey, O'ahu - Kamehameha Schools Land Assets Division (2014). Archaeologist for archaeological inventory survey, feature identification and mapping, artifact documentation, shovel test pit excavation, and data recovery at Punalu'u Ahupua'a, O'ahu. Kualoa Ranch Archaeological Field Project and Kualoa Field School, O'ahu - Kualoa Ranch, University of Hawai'i, University of Oregon (2013-2014). Project Coordinator and Course Instructor for collaborative academic project focusing on archaeological inventory survey, testing, and data recovery within the Kualoa Ranch, O'ahu. Duties included archaeological feature documentation and the clarification of local cultural and ecological history, while using the project as a venue for interdisciplinary undergraduate and post-graduate education.

Nu'alolo Kai State Park Restoration Project, Kaua'i - Nā Pali Coast 'Ohana, State of Hawai'i Department of Land and Natural Resources (2013). Archaeological Resources Consultant and Monitor for project monitoring and documentation of cultural feature restoration at Nu'alolo Kai, Nā Pali, Kaua'i.

Marine Corps Base Hawai'i (MCBH) MV-22 Monitoring and Testing, O'ahu - Naval Facilities Engineering Command (NAVFAC) Pacific (2013). Archaeologist and Laboratory Technician conducting archaeological inventory survey, testing, and laboratory analyses of domestic and agricultural surface features located within the Marine Corps Base Hawai'i (MCBH). This is the largest intact complex of surface archaeology on the Mokapu Peninsula.

Hau'ula Church Burial Recovery, O'ahu - Hau'ula Church; State of Hawai'i Department of Land and Natural Resources (2013). Archaeologist for emergency controlled subsurface testing and data recovery following inadvertent disruption of traditional cultural layers by private landowner at Hau'ula, O'ahu.

Nu'alolo 'Āina Archaeological Inventory Survey, Kaua'i - Nā Pali Coast 'Ohana, State of Hawai'i Department of Land and Natural Resources (2012). Archaeologist conducting archaeological inventory survey and feature mapping of domestic, agricultural, and religious surface features at Nu'alolo Valley, Nā Pali, Kaua'i. Nu'alolo Valley holds an extensive complex of pre-contact and early contact Hawaiian surface architecture.

Professional Development Courses/Training

- 2018 Advanced Teaching Certificate, University of Oregon Teaching Engagement Program
- 2018 National Environmental Policy Act Update, Association of Environmental Professionals
- 2018 The Basics of Mitigation Banking in San Diego County, Association of Environmental Professionals
- 2018 Advanced AB 52 and CEQA for Planners workshop, ECORP Consulting, Inc.
- 2016 Graduate Online Teaching Practicum, Department of Anthropology, University of Oregon
- 2015 Graduate Teaching Fellowship Training and Practicum, Department of Anthropology, University of Oregon
- 2014 Laboratory techniques at Center for Archaeology, Materials, and Applied Spectroscopy (CAMAS) under supervision of John Dudgeon, Ph.D., Idaho State University
- 2013 Archaeological Field School at Kāpaeloa, O'ahu, under supervision of James Bayman, Ph.D., and Ty Kāwika Tengan, Ph.D., University of Hawai'i at Mānoa, and Windy McElroy, Ph.D., Keala Pono Archaeological Consulting, LLC

- 2013 Teaching Assistant Training Program, Department of Anthropology, University of Hawai'i at Mānoa
- 2012 National Science Foundation-Research Experiences for Undergraduates (NSF-REU) Grant No. 1005258, Geospatial Research and Mapping (GRAM) Field Program under supervision of Christopher Lee, Ph.D., Carl Lipo, Ph.D., and Suzanne Wechsler, Ph.D., California State University-Long Beach
- 2011 Archaeological Field School at Makauwahi Cave, Kaua'i, under supervision of Terry Hunt, Ph.D., University of Hawai'i at Mānoa, and David Burney, Ph.D., National Tropical Botanical Garden
- 2010 Coastal Archaeology at Rancho Peñasquitos, San Diego County, under supervision of Stephen J. Bouscaren, Ph.D., San Diego City College

