

ORTEGA PARK PRELIMINARY DESIGN

VICINITY MAP



PROJECT INFORMATION
Park Name: Ortega Park
Owner: City of Santa Barbara, Parks and Recreation Department
Owner,s Representative: Jill Zachary, Parks and Recreation Director
Project Address: 604 East Ortega Street Santa Barbara, CA 93103
Accessors Parcel Number: 031-172-002
Zone: P-R (Parks and Recreation)
General Plan: Parks and Open Space
Occupancy Type
Flood Zone 2019: AH

PROJECT DESCRIPTION

The Parks and Recreation Department is leading an effort to renovate Ortega Park. Following an extensive community engagement process, a master plan was developed and approved by City Council in January 2019. The Ortega Park renovation plan proposes a new community swimming pool, skate park, restrooms, playground, picnic area, outdoor game area, and formal ball fields. New street parking is also proposed that is aligned perpendicular to the curb on Salsipuedes St. and angled to the Ortega St. curb. The project represents a complete renovation and update of Ortega Park that is envisioned to make significant facility upgrades, expand recreational activities for all ages, and create a cohesive landscape plan for one of Santa Barbara's largest urban parks.

There are currently 40 trees proposed for removal and 108 trees proposed for planting. There are 18 trees to remain on the project site. See Existing Condition and Demolition Plan on sheet D-1 and sheet L-9 for location, quantity, size, and species of trees proposed.

PROJECT STATISTICS

PARCEL SIZE:	5.46 ACRES (237,970 SF)	
TOTAL DEVELOPMENT AREA:	5.67 ACRES (247,047 SF)	
PROPOSED IMPERVIOUS AREA:	2.0 ACRES (87,034 SF)	
PROPOSED PERVIOUS AREA:	3.67 ACRES (160,013 SF)	
ON SITE (PARK INTERIOR)	4.71 ACRES (205,016 SF)	
EXISTING IMPERVIOUS AREA:	32,570 SF	
EXISTING PERVIOUS AREA:	172,446 SF	
PROPOSED IMPERVIOUS AREA:	60,114 SF	
PROPOSED PERVIOUS AREA:	144,902 SF	
PROPOSED LANDSCAPE AREA:	43,437 SF	
PROPOSED SYNTHETIC TURF:	93,452 SF	
RIGHT-OF-WAY (OFF-SITE):	0.96 ACRES (42,031 SF)	
EXISTING IMPERVIOUS AREA:	22,671 SF	
EXISTING PERVIOUS AREA:	19,360 SF	
PROPOSED IMPERVIOUS AREA:	26,920 SF	
PROPOSED PERVIOUS AREA:	15,111 SF	
PROPOSED LANDSCAPE AREA:	4,109 SF	

BUILDING SQUARE FOOTAGE	AREA (S.F.)	
	GROSS	NET
EXISTING		
WELCOME HOUSE	1,604 SF	1,478 SF
RESTROOM BUILDING	577 SF	529 SF
POOL EQUIPMENT BUILDING	557 SF	510 SF
DEMOLISHED		
RESTROOM BUILDING	577 SF	529 SF
POOL EQUIPMENT BUILDING	557 SF	510 SF
PROPOSED		
RESTROOM BUILDING	2019 SF	1825 SF
POOL EQUIPMENT BUILDING	1167 SF	1082 SF
TOTAL AT PROJECT COMPLETION	4790 SF	4385 SF

ACCESSORY STRUCTURE SQUARE FOOTAGE	AREA (S.F)	
	GROSS	NET
PROPOSED		
PERGOLA 1	528 SF	324 SF
PERGOLA 2	528 SF	324 SF
PERGOLA 3	528 SF	324 SF
TRASH ENCLOSURE	180 SF	183 SF

PARKING

AUTO PARKING	SPACE COUNT
EXISTING PARKING SPACES REMOVED:	40
EXISTING PASSENGER LOADING:	0
PROPOSED PARKING SPACES:	63
PROPOSED PASSENGER LOADING SPACES:	3
VEHICLE PARKING REQUIRED:	-

AS DETERMINED BY THE COMMUNITY DEVELOPMENT DIRECTOR IN CONSULTATION WITH THE PUBLIC WORKS DIRECTOR.

BICYCLE PARKING PROVIDED:	24
BICYCLE PARKING REQUIRED:	-

AS DETERMINED BY THE PUBLIC WORKS DIRECTOR PER MUNICIPAL CODE 30.175.040. SEE SHEET L-2 FOR LOCATIONS AND QUANTITY OF BIKE RACKS PROPOSED.

SHEET INDEX

L-1	COVER SHEET
L-2	SITE PLAN
L-3	PARK RENDERING #1
L-4	PARK RENDERING #2
L-5	PARK RENDERING #3
L-6	GENERAL PARK AMENITY AREAS
L-7	PLAY EQUIPMENT
L-8	SITE FURNISHINGS AND MATERIALS
L-9	LANDSCAPE PLAN AND MWELO CALCULATIONS
L-10	PLANT PALETTE
C-1	PRELIMINARY GRADING
C-2	PRELIMINARY GRADING
D-1	EXISTING CONDITIONS AND DEMOLITION PLAN
D-2	CONSTRUCTION PHASING PLAN
A-1	EXISTING SITE PHOTOS
A-2	EXISTING BUILDING PHOTOS
A-3	EXISTING ELEVATION PHOTOS
A-4	EXISTING ELEVATION PHOTOS
A-5	EXISTING SURROUNDING NEIGHBORHOOD
A-6	EXISTING SURROUNDING NEIGHBORHOOD
A-7	WELCOME HOUSE FLOOR PLAN
A-8	WELCOME HOUSE ELEVATIONS
A-9	WELCOME HOUSE ELEVATIONS
A-10	POOL EQUIPMENT BUILDING FLOOR PLAN
A-11	POOL EQUIPMENT BUILDING ELEVATIONS
A-12	POOL EQUIPMENT BUILDING ELEVATIONS
A-13	RESTROOM BUILDING FLOOR PLAN
A-14	RESTROOM BUILDING ROOF PLAN
A-15	RESTROOM BUILDING ELEVATIONS
A-16	RESTROOM BUILDING ELEVATIONS
A-17	COLOR AND MATERIALS - WELCOME HOUSE
A-18	COLOR AND MATERIALS - POOL EQUIPMENT BUILDING
A-19	COLOR AND MATERIALS - RESTROOM BUILDING
A-20	TRASH AND ENCLOSURE PLANS AND ELEVATIONS
P1-P13	PHOTOMETRIC PLANS AND ILLUMINATION SUMMARIES

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ORTEGA PARK
TITLE SHEET

#1144-03-RC19
JULY 2020

L-1



DESIGN KEY

GENERAL PARK IMPROVEMENTS

1. EXISTING BIKE PATH
2. EXISTING PARKWAY & STREET TREES
3. EXISTING TREES TO REMAIN WITH LAWN (SEE DEMO SHEET)
4. 6' DECORATIVE FENCE WITH PILASTERS
5. BACK-IN ANGLED PARKING WITH SIDEWALK
6. PARK RESTROOM
7. STAMPED CONCRETE ENTRY PROMENADE
8. OPEN GRASS AREA
9. DROUGHT TOLERANT PLANTER AREA
10. SECONDARY ACCESS GATE (MAINTENANCE & PEDESTRIAN EXIT)
11. PILASTERS WITH ROLLING GATE
12. PILASTERS WITH SWING GATE
13. ENTRY PLAZA WITH PARK SIGN, PER CITY OF SB STANDARD
14. HEAD-IN PARKING SPACES WITH EV CHARGING WHERE SHOWN
15. SPACE FOR TEMPORARY POP-UP TENTS & GATHERING
16. SEAT WALLS (18")
17. TRASH ENCLOSURE WITH OVERHEAD TRELLIS (PATH OF TRAVEL AS SHOWN ON PLAN)
18. BIKE RACKS (12 RACKS, 2 BICYCLES PER RACK, TYP. = 24)
19. IRON TREE GRATE, TYP.
20. IRON TRENCH GRATE, TYP.
21. BENCH
22. POOL SHOWERS
23. RELOCATED WELL, PER CITY OF SB
24. PUBLIC ART OR MURAL LOCATION

POOL AREA

25. POOL FACILITIES BUILDING AND PARK RESTROOMS
26. AQUATIC MECHANICAL AND CHEMICAL BUILDING
27. EXISTING WELCOME HOUSE AND POOL FACILITY ENTRY
28. WET PLAY/ WADING POOL (CAPACITY = 63 PEOPLE)
29. POOL SLIDE FEATURE
30. NON-COMPETITIVE LAP POOL (CAPACITY = 140 PEOPLE)
31. OVERHEAD SHADE STRUCTURE
32. CHANGING ROOMS
33. 6' POOL PERIMETER FENCE

SKATE PLAZA

34. CONCRETE SKATE PARK
35. SKATE PARK ENTRY FROM PARK
36. RETAINING WALL (36")

FAMILY PICNIC AREA & PLAYGROUND

37. SPLASH PAD IN PLAZA (RECIRCULATING, SEASONAL USE ONLY)
38. TRASH AND RECYCLING RECEPTACLES, PER CITY STANDARD
39. COLORIZED RUBBER SURFACING
40. FAMILY PICNIC AREA
41. PLAY EQUIPMENT (2-5 YEARS, 5-12 YEARS)
42. SHADE SAILS
43. CONCRETE PICNIC TABLES
44. 4' SAFETY FENCE AT PLAYGROUND

MULTI-GENERATIONAL ACTIVITY ZONE

45. RAISED PLANTERS WITH SEATING (18")
46. BASKETBALL
47. CONCRETE CORNHOLE
48. DURABLE OUTDOOR PING PONG TABLES
49. BOCCE BALL COURT
50. GAME TABLES

MULTI-SPORT FIELD AREA

51. MULTI-SPORT SYNTHETIC TURF WITH LIGHTING
52. BACKSTOP WITH ROOM FOR SEATING
53. YOUTH BASEBALL STRIPING ON SYTHETIC TURF
54. SECONDARY PEDESTRIAN ENTRANCE
55. FIELD ENTRANCE WITH SLIDING GATE AND PILASTERS
56. 4' DECORATIVE FENCE
57. SOCCER FIELD PROMENADE

****REFER TO ARCHITECTURAL SHEETS FOR BUILDING DIMENSIONS & MATERIALS**

Parks & Recreation

rrm design group

Wormhoudt INC

AQUATIC DESIGN GROUP

ORTEGA PARK
SITE PLAN

0' 15' 30' 60' 90'

SCALE 1" = 30'

NORTH

#1144-03-RC19
JULY 2020

L-2





KEYMAP

ORTEGA PARK
PERSPECTIVE RENDERING #1

#1144-03-RC19
JULY 2020

L-3



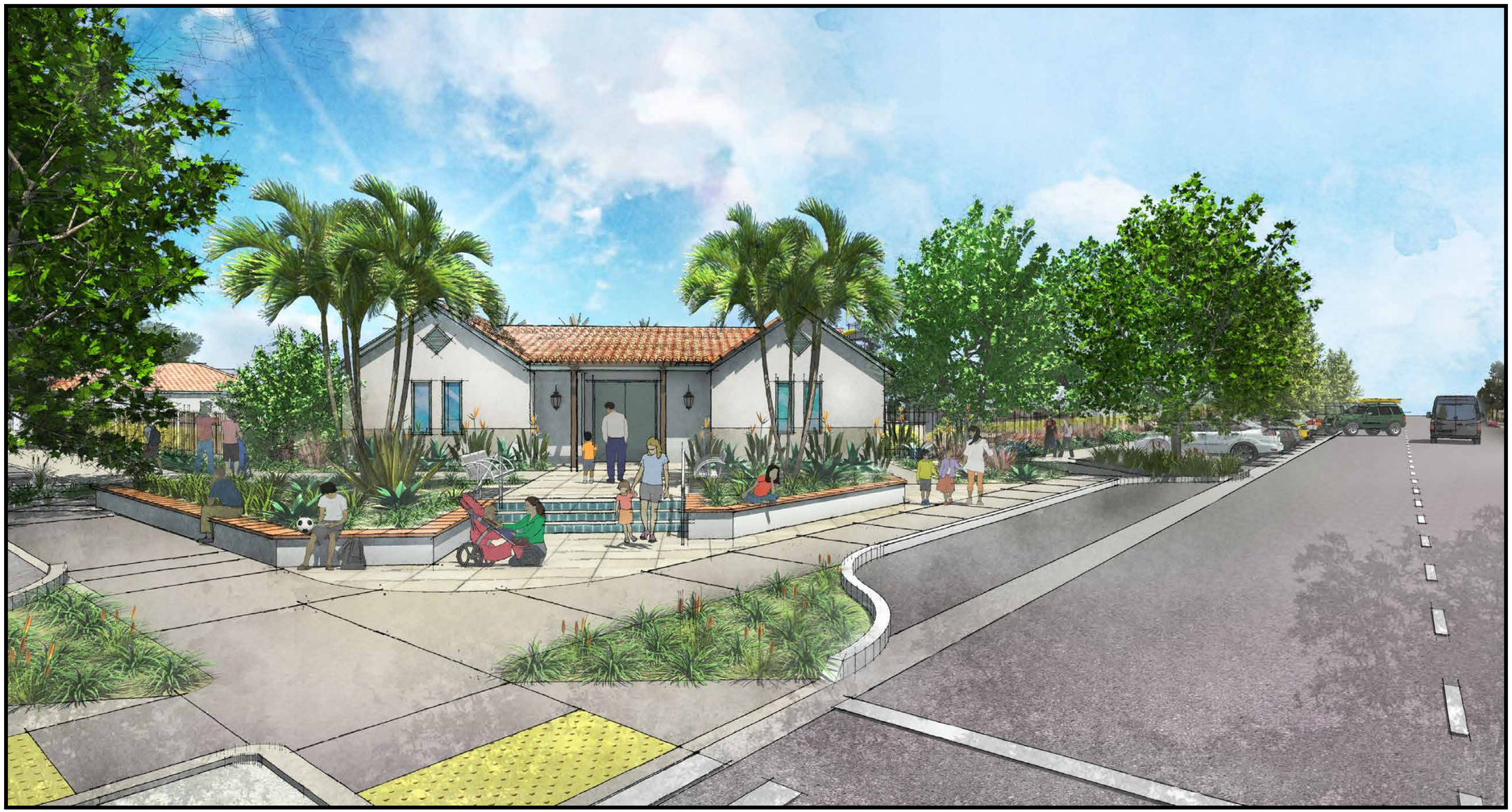


KEYMAP

ORTEGA PARK
PERSPECTIVE RENDERING #2

#1144-03-RC19
JULY 2020

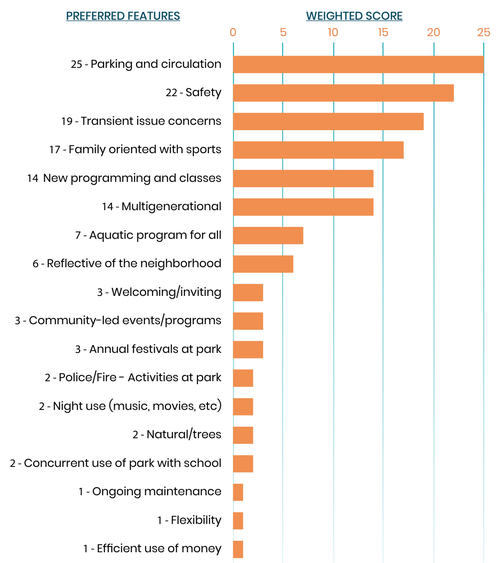
L-4

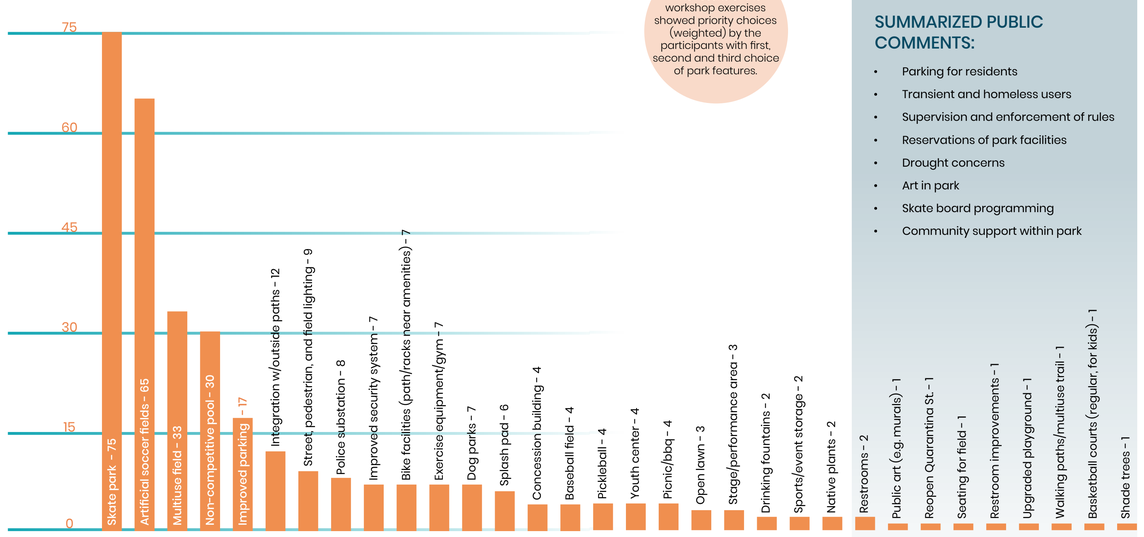




KEYMAP

ORTEGA PARK
PERSPECTIVE RENDERING #3





*The results of the workshop exercises showed priority choices (weighted) by the participants with first, second and third choice of park features.

SUMMARIZED PUBLIC COMMENTS:

- Parking for residents
- Transient and homeless users
- Supervision and enforcement of rules
- Reservations of park facilities
- Drought concerns
- Art in park
- Skate board programming
- Community support within park

MASTER PLAN WORKSHOP 1 SUMMARY RESULTS



SKATE PARK



CONCRETE PING PONG



CONCRETE CORNHOLE



SHADE SAILS



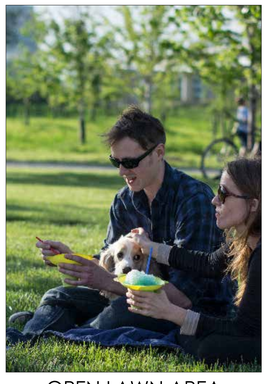
MULTI-SPORT SYNTHETIC FIELD AREA



BOCCE BALL



BASKETBALL



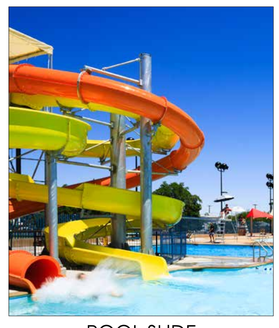
OPEN LAWN AREA



SPLASH PAD



WET PLAY & POOL



POOL SLIDE

MULTI-GENERATION ACTIVITY AREA

CENTRAL BBQ AND PICNIC AREA

POOL AREA

ORTEGA PARK
GENERAL PARK AMENITY AREAS



HEMISPHERE CLIMBER



RHAPSODY MUSIC EQUIPMENT



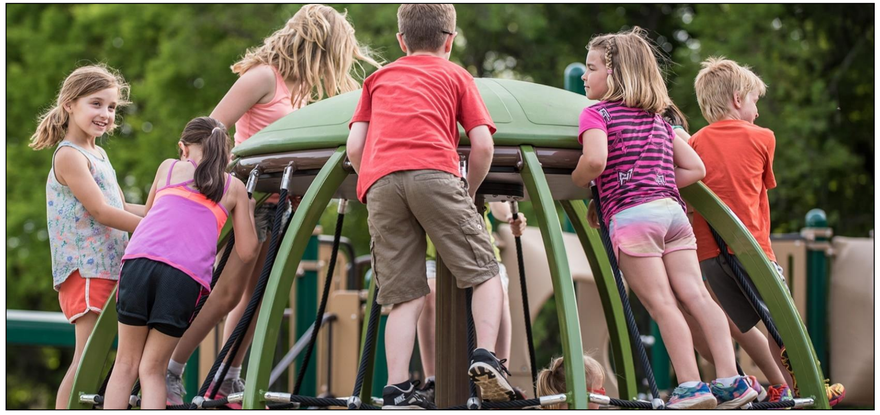
CORKSCREW NET CLIMBER



ECLIPSE CLIMBER



CURVA SPINNER



GLOBE SPINNER (OPTION)