Selected Professional Publications/Papers/Presentations

Peer-Reviewed Academic Journals

- 2018 Matthew F. Napolitano, Robert J. DiNapoli, Jessica H. Stone, Nicholas P. Jew, Maureece J. Levin, Damion Sailors, Brian G. Lane, John T. O'Connor, Scott M. Fitzpatrick. Reevaluating Human Colonization of the Caribbean using Chronometric Hygiene and Bayesian Modeling. IN REVIEW for Science Advances.
- 2016 John T. O'Connor, Frances J. White, Terry L. Hunt. Fishhook Variability and Cultural Transmission in East Polynesia. Archaeology in Oceania 52, 32-44.
- 2015 Alex E. Morrison, John T. O'Connor. Settlement Pattern Studies in Polynesia: Past Projects, Current Progress, and Future Prospects. In: Cochrane, E. E., Hunt, T. L. (Eds.), The Oxford Handbook of Prehistoric Oceania. Oxford University Press, Oxford, pp. 450-472.

Published Abstracts (Paper Presentations)

- 2018 John T. O'Connor, M. Hinanui Cauchois. Polynesian Settlement at Western Ra'iātea. In: 22nd Indo-Pacific Prehistory Association Conference, Hue. IN PREPARATION
- 2017 Scott M. Fitzpatrick, Matthew F. Napolitano, Jessica H. Stone, Robert J. DiNapoli, Brian G. Lane, John T. O'Connor, Damion Sailors, Nicholas P. Jew, Maureece Levin, Aaron Poteate. Using Chronometric Hygiene and Bayesian Modeling to Reexamine Pre-Columbian Colonization of the Caribbean. In: 27th Congress of the International Association for Caribbean Archaeology, St. Croix.
- 2017 John T. O'Connor, Scott M. Fitzpatrick, Todd J. Braje, Matthew F. Napolitano, Thomas P. Leppard. Measuring Human Impacts on Islands Relative to Size. In: The Island Anthropocene, Society for American Archaeology 82nd Annual Meeting, Vancouver.
- 2017 M. Hinanui Cauchois, John T. O'Connor. Preliminary Investigations at Ra'iātea, Society Islands, French Polynesia (Poster). In: Oceania, Society for American Archaeology 82nd Annual Meeting, Vancouver.

- 2017 Robert J. DiNapoli, Matthew F. Napolitano, Jessica H. Stone, Brian G. Lane, Damion Sailors, John T. O'Connor, Nicholas P. Jew, Maureece Levin, Aaron Poteate, Scott M. Fitzpatrick. Reevaluating the Pre-Columbian Colonization of the Caribbean using Chronometric Hygiene and Bayesian Modeling. In: Sailing at the Edge of Time: Global Perspectives on Island Colonization, Society for American Archaeology 82nd Annual Meeting, Vancouver.
- 2015 John T. O'Connor. Artifact Networks, Cultural Transmission, and Polynesian Settlement. In: Evolution and Ecology in Oceania, Society for American Archaeology 80th Annual Meeting, San Francisco.
- 2015 John T. O'Connor, Frances J. White. Artifact Networks and Cultural Transmission in East Polynesia. In: Rising Tides: Global Perspectives on Island Archaeology, 68th Annual Northwest Anthropological Conference, Eugene.
- 2014 John T. O'Connor. Archaeological Feature Extraction from Aerial Imagery: Ahupua'a o Kōloa, Kaua'i (Poster). AAAS Pacific Division 95th Annual Meeting, Riverside.
- 2013 John T. O'Connor. Fishhook Variability in East Polynesia. In: Theoretical and Methodological Issues for Oceanic Colonization, Society for American Archaeology 78th Annual Meeting, Honolulu.



Lisa Westwood, RPA

Director of Cultural Resources

Ms. Westwood is a cultural resources professional with 24 years of consulting experience. Ms. Westwood is a Registered Professional Archaeologist with extensive experience in cultural resources management, archaeology, and tribal consultation. Building upon her expertise in archaeology and cultural resources law, and her experience in CEQA/NEPA, permitting, and tribal consultation, her professional focus is on cultural resources policy and the negotiation and development of cultural resources compliance strategy for large specific plans, residential developments, and public sector projects.

Education

M.A., Anthropology, Eastern New Mexico University

B.A., Anthropology, University of Iowa

Registrations, Certifications, Permits and Affiliations

Registered Professional Archaeologist, No. 11692

State of Nevada Antiquities Permit - Principal Investigator (Statewide, non-federal lands) Bureau of Land Management, California Archaeological Investigations Permit - Principal Investigator Bureau of Land Management, Nevada Cultural Resource Use Permit - Principal Investigator San Diego County Approved Archaeologist

Representative Professional Experience

Birmingham Drive Improvements Project, **City of Encinitas (2017-2018)**. Responsible for the cultural resources inventory and evaluation of a segment of Birmingham Drive, which includes autograph panels in the sidewalks from local figures and celebrities. The City of Birmingham proposes to widen and improve the project, and ECORP was tasked with evaluating the significance of the autograph panels and historic roadways to support a CEQA document.

City of Vista, Buena Sanitation District As-Needed Environmental Consulting Services for Sewer Projects (2018). Responsible for the cultural resources compliance under a certified master EIR for sewer projects within the district's jurisdiction, including construction monitoring and peer review services.

South Lake Community Park, **City of San Marcos**. Principal Investigator for the cultural resources survey of a proposed community dock at South Lake Reservoir. Carried out the survey, coordinated with the San Luis Rey Band of Mission Indians, and prepared the technical report.

Metropolitan Airpark Project (Brown Field Municipal Airport), City of San Diego.

Conducted a peer review and compliance assessment for the applicability of previously-prepared cultural resources documentation under CEQA for use in the Section 106 NHPA consultation process as it relates to a Section 404 permit with the USACE for a roadway improvement element of the larger project. Designed the recommended strategy for compliance, which includes an updated records search, addendum field survey, and preparation of a technical report. Subsequently, carried out two cultural resources inventories of five intersections and roadway improvement areas and prepared technical reports.

Gregory Canyon Landfill, **San Diego County (2016 – 2017)**. Tribal liaison between the applicants for a proposed landfill, the Los Angeles District of the US Army Corps of Engineers, and the Pala Tribe regarding impacts (and alternatives) to a Traditional Cultural Property. Also responsible for authoring the updated determination of effect, Historic Property Treatment Plan, and Memorandum of Agreement under Section 106 of the NHPA. Recently assisted in the negotiation of the sale of the mountain to the Pala Tribe, which ended decades of controversy.

City of Carlsbad Cultural Resources Guidelines (2016 – 2017). Developed and primary author of the updated cultural resources guidelines and procedures for the City of Carlsbad to reflect recent changes in state law and local policy as it relates to cultural, tribal, and paleontological resources. Subsequently contracted to carry out a city-wide cultural resources records search and development of a GIS-based sensitivity model for archaeological and architectural history resources for use by the City in long-range planning efforts.

Imperial Beach Resort Project, City of Imperial Beach, County of San Diego.

Responsible for a QA/QC review and compliance verification of the architectural history evaluation of a single-story duplex building at 1046 Seacoast Drive. The historic-age building is proposed for demolition as part of a resort development project and required evaluation of eligibility for inclusion in the NRHP and CRHR by ECORP.

San Diego SCY High School Security Project, City of San Diego. Under a master services agreement with FEMA and the Department of Homeland Security, reviewed project information, assessed the level of compliance, and developed a compliance strategy for FEMA to fill data gaps, and drafted tribal correspondence and FEMA's consultation letter to the State Historic Preservation Officer. Work was conducted under the 2014 Programmatic Agreement between FEMA, SHPO, and the California Governor's Office of Emergency Services.

Assembly Bill 52 Compliance. Contributed to the negotiation of the bill language by providing technical input during negotiation of the bill's language. Subsequently, developed an agency and planner training workshop that has been delivered and presented nearly 70 times. Developed SOPs for the County of San Bernardino, County of Contra Costa, City of Folsom, City of Belvedere, County of Placer, City of Carlsbad, and City of Yuba City to assist them in developing a standardized and more legally defensible program of compliance with the new tribal consultation requirement under CEQA.

APPENDIX B

Native American Heritage Commission Sacred Lands File Search

NATIVE AMERICAN HERITAGE COMMISSION Environmental and Cultural Department

Environmental and Cultural Department 1550 Harbor Blvd., ROOM 100 West SACRAMENTO, CA 95691 (916) 373-3710 Fax (916) 373-5471



Sent by Email:

Re:

Dear

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not preclude the presence of cultural resources in any project area. Other sources for cultural resources should also be contacted for information regarding known and/or recorded sites.

Enclosed is a list of Native Americans tribes who may have knowledge of cultural resources in the project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these tribes, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at 916-573-1033 or frank.lienert@nahc.ca.gov.