ECLIPSE CLIMBER



MUSIC PLAY



OODLE SWING



MUSIC PLAY



RHAPSODY CASCATA BELLS

ORTEGA PARK
PLAY EQUIPMENT



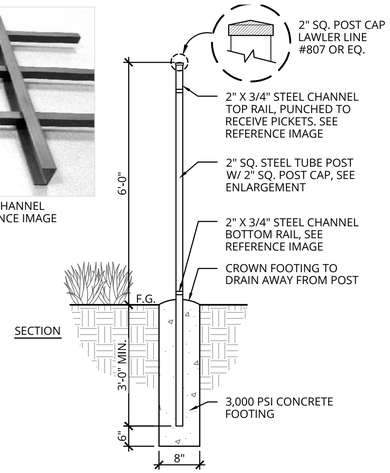
PUBLIC ART



SITE PILASTERS

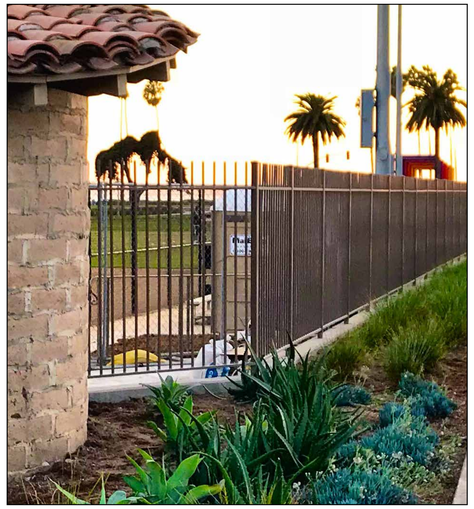


STEEL CHANNEL
REFERENCE IMAGE



SECTION

FENCING
2" TUBULAR STEEL WITH SQUARE POST



FENCING
AS SHOWN AT CABRILLO BALL FIELD IN
COLOR 'MOCHA'



UMBRELLAS AT POOL



CONCRETE SEAT WALLS



CONCRETE PICNIC TABLE



GAME TABLES



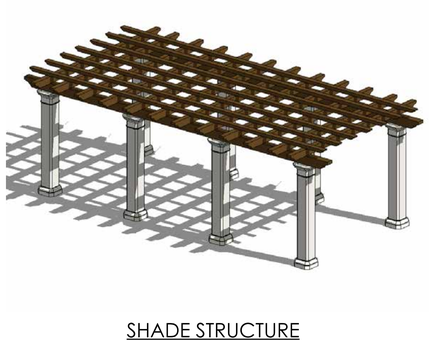
BIKE RACK
ACCOMODATES 2 BICYCLES PER RACK



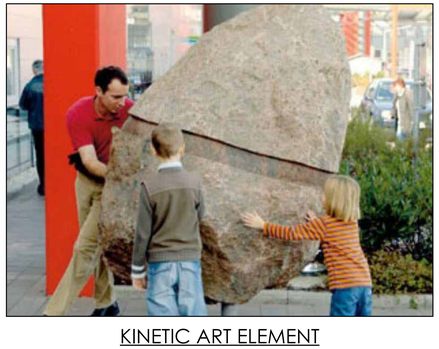
WOOD STAMPED CONCRETE



SHADE STRUCTURE



SHADE STRUCTURE



KINETIC ART ELEMENT



BENCH
VICTOR STANLEY: CBF-12 CITY SITES COLLECTION



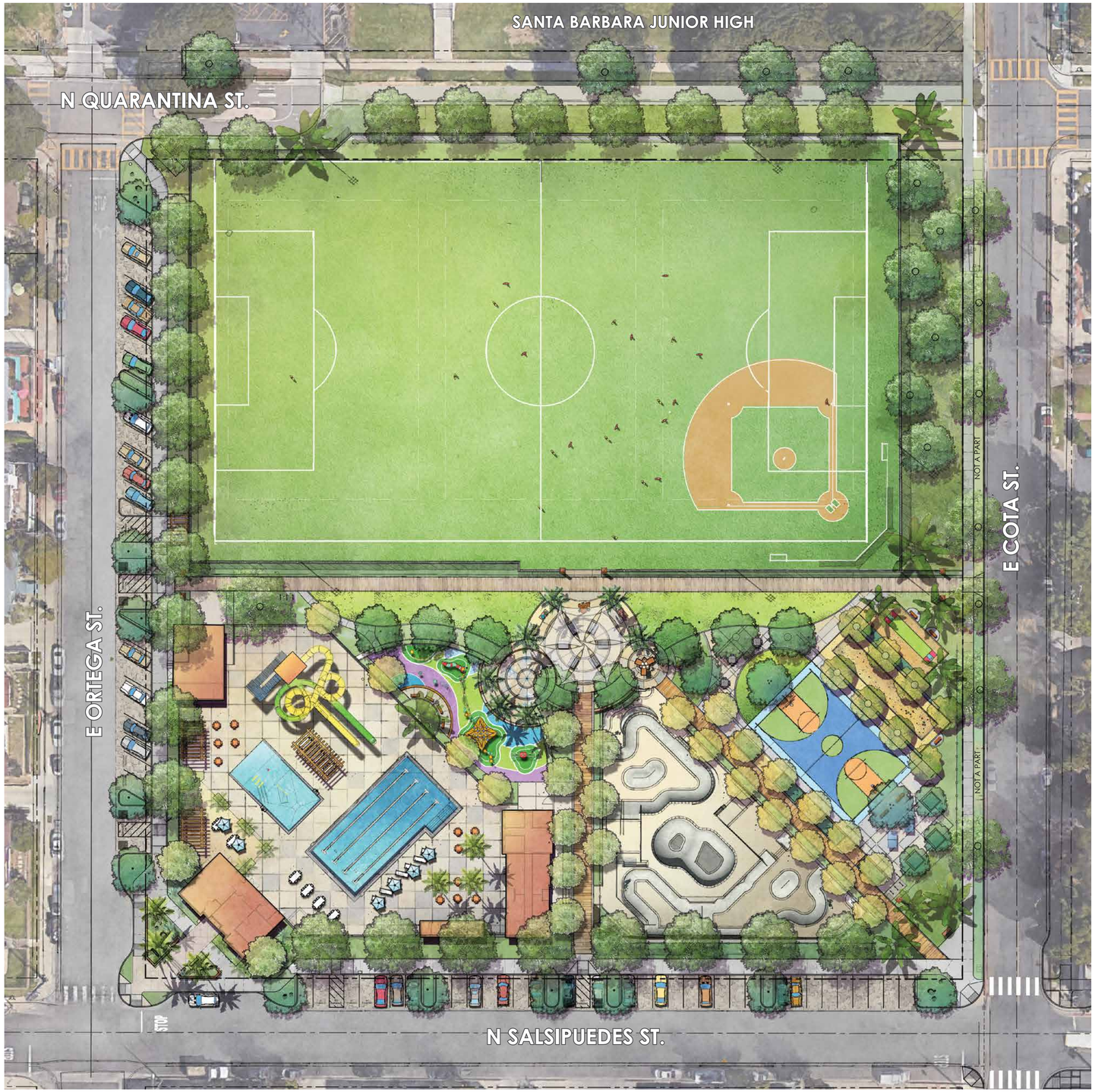
TRASH RECEPTACLE
STANDARD RECEPTACLE TO BE
PROVIDED BY PARKS AND RECREATION,
IN COORDINATION WITH PUBLIC WORKS.
'INDUSTRIAL' EXAMPLE IMAGE SHOWN PER CITY
OF SANTA BARBARA'S MASTER CONTAINER LIST



CONCRETE WITH SCORING

ORTEGA PARK
SITE FURNISHINGS AND MATERIALS

#1144-03-RC19
JULY 2020



*SEE EXISTING CONDITIONS AND DEMO PLAN FOR EXISTING TREES TO BE REMOVED OR PROTECTED

PROPOSED PLANT PALETTE

SHADE TREES (24-36" BOX) QTY 47

SUCH AS:

CINNAMOMUM CAMPHORA	CAMPHOR TREE
PLATANUS RACEMOSA	MEXICAN SYCAMORE
KOELREUTERIA BIPINNATA	CHINESE FLAME TREE
ZELKOVA SERRATA `VILLAGE GREEN`	'VILLAGE GREEN' ZELKOVA
GINGKO BILOBA 'AUTMN GOLD'	MAIDENHAIR

STREET TREES (36" BOX) QTY 12

* PINUS CANARIENSIS	CANARY ISLAND PINE (SALSIPUEDES ST.)
+ ZELKOVA SERRATA `HALKA`	SAWLEAF ZELKOVA (SALSIPUEDES ST.)
* STENOCARPUS SINUATUS	FIREWHEEL TREE (E. ORTEGA ST.)
+ GINGKO BILOBA 'AUTMN GOLD'	MAIDENHAIR
+ KOELREUTERIA BIPINNATA	CHINESE FLAME TREE

*** PER CITY OF SANTA BARBARA STREET TREE DESIGNATION & STREET TREE MASTER PLAN**
+ INDICATES SPECIES IS UNDER REVIEW FOR N. SALSIPUDEDES ST. CO-DESIGNATION (PRC)

ACCENT TREES (24" BOX) QTY 39

SUCH AS:

CASSIA LEPTOPHYLLA	GOLDEN MEDALLION TREE
BRAHEA ARMATA	MEXICAN BLUE PALM
JUBAEA CHILENSIS	CHILEAN WINE PALM
LAGERSTROEMIA INDICA	CRAPE MYRTLE
OLEA EUROPAEA `MAJESTIC BEAUTY` TM	MAJESTIC BEAUTY FRUITLESS OLIVE
TABEBOUIA IMPETIGINOSA	PINK TRUMPET TREE

FOCAL AREA/ ENTRY TREES (48" BOX) QTY 10

SUCH AS:

ARCHONTOPHOENIX CUNNINGHAMIANA	MULTI-TRUNK KING PALM
CEIBA SPECIOSA	FLOSS SILK TREE
PHOENIX CANARIENSIS	CANARY ISLAND DATE PALM
JACARANDA MIMOSIFOLIA	JACARANDA MULTI-TRUNK