Sincerely,

Frank Lienert Associate Governmental Program Analyst

Native American Heritage Commission Native American Contacts August 6, 2018

Ewijaapaayp Band of Kumeyaay Indians Viejas Band of Kumeyaay Indians Robert Pinto Sr., Chairperson Robert J. Welch. Jr., Chairperson 4054 Willows Road Diegueno/Kumeyaay 1 Vieias Grade Road Diegueno/Kumeyaay Alpine , CA 91901 , CA 91901 Alpine ihagen@vieias-nsn.gov (619) 445-6315 (619) 445-3810 (619) 445-9126 Fax (619) 445-5337 Fax La Posta Band of Diegueño Mission Indians Campo Band of Diegueño Mission Indians Gwendolvn Parada. Chairperson Ralph Goff. Chairperson 8 Crestwood Road Diegueno/Kumeyaay 36190 Church Road, Suite 1 Diegueno/Kumeyaay , CA 91905 , CA 91906 Boulevard Campo LP13boots@aol.com rgoff@campo-nsn.gov (619) 478-2113 (619) 478-9046 (619) 478-2125 Fax (619) 478-5818 Fax Manzanita Band of Kumevaav Nation Jamul Indian Village Angela Elliott-Santos, Chairperson Erica Pinto, Chairperson Diegueno/Kumevaav P.O. Box 1302 Diegueno/Kumeyaay P.O. Box 612 , CA 91935 , CA 91905 Boulevard Jamul (619) 766-4930 (619) 669-4785 (619) 766-4957 Fax (619) 669-4817 San Pasqual Band of Diegueño Mission Indians Los Covotes Band of Cahuilla and Cupeno Indians Allen E. Lawson, Chairperson Shane Chapparosa, Chairman P.O. Box 365 Diegueno P.O. Box 189 Cahuilla Warner Springs , CA 92086-01 Vallev Center , CA 92082 allenl@sanpasqualtribe.org Chapparosa@msn.com (760) 749-3200 (760) 782-0711 (760) 749-3876 Fax (760) 782-0712 Fax Sycuan Band of the Kumeyaay Nation Mesa Grande Band of Diegueño Mission Indians Cody J. Martinez. Chairperson Virgil Ovos, Chairperson 1 Kwaaypaay Court Diegueno/Kumeyaay P.O Box 270 Diegueno , CA 92019 Santa Ysabel , CA 92070 El Caion ssilva@svcuan-nsn.gov mesagrandeband@msn.com (619) 445-2613 (760) 782-3818 (619) 445-1927 Fax (760) 782-9092 Fax

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced.

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 Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native American Tribes with regard to cultural resources assessments for the proposed RW Extension to San Diego Surf Cup San Diego Dieguito Valley, San Diego County

Native American Heritage Commission Native American Contacts August 6, 2018

Pala Band of Mission Indians Shasta Gaughen, PhD, THPO PMB 50, 35008 Pala Temecula Rd. Luiseno Pala CA 92059 Cupeno sqauqhen@palatribe.com (760) 891-3515

(760) 742-3189 Fax

Pauma Band of Luiseno Indians Temet Aquilar. Chairperson P.O. Box 369 Luiseno Pauma Vallev · CA 92061 (760) 742-1289, Ext. 303

(760) 742-3422 Fax

Kwaavmii Laguna Band of Mission Indians Carmen Lucas P.O. Box 775 Diegueno-Kwaaymii Pine Vallev , CA 91962 Kumevaav (619) 709-4207

Inaia-Cosmit Band of Indians Rebecca Osuna. Chairman 2005 S. Escondido Blvd. Diequeno Escondido , CA 92025 (760) 737-7628

(760) 747-8568 Fax

Juaneno Band of Mission Indians Acjachemen Nation

Teresa Romero. Chairwoman 31411-A La Matanza Street Juaneno ^{San Juan Capistrano}, CA 92675

tromero@iuaneno.com (949) 488-3484

(530) 354-5876 کا (949) 488-3294 Fax Rincon Band of Luiseño Indians Bo Mazzetti. Chairperson 1 West Tribal Road Luiseno Vallev Center CA 92082 bomazzetti@aol.com (760) 749-1051

(760) 749-5144

San Luis Rev Band of Mission Indians Tribal Council 1889 Sunset Drive Luiseno Vista CA 92081 cimojado@slrmissionindians.org (760) 724-8505

(760) 724-2172 Fax

Aqua Caliente Band of Cahuilla Indians Jeff Grubbe. Chairperson 5401 Dinah Shore Drive Cahuilla Palm Springs , CA 92264 (760) 699-6800

(760) 699-6919 Fax

Pechanga Band of Luiseño Indians Mark Macarro. Chairman P.O. Box 1477 Luiseno Temecula CA 92593 epreston@pechanga-nsn.gov (951) 770-6000

(951) 695-1778 Fax

La Jolla Band of Luiseno Indians Thomas Rodriquez. Chairperson 22000 Highway 76 Luiseno Pauma Vallev , CA 92061 (760) 742-3771

(760) 742-3779 Fax

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This list is only applicable for contacting local Native American Tribes with regard to cultural resources assessments for the proposed RW Extension to San Diego Surf Cup San Diego Dieguito Valley, San Diego County

Native American Heritage Commission Native American Contacts August 6, 2018

Kumevaav Cultural Repatriation Clint Linton. Director of Cultural P.O. Box 507 Santa Ysabel CA 92070 cilinton73@aol.com (760) 803-5694	Committee Resources Diequeno/Kumevaav	Ewiiaapaavp Band of Kumevaav Michael Garcia. Vice Chairperso 4054 Willows Road Alpine CA 91901 michaela@leaningrock.net (619) 445-6315	r Indians n Diegueno/Kumeyaay
		(619) 445-9126 Fax	
Aqua Caliente Band of Cahuilla Patricia Garcia-Plotkin. Director. 5401 Dinah Shore Drive Palm Springs CA 92264 ACBCI-THPO@aguacaliente.net (760) 699-6907	Indians THPO Cahuilla	Barona Band of Mission Indians Edwin Romero Chairperson 1095 Barona Road Lakeside CA 92040 clloyd@barona-nsn.gov (619) 443-6612	Dieaueno
(760) 699-6924 Fax		(619) 443-0681	
Soboba Band of Luiseno Indians Joseph Ontiveros. Cultural Reso P.O. BOX 487 San Jacinto CA 92581 iontiveros@soboba-nsn.gov (951) 663-5279 (951) 654-5544 evt 4137 (951) 654-4198 Fax	s burce Department Luiseno Cahuilla		
lipav Nation of Santa Ysabel Virdil Perez. Chairperson P.O. Box 130 Santa Ysabel → CA 92070 (760) 765-0845	Diequeno/Kumevaav		
(760) 765-0320 Fax			
Pala Band of Mission Indians Robert H. Smith. Chairperson 12196 Pala Mission Road Pala CA 92059 rsmith@palatribe.com (760) 891-3500	Luiseno Cupeno		

(760) 742-3189 Fax

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced.

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This list is only applicable for contacting local Native American Tribes with regard to cultural resources assessments for the proposed RW Extension to San Diego Surf Cup San Diego Dieguito Valley, San Diego County

California Historical Resources Information System Records Search and DPR Site Records



APPENDIX D: NOISE DATA SHEETS



Roadway Construction Noise Model (RCNM), Version 1.1

Report date: Case Description: 9/23/2018

Desal Pilot Drilling - no wall

---- Receptor #1 ----

		Baselines			
Description	Land Use	Daytime	Evening	Night	
Avenida Feliz	Residential	41		43	41

			Equipment						
		Spec		Actual	Receptor	Estimated			
	Impact		Lmax	Lmax	Lmax Distance				
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)			
Backhoe	No	40		77.6	600	0			
Drilling Rig	No	100	I	90	600	0			

			Results											
		Calculated (dB	Noise Limits (dBA)					Noise Limit Exceedance (dBA)						
			Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax Leo	q Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		56	52 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Drilling Rig		68.4	68.4 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	68.4	68.5 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

		Receptor #2							
		Baselines (o	dBA)						
Description	Land Use	Daytime	Evening	Night					
Caminito San Sebastian	Residential	48	50		40				
				Equipm	ont				

			Equipment						
			Spec	Actual	Receptor	Estimated			
	Impact		Lmax Lmax Dis		Distance	Shielding			
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)			
Backhoe	No	40)	77.6	5 1500	0			
Drilling Rig	No	100	1	90) 1500	0			