SHRUBS, GRASSES, AND GROUNDCOVERS (1, 5, 15 GAL) QTY 1,672

34,209 SF (ALL LOW WATER USING)

SUCH AS:

ACACIA COGNATA `COUSIN ITT`	RIVER WATTLE
AEONIUM URBICUM	DINNER PLATE AEONIUM
AGAVE ATTENUATA `NOVA`	BLUE CLONE
AGAVE VILMORINIANA	OCTOPUS AGAVE
AGAVE X `BLUE GLOW`	BLUE GLOW AGAVE
ALOE SPP.	ALOE
ALYOGYNE HUEGELII `SANTA CRUZ`	BLUE HIBISCUS
ANIGOZANTHOS X `BUSH BABY`	BUSH BABY KANGAROO PAW
BACCHARIS X 'PIGEON POINT'	COYOTE BRUSH
BULBINE FRUTESCENS	STALKED BULBINE
CAESALPINIA SPP.	DESERT BIRD OF PARADISE
CEANOTHUS SPP.	CALIFORNIA LILAC
CERCIS 'RISING SUN'	GOLDEN REDBUD
-CAREX DIVULSA	BERKELEY SEDGE
CEANOTHUS GRISEUS HORZIONTALIS	CARMEL CREEPER
CISTUS PULVERULENTUS `SUNSET`	ROCKROSE
-CHONDROPETALUM TECTORUM	CAPE RUSH
DIETES GRANDIFLORA	WILD IRIS
ECHEVERIA X `AFTERGLOW`	AFTERGLOW ECHEVERIA
FURCREA FOETIDA MEDIOPICTA	GIANT CABUYA
-KNIPHOFIA UVARIA `MALIBU YELLOW`	MALIBU YELLOW TORCH LILY
LEUCADENDRON X `PERRY`S RED`	CONEBUSH
LEUCADENDRON X `SAFARI GOLD STRIKE`	YELLOW CONEBUSH
LEUCOSPERMUM CORDIFOLIUM	PINCUSHION
-LEYMUS CONDENSATUS `CANYON PRINCE`	NATIVE BLUE RYE
-LOMANDRA HYSTRIX `TROPIC BELLE`	TROPIC BELLE MAT RUSH
-LOMANDRA LONGIFOLIA `BREEZE`	DWARF MAT RUSH
MUHLENBERGIA SPP.	MUHLY GRASS
OLEA EUROPAEA `LITTLE OLLIE`	LITTLE OLLIE OLIVE
PENNISETUM SPATHIOLATUM	RYE PUFFS
PHORMIUM X `YELLOW WAVE`	YELLOW WAVE FLAX
SALVIA LEUCANTHA `SANTA BARBARA`	MEXICAN BUSH SAGE
SALVIA X `BEE`S BLISS`	BEE`S BLISS SAGE
SENECIO MANDRALISCAE	SENECIO
SEDUM SPP.	SEDUM
-SESLERIA AUTUMNALIS	AUTUMN MOOR GRASS
STRELITZIA SPP.	BIRD OF PARADISE

- INDICATES SPECIES SUITABLE FOR LID AREAS

EXISTING TREES TO REMAIN QTY 18

SEE EXISTING CONDITIONS AND DEMOLITION PLAN SHEET D-1

EXISTING TREES TO BE REMOVED QTY 40

SEE EXISTING CONDITIONS AND DEMOLITION PLAN SHEET D-1

TURF (NATURAL) QTY 5,697 SF

EXISTING TURF TO REMAIN QTY 7,640 SF

(LOCATED ON PARK PROPERTY EAST OF SOCCER FIELD ADJACENT TO E. COTA STREET. EXCLUDES EXISTING PARKWAYS ALONG E. COTA OUTSIDE OF IMPROVEMENT AREAS)

TURF CLASSIFIED AS SPECIAL LANDSCAPE AREA (SLA) FOR RECREATIONAL PURPOSES SEE MWELO CALCULATIONS AND NOTES, THIS SHEET.

IRRIGATION COMPLIANCE & DESIGN CRITERIA

THE PLANT PALETTE IS COMPRISED OF SPECIES KNOWN TO THRIVE IN THE LOCAL CLIMATE AND SOIL CONDITIONS. THE PROPOSED PLANT MATERIAL (OUTSIDE OF AREAS ALLCOATED FOR RECREATIONAL USE) WILL REQUIRE LOW TO VERY LOW WATER ONCE ESTABLISHED. THIS PLANT PALETTE COUPLED WITH THE IRRIGATION SYSTEM DESCRIBED BELOW HAS BEEN DESIGNED TO MEET OR EXCEED THE STATE AND LOCAL STANDARDS FOR WATER CONSERVATION BASED ON THE MODEL WATER EFFICIENT LANDSCAPE ORDINANCE.

A WEATHER SENSING, 'SMART CONTROLLER' WILL BE USED TO MONITOR THE PROVISION OF IRRIGATION WATER AND MANAGE DAILY WATER CONSUMPTION TO THE MINIMUM REQUIREMENTS FOR EACH HYDROZONE. ALL TREES, SHRUBS, AND GROUNDCOVER AREAS WILL BE IRRIGATED ON SEPARATE HYDROZONES SO THAT ONCE ESTABLISHED, WATER CAN BE REGULATED IN A MORE EFFICIENT MANNER. TREES WILL BE IRRIGATED BY BUBBLERS. ALL ORNAMENTAL PLANTING WILL RECEIVE DRIP IRRIGATION OR OTHER HIGHLY EFFICIENT IRRIGATION. AREAS TO RECEIVE DRIP IRRIGATION SHALL EXCEED THE REQUIRED 25% PER CITY OF SANTA BARBARA'S LANDSCAPE DESIGN STANDARDS FOR WATER CONSERVATION.

MWELO CALCULATIONS

TOTAL DEVELOPMENT AREA (ON-SITE & OFF-SITE): 247,047 SF
SEE TITLE SHEET L-1 FOR ADDITIONAL AREA CALCULATIONS
TOTAL ON-SITE LANDSCAPE AREA: 43,437 SF
TOTAL ON-SITE SYNTHETIC TURF: 93,452 SF
TOTAL ON-SITE HARDSCAPE AREA: 60,114 SF
TOTAL OFF-SITE LANDSCAPE AREA: 4,109 SF

TOTAL PERVIOUS AREA: 144,902 SF
TOTAL IMPERVIOUS AREA: 60,114 SF

AREAS WITHIN THE PROJECT SITE THAT ARE TO BE USED FOR RECREATIONAL PURPOSES AND ALL AREAS THAT WILL BE IRRIGATED WITH RECLAIMED WATER ARE CLASSIFIED AS SPECIAL LANDSCAPE AREAS. SPECIAL LANDSCAPE AREAS HAVE BEEN INCORPORATED INTO THE FOLLOWING CALCULATIONS AND ARE REFLECTED IN THE MAXIMUM APPLIED WATER ALLOWANCE PER CALIFORNIA CODE OF REGULATIONS AND THE MODEL WATER EFFICIENT LANDSCAPE ORDINANCE.

ESTIMATED TOTAL WATER USE: 1,143,438 GAL / YR.
MAXIMUM APPLIED WATER ALLOWANCE: 1,143,438 GAL / YR.

AVERAGE EXISTING WATER USE FOR ORTEGA PARK IRRIGATION IS 1,567,920 GAL / YR.
SEE PRELIMINARY SEWER AND WATER DEMAND STUDIES ISSUED TO WATER RESOURCES DEPT AS PART OF DART REPONSES.

Source:
California Code of Regulations
Title 23. Waters
Division 2. Department of Water Resources
Chapter 2.7. Model Water Efficient Landscape Ordinance

NOTE: PUBLISHED AUTHORITATIVE SOURCES FOR WATER USE CLASSIFICATIONS OF ALL PROPOSED PLANT SPECIES ON THIS SHEET INCLUDE THE CAL POLY URBAN FOREST ECOSYSTEMS INSTITUTE, SUNSET WESTERN GARDENS, US DEPARTMENT OF AGRICULTURE, AND SANTA BARBARA'S ADDENDUM TO WUCOLS.

Parks & Recreation | rrm design group | Wormhoudt INC | AQUATIC DESIGN GROUP

ORTEGA PARK
LANDSCAPE PLAN

0' 15' 30' 60' 90'
SCALE 1" = 30'

NORTH

#1144-03-RC19
JULY 2020

L-9


JUBEA CHILENSIS


STENOCARPUS SINUATUS


ARCHONTOPHOENIX CUNNINGHAMIANA


ZELKOVA SERRATA 'HALKA'


CASSIA LEPTOPHYLLA


FURCREA FOETIDA 'MEDIOPICTA'


SENECIO SERPENS

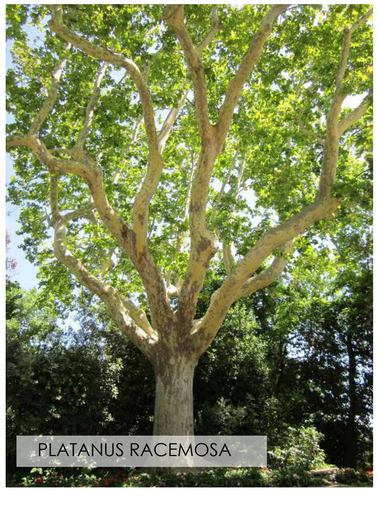

LEUCADENDRON 'SAFARI GOLD STRIKE'


DIETES GRANDIFLORA


ANIGOZANTHOS SPP.