				Result	S										
		Calculated	d (dBA)		Noise Li	mits (dBA	4)				Noise L	imit Exceed	lance (dBA)		
				Day		Eveni	ng	Nigh	it	Day		Evening	5	Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lma	x Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		48	3	44 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Drilling Rig		60.5	56	0.5 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	60.5	56	0.6 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		*Calculate	ed Lmax	is the Loud	dest value.										
				Re	ceptor #3	-									
		Baselines	(dBA)												
Description	Land Use	Daytime	Evenin	g Night											
San Dieguito Riverbed	Residential	, 44	4	43	46										
				Fauip	ment										
				Spec	Actual	Recer	otor Esti	mated							
		Impact		Imax	Imax	Distar	nce Shi	Iding							
Description		Device	Usage(%) (dBA)	(dBA)	(feet)	(dB	4)							
Backhoe		No	0-(40	7	7.6	50	, 0							
Drilling Rig		No	-	L00		90	50	0							
				Result	S										
		Calculated	d (dBA)		Noise Li	mits (dBA	4)				Noise L	_imit Exceed	lance (dBA)		
			. ,	Day		Eveni	ng	Nigh	t	Day		Evening	ς, ,	Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lma	x Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		77.6	5 7	3.6 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Drilling Rig		90	D	90 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	90) 9	0.1 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		*Calculate	ed Lmax	is the Loud	dest value.				,			-		-	-
Roadway Construction Noise Model (RCNM), Version 1.1

Report date: Case Description: 9/23/2018 Desal Pilot Drilling - with wall

---- Receptor #1 ----

		Baselines	(dBA)		
Description	Land Use	Daytime	Evening	Night	
Avenida Feliz	Residential	41	43		41

			Equipm	ent		
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40)	77.6	600	0
Drill Rig with Wall	No	100)	65	600	0

			Results											
		Calculated (dB/	۹)	Noise L	imits (dBA)					Noise L	imit Exceed	ance (dBA)	1	
			Day		Evening	5	Night		Day		Evening	5	Night	
Equipment		*Lmax Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		56	52 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Drill Rig with Wall		43.4	43.4 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	56	52.6 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		*												

*Calculated Lmax is the Loudest value.

				Rec	eptor #2
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night	
Caminito San Sebastian	Residential	48	50	C	40

	Equipment							
			Spec	Actual	Receptor	Estimated		
	Impact		Lmax	Lmax	Distance	Shielding		
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)		
Backhoe	No	40		77.6	1500	0		
Drill Rig with Wall	No	100		65	1500	0		

					Results												
		Calculat	ed (dBA)			Noise l	Limits (dBA	4)					Noise L	imit Exceed	ance (dBA)		
					Day		Eveni	ng		Night		Day		Evening		Night	
Equipment		*Lmax	Leq		Lmax	Leq	Lmax		Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe			48	44	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Drill Rig with Wall		35	5.5	35.5	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total		48	44.6	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		*Calcula	ated Lma	x is th	ne Loudes	st value.											
					Rece	ptor #3											
		Baseline	es (dBA)														
Description	Land Use	Daytime	e Eveni	ng	Night												
San Dieguito Riverbed	Residential		44	43	4	16											
					Equipme	ent											
					Spec	Actual	Recer	otor	Estimate	ed							
		Impact			Lmax	Lmax	Distar	nce	Shieldin	g							
Description		Device	Usage	e(%)	(dBA)	(dBA)	(feet)		(dBA)								
Backhoe		No		40		7	77.6	50)	0							
Drill Rig with Wall		No		100			65	50)	0							
					Results												
		Calculat	ed (dBA)			Noise I	Limits (dB/	4)					Noise L	imit Exceed	ance (dBA)		
					Day		Eveni	ng		Night		Day		Evening		Night	
Equipment		*Lmax	Leq		Lmax	Leq	Lmax		Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe		77	7.6	73.6	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Drill Rig with Wall			65	65	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	77	7.6	74.1	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		*Calcula	ted Lma	x is th	ne Loudes	st value.											

		Site Surve	Эу			
Job #:	11281.00	Project Name:	OMWD Ground	wter Desal Pil	ot	
Date:	9-18-2018	Site #: 3 - day time	-	Engineer:	Haley	Johnson
Address: 14555 El	Com. Real	Isla de Campanero:-	lat: 32	9828	lon	1-117.2160
Meter:		Serial #:		Calibrator:		Serial #:
Notes:	Residuted Si	te- poputy line	, behind	Camin	itu s	an Sebastia
min'. 36.2	aux: 48.0	24				
May: 68.5		mark	1.184	ni	nuti	dBA
Sketch:		(55.7		lo	38.4
20 feet from	n(Eust)	2	47.5		()	49.6
start of en	-banker mert	3	50.6		12	40.1
stope.		4 5	68.5 54.9		13	37.9
		b	48.6		14	36.2
		7	53.5		15	49.1
		8	49.4			
		9	40.6			
Temp:	76°F	Wind Speed:	10 mph	Humidity:	60	%
Start of Measurement:	3.05pm	End of Measurement: 7:1	9 pm			dBA L _{EQ}
	Cars (tally all cars)		Medium Tru	ucks (MT)	ŀ	leavy Trucks (HT)
			steady Occasional vehicles, Cars to Feld:	dehivens, Soccr	durp Wct	truch, minute 4 r tauh, minute 5
Noise Measurement for Info	rmation Only		Latro te	rlathe		
No Through Roadways			merson	A)		
No Calibration Analysis Will	Be Provided	1				

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		Site Surv	ey	
Job #:	11281.00	Project Name:	OMWD Groundwter Desa	l Pilot
Date:	9-18-2018	Site #: 2-day	Engineer	Haley Johnson
Address:	3847 Averida	Is lade Campanero. Fe	liz lat: 32.	9870 long #-117.2125
Meter:		Serial #:	Calibrato	: Serial #:
Notes:	site 2	- Armide 1	Feliz popoty	line
min'. 36.4	aug: 40	9.5		
max: 42.9			nonute, dBA	minute dBA
Sketch:			$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
Temp:	77%	Wind Speed: Ust	10 mph Humidity:	57 %
Start of Measurement:	2:23 pm	End of Measurement:		dBA L _{EQ}
	Cars (tally all cars)		Medium Trucks (MT)	Heavy Trucks (HT)
distant cas Colf cart	on Via di	la Valle	landscoping equip. in residented developent	
Noise Measurement for In	formation Only		Verives equipo	
No Through Roadways				
No Calibration Analysis W	ill Be Provided			

		Site Surv	ey				
Job #:	11281.00	Project Name:	OMWD Ground	dwter Desal Pi	lot		
Date:	9-18.2018	Site #: 1 - day		Engineer:	Halen Jo	has))
Address: 14555 El c	. Real	ista de Cumpeñero:	lat: 32	9850	long: -117	7.216	26
Meter:		Serial #:		Calibrator:	Ser	ial #:	-
Notes:	Site- #1	Alexian o	rea				
min: 40.7	avi, 4	13.7					
Mar: 47.2				d	BA eiron a	uin fi	~ 1500
Sketch:		<u> </u>		1	47.2	13	
				2	47.0	14	40.7
				3	41.8	15	44.0
				4	42.6		
		* a		5	42.5		
				6	43.6		
				7	42.1		
				8	46.0		
				4	44.2		
					43.0		
				12	42.7		
Temp:	77°F	Wind Speed: /On the W	10 mph	Humidity:	57		↓ 9
Start of Measurement:	1:58pm	End of Measurement: 2'13	p	•			dBA L _F
	Cars (tally all cars)		Medium Tr	ucks (MT)	Heavy Tr	rucks (I	
			Equipment of	Llive y cnp	Riding M	hóire	-
			pond (mi	nutea)	@ Mor	sa	Run
loise Measurement for Inf	ormation Only						
lo Through Roadways							
lo Calibration Analysis Wil	Il Be Provided						

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		Site Surv	ey			
Job #:	11281.00	Project Name:	OMWD Groundwter Desal P	ilot		
Date:	a-10.2012	Site #: 3 - frey	Engineer:	H. Johnson		
Address:		Ista de Campanero:	Buch side of	Campuito za s-basht		
Meter:		Serial #:	Calibrator:	Serial #:		
Notes:						
Job #:11281.00Project Name:OMWD Groundwter Desal PilotDate: $A - [A - 2\sigma]^{\circ}$ Site #: $3 - fet \frac{M}{2}^{\circ}$ Engineer:[J. JohnsonAddress:Interdectamparere:Book state of campile or campileState of campile or campileMeter:Serial #:Calibrator:Serial #:Notes:Interdectamparere:Book state of campileSerial #:Meter:Serial #:Calibrator:Serial #:Notes:Interdectamparere:Book state of campileBook state of campileMax:54.9min.kdbAmin.fcMax:54.9min.kdbAmin.fcMax:54.9Interdectamparere:Interdectamparere:Sketch:I50.31Sketch:I50.5Group of the state of campileState of the state of campileSketch:I50.5Group of the state of campileInterdectamparere:Group of the state of campileGroup of the state of campileGroup of the state of t						
Max: 54.9		milite	dBA	minte dBA		
Sketch:		1	50.3	9 486		
		2	51.5	10 46.8		
		3	47.8	11 50.5		
		4	52.1	54.2		
		ć	48.0	3 54.6		
)	57,2 10	4 50.5		
		6	; = \$.	5 49.0		
		7.	cu a	J į ·		
		0	5 %. [
Temp:	63°F	Wind Speed: 60	4 mph Humidity:	84 %		
Start of Measurement:	7.08	End of Measurement:	7:33	dBA L _{EQ}		
	Cars (tally all cars)		Medium Trucks (MT)	Heavy Trucks (HT)		
Cars leaving	socier prouisie	wetter				
Noise Measurement for Infor	mation Only					
No Through Roadways						
No Calibration Analysis Will I	Be Provided 🗼					