OLEA EUROPAENA 'LITTLE OLLIE'


KNIPHOFIA UVARIA


PLATANUS RACEMOSA


LOMANDRA LONGIFOLIA


VERBENA X BALKENDALE


AGAVE 'BLUE GLOW' & AGAVE ATTENUATA


DECOMPOSED GRANITE


COBBLE MULCH

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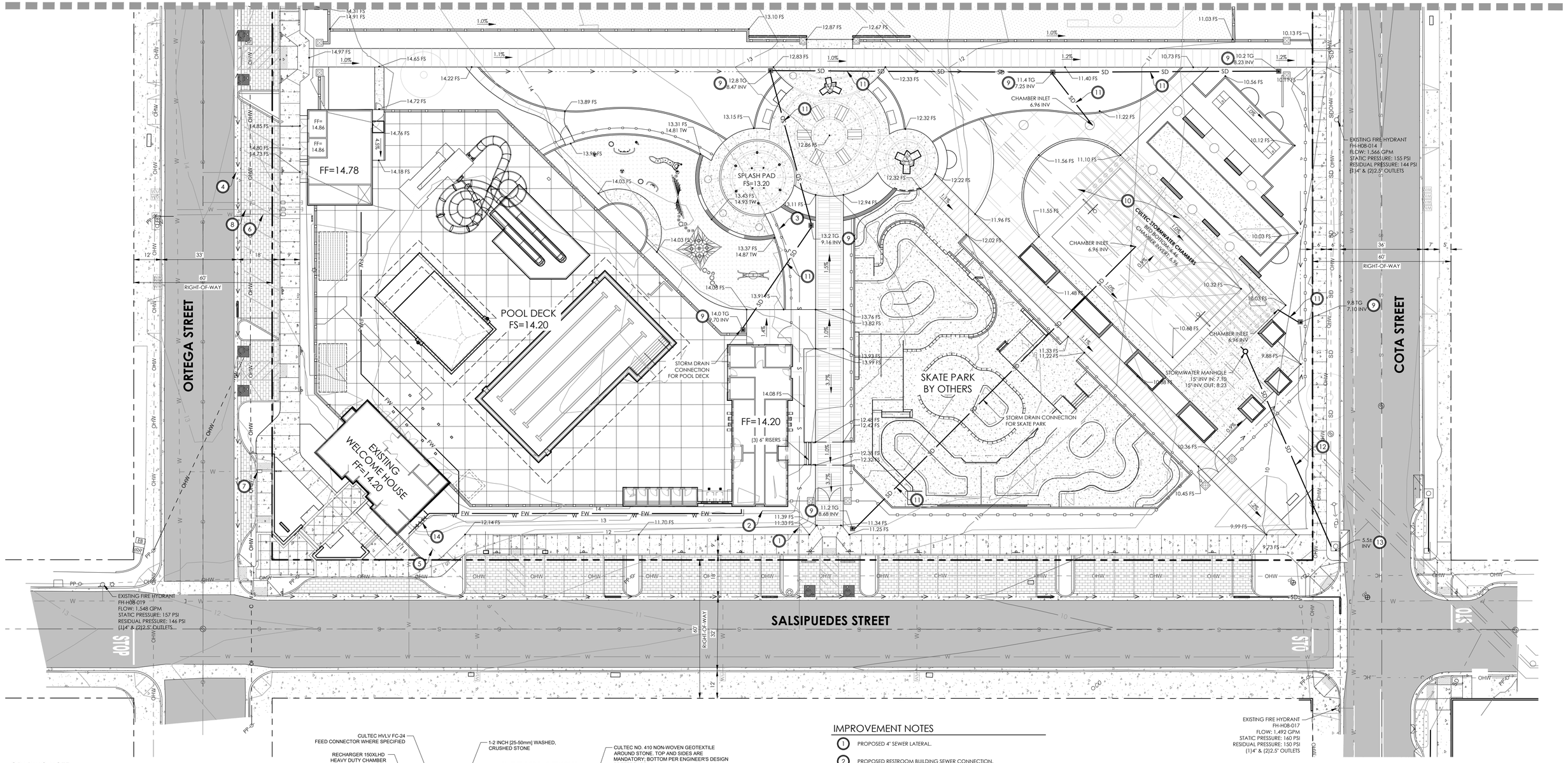
Wormhoudt INC

AQUATIC DESIGN GROUP

ORTEGA PARK
PLANT PALETTE

#1144-03-RC19
JULY 2020

MATCHLINE SEE SHEET C2



GRADING NOTE:

SITE GRADING SHALL CONFORM TO THE RECOMMENDATIONS MADE BY THE GEOTECHNICAL ENGINEER IN THE APPROVED SOILS REPORT.

EARTH QUANTITIES:

AREA OF DISTURBANCE 5.5 AC±

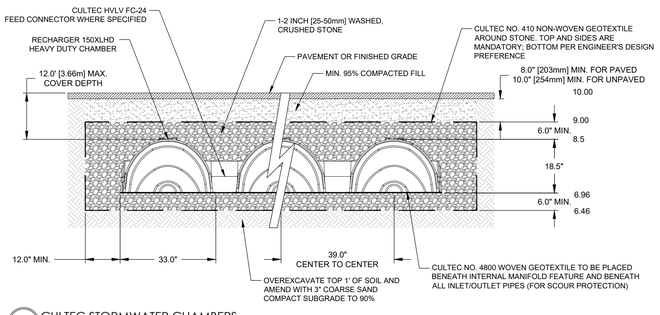
RAW CUT: 10,600 CY
RAW FILL: 480 CY
NET: 10,120 CY CUT

SOIL REMOVAL BELOW STORMWATER INFILTRATION AREAS PER SOIL MANAGEMENT PLAN*
EXPORT: 1,950 CY
IMPORT: 1,950 CY

QUANTITY ESTIMATES ON THESE PLANS ARE TO BE USED FOR PERMIT PURPOSES ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ACTUAL QUANTITIES FOR THE PURPOSE OF CONSTRUCTION.

THE RAW EARTHWORK QUANTITIES SHOWN HEREON REPRESENT THE ESTIMATED VOLUMETRIC DIFFERENCE BETWEEN THE PROPOSED ROUGH GRADE AND THE LIMITED TOPOGRAPHIC EXISTING GRADES. THESE ESTIMATES DO NOT MAKE CONSIDERATIONS FOR LOSSES OR BULKING DUE TO: SHRINKAGE, SOIL AMENDMENTS, STABILIZATION, CONSTRUCTION TECHNIQUE, FOOTING & TRENCHING SPOILS, ETC. THESE, IN ADDITION TO ACTUAL FIELD CONDITIONS, CONSTRUCTION TECHNIQUE AND THE FINAL RECOMMENDATIONS OF THE SOILS ENGINEER MAY SIGNIFICANTLY EFFECT THE FINAL IMPORT/EXPORT QUANTITIES.

*CORRECTIVE ACTION PLAN/SOIL MANAGEMENT PLAN PREPARED BY RINCON CONSULTANTS RECOMMENDS REMOVAL OF CONTAMINATED SOILS BELOW INFILTRATION AREAS TO GROUNDWATER DEPTH WITH A LATERAL THREE-FOOT BUFFER. CALCULATIONS ASSUME GROUNDWATER DEPTH IS FIVE FEET BELOW EXISTING GRADE.



A CULTEC STORMWATER CHAMBERS
SCALE: N.T.S.

IMPROVEMENT NOTES

1. PROPOSED 4" SEWER LATERAL.
2. PROPOSED RESTROOM BUILDING SEWER CONNECTION.
3. PROPOSED SPLASH PAD SEWER CONNECTION.
4. PROPOSED DEDICATED 4" SEWER LATERAL FOR POOL FACILITIES.
5. EXISTING SEWER LATERAL SERVING WELCOME HOUSE TO REMAIN.
6. EXISTING IRRIGATION METER AND BACKFLOW DEVICE TO BE UPSIZED TO 3" METER AND LINE FOR IRRIGATION USE (SYNTHETIC TURF MAINTENANCE).
7. EXISTING WATER METER AND BACKFLOW TO REMAIN FOR DOMESTIC USE (WELCOME HOUSE AND RESTROOM BUILDING).
8. PROPOSED 3" WATER METER AND SERVICE FOR POOL EQUIPMENT.
9. PROPOSED STORM DRAIN CATCH BASIN.
10. PROPOSED UNDERGROUND STORMWATER CHAMBERS (CULTEC RECHARGER 150XLHD- 80 CHAMBERS TOTAL). SEE DETAIL 'A' THIS SHEET.
11. PROPOSED 8" STORM DRAIN AT 1.0% MINIMUM SLOPE.
12. PROPOSED 15" STORM DRAIN AT 1.0% MINIMUM SLOPE.
13. PROPOSED 15" STORM DRAIN CONNECTION TO EXISTING CURB INLET.
14. PROPOSED FIRE WATER LINE AND BACKFLOW PREVENTER.

LEGEND

- PROPOSED SYNTHETIC TURF
- PROPOSED BIO-RETENTION AREA
- PROPOSED CONCRETE
- PROPERTY LINE
- 821 — EXISTING CONTOUR
- 821 — PROPOSED CONTOUR
- PROPOSED FLOWLINE
- SD — PROPOSED STORM DRAIN
- W — EXISTING WATER MAIN
- S — EXISTING SANITARY SEWER MAIN
- SD — EXISTING STORM DRAIN
- PROPOSED GRADE BREAK

0 20 40 60 feet
1"=20'

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ORTEGA PARK
PRELIMINARY GRADING AND UTILITY PLAN (SOUTH)

#1144-03-RC19
JULY 2020

C-1

SANTA BARBARA JUNIOR HIGH SCHOOL
721 E COTA STREET

QUARANTINA STREET

ORTEGA STREET

COTA STREET

RIGHT-OF-WAY

EXISTING FIRE HYDRANT
FH-H08-018
FLOW: 1,253 GPM
STATIC PRESSURE: 144 PSI
RESIDUAL PRESSURE: 106 PSI
(1)4" & (1)2.5" OUTLETS

EXISTING FIRE HYDRANT
FH-H08-013
FLOW: 1,550 GPM
STATIC PRESSURE: 155 PSI
RESIDUAL PRESSURE: 147 PSI
(1)4" & (2)2.5" OUTLETS

COLLECTION PIPE FOR SYNTHETIC TURF SUBSURFACE DRAINAGE

2 - EXISTING 54" RCP STORM DRAINS

(12.10TC)
(11.62FL)

(12.07RIM)
(5.41 INV)

EXISTING 8" PVC

12.01 FS

(11.80TG)
(7.25 INV)

(11.24TG)
(7.85 INV)

(11.25TG)
(7.95 INV)

10.30TG
(7.00 INV)

10.65 FS

10.48 FS

3.25±
INV

12.13 FS

12.92 FS

13.26 FS

13.16 FS

10.76 FS

14.23 FS

14.31 FS

14.91 FS

13.10 FS

12.87 FS

12.67 FS

11.03 FS

10.13 FS

0.5%

1.0%

0.6%

MATCHLINE SEE SHEET C1

SYTHETIC TURF AND INFILL MATERIAL

8.5"

4"

12" ADS ADVANEDGE PIPE
DRAIN ROCK- CRUSHED,WASHED AND OPEN-GRADED
OVEREXCAVATE TOP 1' OF SOIL AND AMEND WITH 3" COARSE SAND
COMPACT SUBGRADE TO 90%

A SYTHETIC TURF SECTION
SCALE: N.T.S.

IMPROVEMENT NOTES

1. CONNECT TO EXISTING CATCH BASIN.
2. PROPOSED SYNTHETIC TURF AND SUBSURFACE DRAINAGE. SEE DETAIL 'A' THIS SHEET.
3. EXISTING 2" RECYCLED WATER METER TO BE USED FOR IRRIGATION.

LEGEND

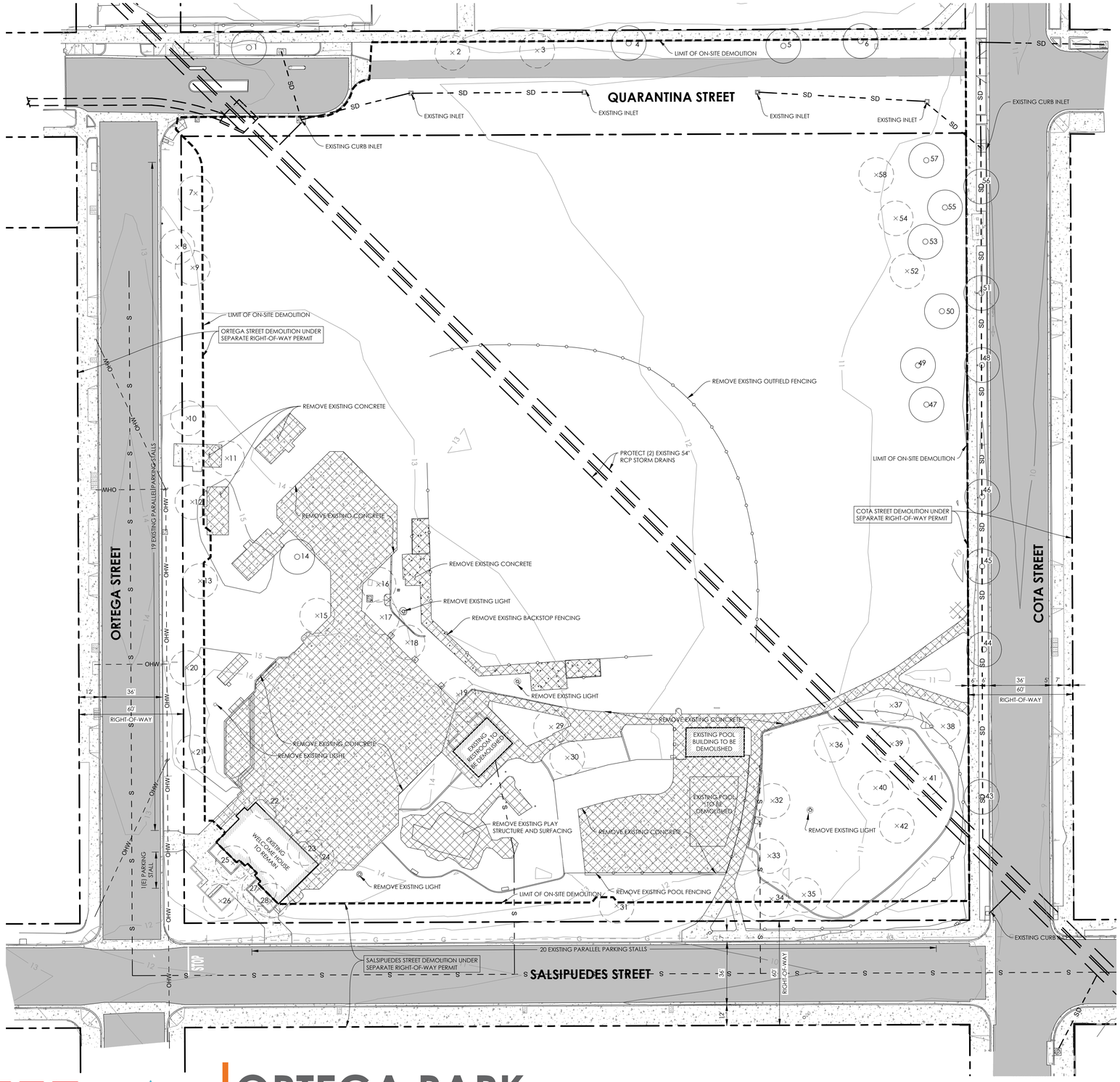
- PROPOSED SYNTHETIC TURF
- PROPOSED BIO-RETENTION AREA
- PROPOSED CONCRETE
- PROPERTY LINE
- 821 EXISTING CONTOUR
- 821 PROPOSED CONTOUR
- PROPOSED FLOWLINE
- SD PROPOSED STORM DRAIN
- W EXISTING WATER MAIN
- S EXISTING SANITARY SEWER MAIN
- SD EXISTING STORM DRAIN
- PROPOSED GRADE BREAK

0 20 40 60 feet
1"=20'

ORTEGA PARK
PRELIMINARY GRADING AND UTILITY PLAN (NORTH)

#1144-03-RC19
JULY 2020

C-2



LEGEND

	QUANTITY
PROPERTY LINE	
LIMIT OF ON-SITE DEMOLTION	
EXISTING AC PAVING TO REMAIN	
EXISTING CONCRETE PAVING TO REMAIN	
EXISTING CONCRETE PAVING TO BE REMOVED	30,843 SF
EXISTING BUILDING TO REMAIN	1,604 SF
EXISTING BUILDING TO BE DEMOLISHED	1,134 SF
EXISTING CONTOUR	
EXISTING STORM DRAIN	
EXISTING TREE TO REMAIN	18
EXISTING TREE TO BE REMOVED	40

EXISTING TREE DISPOSITION

ID #	SCIENTIFIC NAME	COMMON NAME	DBH (in)	ACTION
1	*PINUS PINEA*	ITALIAN STONE PINE	48	PROTECT
2	*PINUS PINEA*	ITALIAN STONE PINE	8	REMOVE
3	*PINUS PINEA*	ITALIAN STONE PINE	8	REMOVE
4	*PINUS PINEA*	ITALIAN STONE PINE	40	PROTECT
5	*PINUS PINEA*	ITALIAN STONE PINE	48	PROTECT
6	*PINUS PINEA*	ITALIAN STONE PINE	36	PROTECT
7	*MAGNOLIA GRANDIFLORA*	SOUTHERN MAGNOLIA	6	REMOVE
8	*PINUS CANARIENSIS*	CANARY ISLAND PINE	8	REMOVE
9	*PINUS CANARIENSIS*	CANARY ISLAND PINE	10	REMOVE
10	*PINUS ELDARICA*	AFGHAN PINE	24	REMOVE
11	*PINUS PATULA*	JELECOTE PINE	14	REMOVE
12	*PINUS ELDARICA*	AFGHAN PINE	18	REMOVE
13	*PINUS PATULA*	JELECOTE PINE	18	REMOVE
14	*PINUS ELDARICA*	AFGHAN PINE	36	PROTECT
15	*PYRUS KAWAKAMII*	EVERGREEN PEAR	18	REMOVE
16	*PYRUS KAWAKAMII*	EVERGREEN PEAR	18	REMOVE
17	*PYRUS KAWAKAMII*	EVERGREEN PEAR	12	REMOVE
18	*PYRUS KAWAKAMII*	EVERGREEN PEAR	14	REMOVE
19	*PYRUS KAWAKAMII*	EVERGREEN PEAR	6	REMOVE
20	*PINUS ELDARICA*	AFGHAN PINE	24	REMOVE
21	*PINUS ELDARICA*	AFGHAN PINE	28	REMOVE
22	*PHOENIX ROEBELENII*	PYGMY DATE PALM	(3)-4	REMOVE
23	*PHOENIX ROEBELENII*	PYGMY DATE PALM	3	REMOVE
24	*PHOENIX ROEBELENII*	PYGMY DATE PALM	(3)-6	REMOVE
25	*PHOENIX ROEBELENII*	PYGMY DATE PALM	4	REMOVE
26	*SCHINUS TEREBINTHIFOLIUS*	BRAZILIAN PEPPER	14	REMOVE
27	*PHOENIX ROEBELENII*	PYGMY DATE PALM	4	REMOVE
28	*PHOENIX ROEBELENII*	PYGMY DATE PALM	8	REMOVE
29	*PINUS CANARIENSIS*	CANARY ISLAND PINE	24	REMOVE
30	*PINUS CANARIENSIS*	CANARY ISLAND PINE	24	REMOVE
31	*PINUS ELDARICA*	AFGHAN PINE	26	REMOVE
32	*KOELREUTERIA BIPINNATA*	CHINESE FLAME TREE	8	REMOVE
33	*KOELREUTERIA BIPINNATA*	CHINESE FLAME TREE	8	REMOVE
34	*PINUS ELDARICA*	AFGHAN PINE	20	REMOVE
35	*KOELREUTERIA BIPINNATA*	CHINESE FLAME TREE	12	REMOVE
36	*KOELREUTERIA BIPINNATA*	CHINESE FLAME TREE	16	REMOVE
37	*KOELREUTERIA BIPINNATA*	CHINESE FLAME TREE	18	REMOVE
38	*KOELREUTERIA BIPINNATA*	CHINESE FLAME TREE	18	REMOVE
39	*KOELREUTERIA BIPINNATA*	CHINESE FLAME TREE	6	REMOVE
40	*KOELREUTERIA BIPINNATA*	CHINESE FLAME TREE	16	REMOVE
41	*KOELREUTERIA BIPINNATA*	CHINESE FLAME TREE	8	REMOVE
42	*KOELREUTERIA BIPINNATA*	CHINESE FLAME TREE	12	REMOVE
43	*KOELREUTERIA BIPINNATA*	CHINESE FLAME TREE	18	PROTECT
44	*KOELREUTERIA BIPINNATA*	CHINESE FLAME TREE	18	PROTECT
45	*KOELREUTERIA BIPINNATA*	CHINESE FLAME TREE	18	PROTECT
46	*KOELREUTERIA BIPINNATA*	CHINESE FLAME TREE	18	PROTECT
47	*KOELREUTERIA BIPINNATA*	LONDON PLANE TREE	18	PROTECT
48	*KOELREUTERIA BIPINNATA*	CHINESE FLAME TREE	18	PROTECT
49	*PLATANUS X HISPANICA*	LONDON PLANE TREE	36	PROTECT
50	*LIQUIDAMBAR STYRACIFLUA*	AMERICAN SWEETGUM	18	PROTECT
51	*KOELREUTERIA BIPINNATA*	CHINESE FLAME TREE	18	PROTECT
52	*PINUS ELDARICA*	AFGHAN PINE	24	REMOVE
53	*LIQUIDAMBAR STYRACIFLUA*	AMERICAN SWEETGUM	12	PROTECT
54	*PINUS ELDARICA*	AFGHAN PINE	24	REMOVE
55	*LIQUIDAMBAR STYRACIFLUA*	AMERICAN SWEETGUM	12	PROTECT
56	*KOELREUTERIA BIPINNATA*	CHINESE FLAME TREE	15	PROTECT
57	*PINUS ELDARICA*	AFGHAN PINE	18	PROTECT
58	*LIQUIDAMBAR STYRACIFLUA*	AMERICAN SWEETGUM	12	REMOVE