Sifc 2-	Faliz	Fiszpm-	end 9-19-2018 H. Johnson
minute	d BA		8.12pm
1	37.4		antant cars on on a ana valu
2	41.5		distant airplane noise
7	38.0		(maliture' see site le ? events
4	41.5		measurent shat
5	38.4		
6	32.4 -		24
7	49.9 -		MIN, 52.7
-6	49.5		Max: 44.9
9	48.5		111 43
lo	46.0		
ų	49.2		
12	41.7		
13	47.9		
14	4 3.0		
15	4S.2		

		S	Site Surve	у				
Job #:	11281.00	Project Name:		OMWD Ground	lwter Desal F	Pilot		
Date: G-16 . 2014		Site #: / - ever	e/ms		Engineer:	H.J.	turson	
Address:		lela de Campa	iero.	rippin a	on Neu	- San Die	guito cra	h
Meter:		Serial #:			Calibrator:		Serial #:	
Notes:								
min 36.4	aux 42	72						
May 52.1			Mile	n d	DA 1	amute	1 d BA	
Sketch:			1	41.	5	9	46.7	
			0		/	10	40.5	
			X	9.2		10	1126	
			7	436	2	(/	92.0	
			4	420	2	12	44.4	
			5	42.5	-	2	48.1	
			6	45.4		15	441	
			N			14	90.1	
			7	41.0		15	36.4	
			К	521		{ }		
							l	
Temp:	66	Wind Speed:	ω	` 4 mph	Humidity:	84	!	
Start of Measurement:	7.36 2	End of Measure	ement:	·····				dBA l
	Cars (tally all cars	s)		Medium Tru	icks (MT)	Hea	avy Trucks (HT)	
distant cors	or Viad	e (a Valle		plane F	hove			
	•	C W V V W VC		annut	eq			
					-			
Noise Measurement for Inf	ormation Only							
No Through Roadways		<u> </u>						
lo Calibration Analysis Wil	I Be Provided							

9/19/2218				H. Johan
5/k 3-	- night-	Caminito	5 cn Subastia	start time: 9'59pr
$\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{5}$ $\frac{1}{6}$ $\frac{1}{7}$ $\frac{1}{10}$ $\frac{10}{11}$ $\frac{1}{12}$ $\frac{1}{12}$	100 100 100 100 100 100 100 100		I an 249 43 Ma	Mainterence website - punke 9 mainterence website - punke 9 min! 33.7 max! 46.2 aug! 39.7 Conditions - see sheet for site 1, night
14 15				

a/1a/2018		
Site 2 - Aventa	Feliz	- night

H. John Start time: Gel time:

minute	dBA	Grof Time.
1		
34		1.6
5		Sprinkel
8		
4		mm
10		pux.
u 12		aug!
13		conditions-see site 1 night
14		C
15 /		

Job #:		Site Sur	vey	
_	11281.00	Project Name:	OMWD Groundwter Desal F	ilot
Date:	9-19-2018	Site #: [-nisht	Engineer:	H. Johnson
Address:		I <u>sla de Campanelu.</u>	riparian area ne	in San Dieguild da
Meter:		Serial #:	Calibrator:	Serial #:
Notes:				
m/h: 412	aus: 43,4	6		
Max: 49.4		······	white I dBA	1 minutel dBA
			4 9.1 4 95.6 5 45.0 6 41.2 7 49.4 8 47.0	11 12 13 13 15
Temp:	62	Wind Speed: S	l mph Humidity:	al
Start of Measurement:		End of Measurement:		dE
· · · · · · · · · · · · · · · · · · ·	Cars (tally all cars)		Medium Trucks (MT)	Heavy Trucks (HT)
Voise Measurement for Inf	ormation Only			



Prepared by:



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