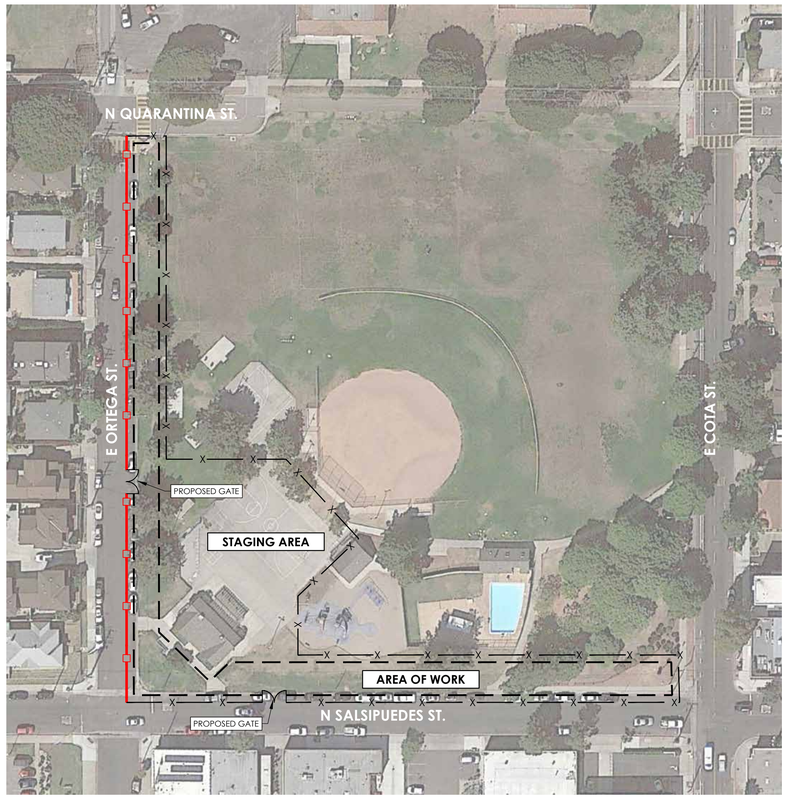
0 30 60 90 feet
1"=30'

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ORTEGA PARK
EXISTING CONDITIONS AND DEMOLITION PLAN

#1144-03-RC19
JULY 2020

D-1



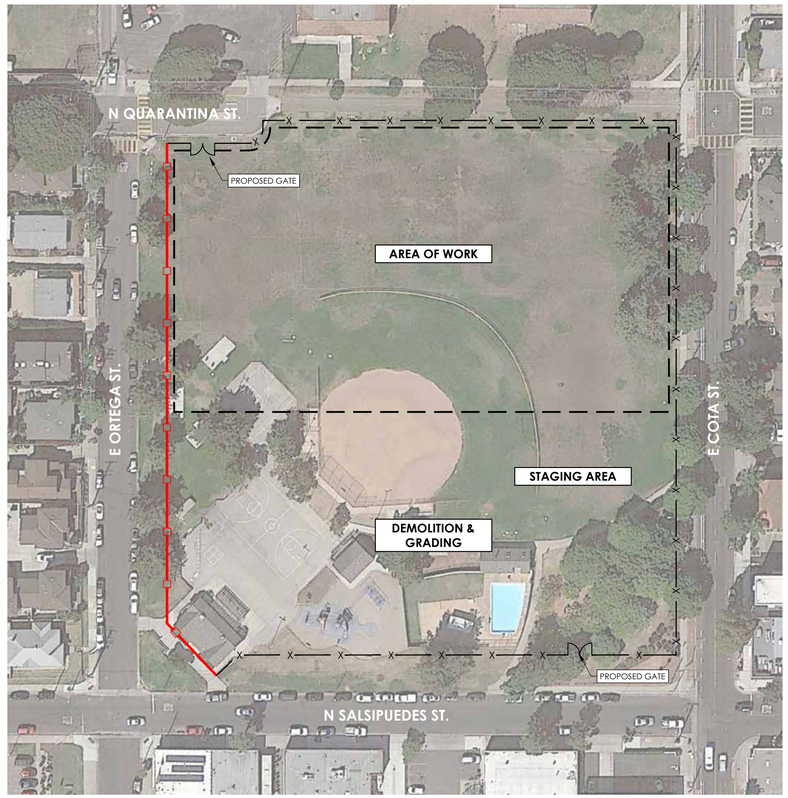
PHASE ONE
RIGHT-OF-WAY IMPROVEMENTS

DESCRIPTION: INSTALL PARKING AND SIDEWALKS ONLY. THESE IMPROVEMENTS CAN BE MADE WHILE STILL KEEPING THE EXISTING PARK AMENITIES OPERATING. IT WILL ALSO PROVIDE ADDITIONAL PARKING AND IMPROVE ACCESSIBILITY TO THE PARK.

CONSTRUCTION PARKING: DURING CONSTRUCTION THE BASKETBALL COURT CAN BE FENCED AND USED FOR CONSTRUCTION PARKING, JOB TRAILER, AND PORTABLE TOILETS

ESTIMATED CONSTRUCTION SCHEDULE: 4 MONTHS

NOISE REDUCTION MEASURES DURING CONSTRUCTION: NOISE GENERATING ACTIVITY WOULD BE LIMITED TO BETWEEN 8 AM AND 5 PM ON WEEK DAYS. CONSTRUCTION OF THE NEW PARKING AND SIDEWALK ALONG ORTEGA STREET WILL GENERATE NOISE CLOSEST TO RESIDENTIAL HOUSES. TO MITIGATE THE TEMPORARY CONSTRUCTION NOISE, A 6-FOOT-TALL CONSTRUCTION FENCE WITH SOUND REDUCTION BLANKETS OR PLYWOOD WILL BE INSTALLED ALONG THE 480 FOOT LENGTH OF PROPERTY ALONG ORTEGA STREET.



PHASE TWO
SPORTS FIELD, DEMOLITION & GRADING

DESCRIPTION: THIS PHASE WILL FOCUS ON ALL DEMOLITION AND GRADING OF THE WHOLE SITE. THE GRADING SHALL TAKE PLACE WHEN SCHOOL IS NOT IN SESSION, TO ALLOW FOR THE REMOVAL OF CONTAMINATED SOIL. AFTER THE SOILS IS REMOVED AND ROUGH GRADING IS COMPLETE, THE MULTI-SPORT SYNTHETIC TURF FIELD, FENCING, LIGHTING, AND HARDSCAPE WILL BE COMPLETED. PRIOR TO THE START OF PHASE 3, THE REMAINING SOUTH HALF OF THE PROPERTY WOULD BE SEEDED WITH GRASS TO MINIMIZE EROSION.

CONSTRUCTION PARKING: PARKING AND STAGING WILL TAKE PLACE ON THE SOUTHERN HALF OF THE PARCEL.

ESTIMATED CONSTRUCTION TIME: 8 MONTH (NOISE GENERATING ACTIVITY WOULD BE LIMITED TO BETWEEN 8 AM AND 5 PM ON WEEK DAYS) REMOVAL OF ALL CONTAMINATED SOILS WILL TAKE PLACE DURING THE SUMMER, WHEN THE ADJACENT JUNIOR HIGH IS CLOSED.

NOISE REDUCTION MEASURES DURING CONSTRUCTION: (NOISE GENERATING ACTIVITY WOULD BE LIMITED TO BETWEEN 8 AM AND 5 PM ON WEEK DAYS). A 6-FOOT-TALL CONSTRUCTION FENCE WITH SOUND REDUCTION BLANKETS OR PLYWOOD WILL BE INSTALLED ALONG THE 480 FOOT LENGTH OF PROPERTY ALONG ORTEGA STREET.



PHASE THREE
POOL FACILITY, BUILDINGS, SKATE PARK & COURTS

DESCRIPTION: THIS FINAL PHASE WILL FIRST FOCUS ON THE CORNER AREA AT ORTEGA AND SALSIPUEDES STREET. THIS INCLUDES THE RENOVATION OF THE WELCOME HOUSE, CONSTRUCTION OF THE POOL, AND ALL OTHER BUILDINGS. THE SKATE PARK WITH FOLLOW, ALONG WITH THE PLAYGROUND. THE BASKETBALL, BOCCE BALL, AND CORNHOLE COURT WOULD BE CONSTRUCTED LAST TO ALLOW FOR SPACE FOR THE PORTABLE TOILETS, JOB TRAILER, AND CONSTRUCTION STAGING AREA.

CONSTRUCTION PARKING: DURING CONSTRUCTION THE PROPERTY CORNER AT E. COTA AND SALSIPUEDES STREET WILL BE DEVELOPED LAST TO PRESERVE AREA FOR CONSTRUCTION PARKING AND STAGING.

ESTIMATED CONSTRUCTION TIME: 14 MONTHS (NOISE GENERATING ACTIVITY WOULD BE LIMITED TO BETWEEN 8 AM AND 5 PM ON WEEK DAYS)

NOISE REDUCTION MEASURES DURING CONSTRUCTION: (NOISE GENERATING ACTIVITY WOULD BE LIMITED TO BETWEEN 8 AM AND 5 PM ON WEEK DAYS). A 6-FOOT-TALL CONSTRUCTION FENCE WITH SOUND REDUCTION BLANKETS OR PLYWOOD WILL BE INSTALLED ALONG THE AREA OF WORK ALONG ORTEGA STREET.

LEGEND

- AREA OF WORK/IMPROVEMENTS
- PROPOSED CONSTRUCTION FENCING
- CONSTRUCTION SOUND ABATEMENT FENCING

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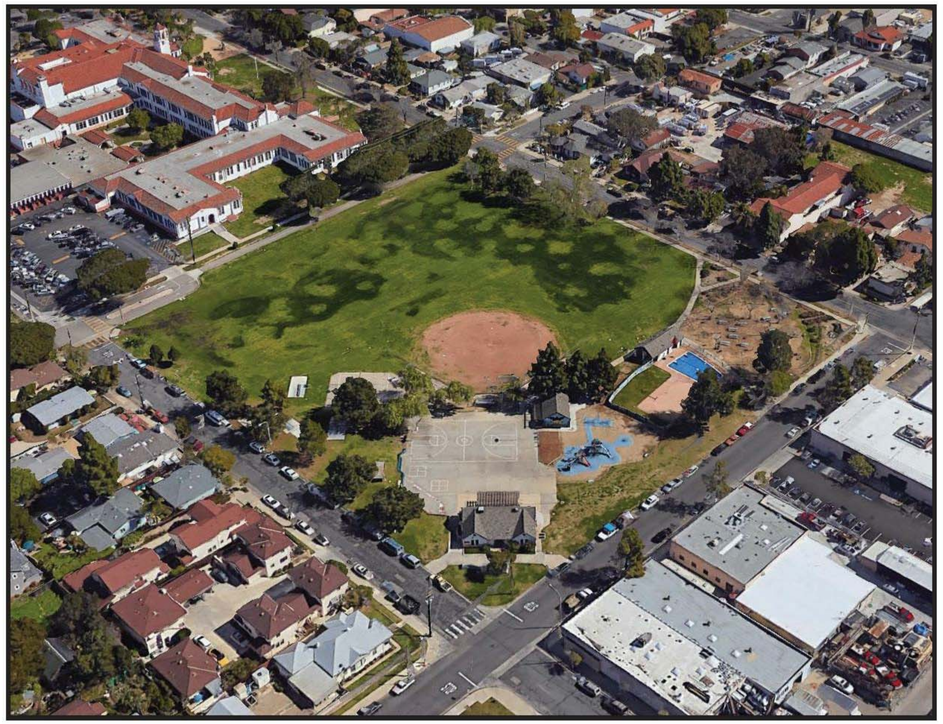
ORTEGA PARK
CONSTRUCTION PHASING PLAN

#1144-03-RC19
JULY 2020

D-2



FRONT VIEW - SALSIPUEDES & ORTEGA



AERIAL VIEW OF PARK

ORTEGA PARK

EXISTING SITE PHOTOS

#1144-03-RC19
JULY 2020

A-1



EXISTING WELCOME HOUSE MAIN ENTRANCE



EXISTING WELCOME HOUSE EAST ENTRANCE

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EXISTING BUILDING PHOTOS

#1144-03-RC19
JULY 2020

A-2



EXISTING WELCOME HOUSE SOUTH ELEVATION



EXISTING WELCOME HOUSE EAST ELEVATION

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EXISTING BUILDING PHOTOS

#1144-03-RC19
JULY 2020

A-3



EXISTING WELCOME HOUSE NORTH ELEVATION



EXISTING WELCOME HOUSE WEST ELEVATION

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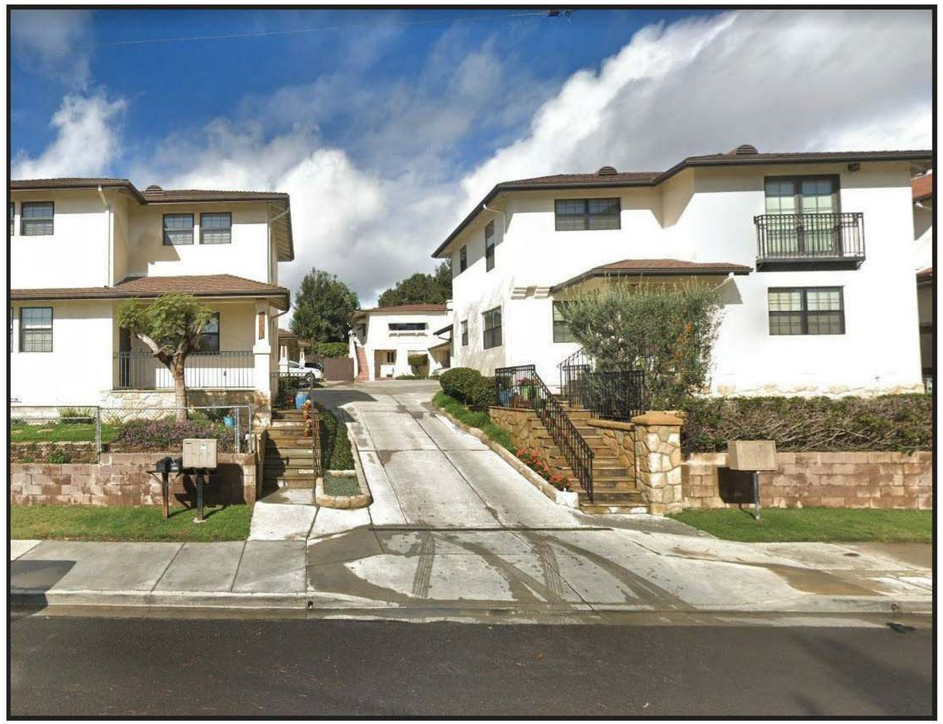
EXISTING BUILDING PHOTOS

#1144-03-RC19
JULY 2020

A-4



SURROUNDING NEIGHBORHOOD - EAST VIEW FROM N. QUARANTINA



SURROUNDING NEIGHBORHOOD - NORTH VIEW FROM ORTEGA

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SURROUNDING NEIGHBORHOOD

#1144-03-RC19
JULY 2020

A-5



SURROUNDING NEIGHBORHOOD - SOUTH VIEW FROM E. COTA



SURROUNDING NEIGHBORHOOD - WEST VIEW FROM N. SALSIPUEDES

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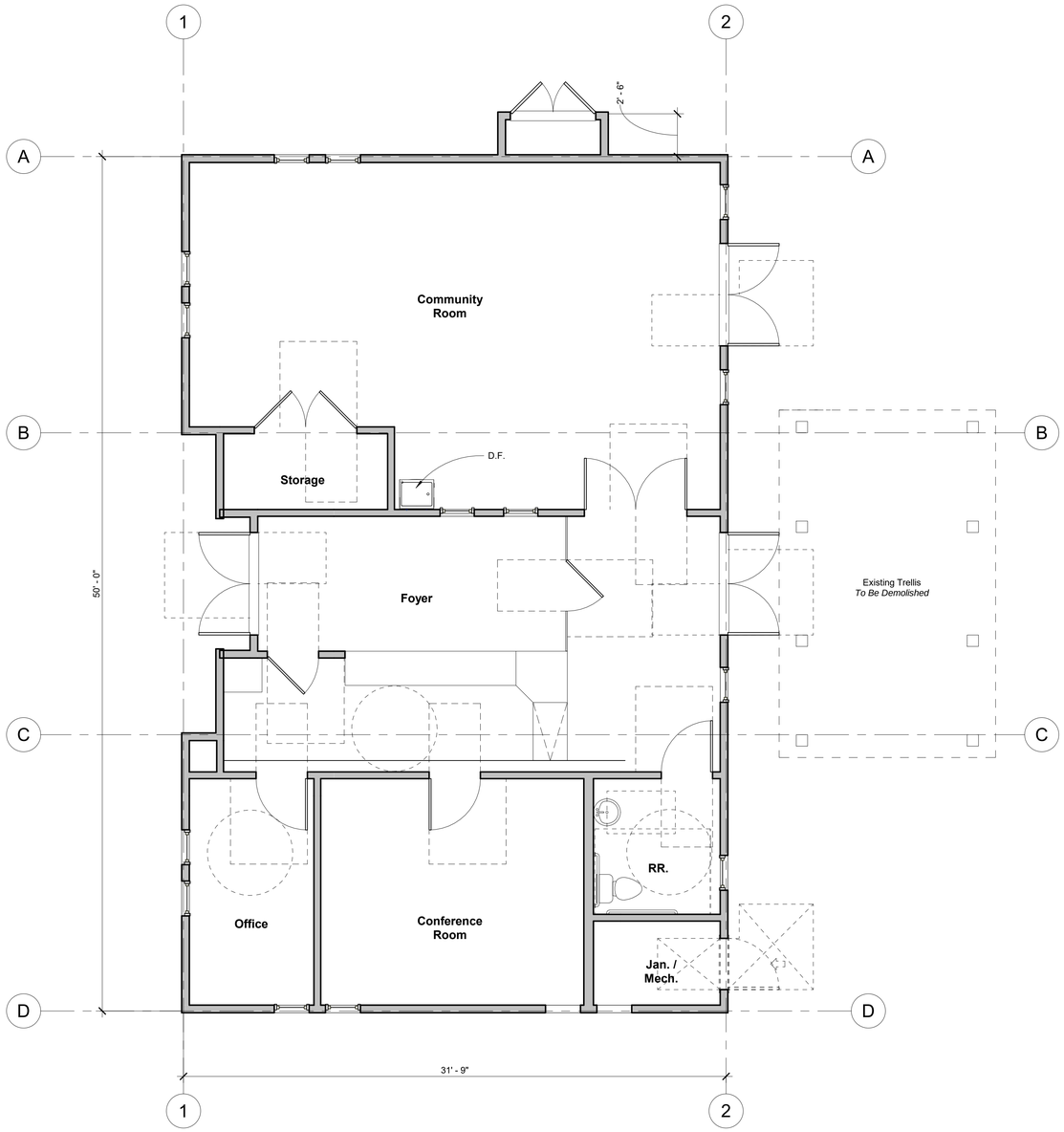
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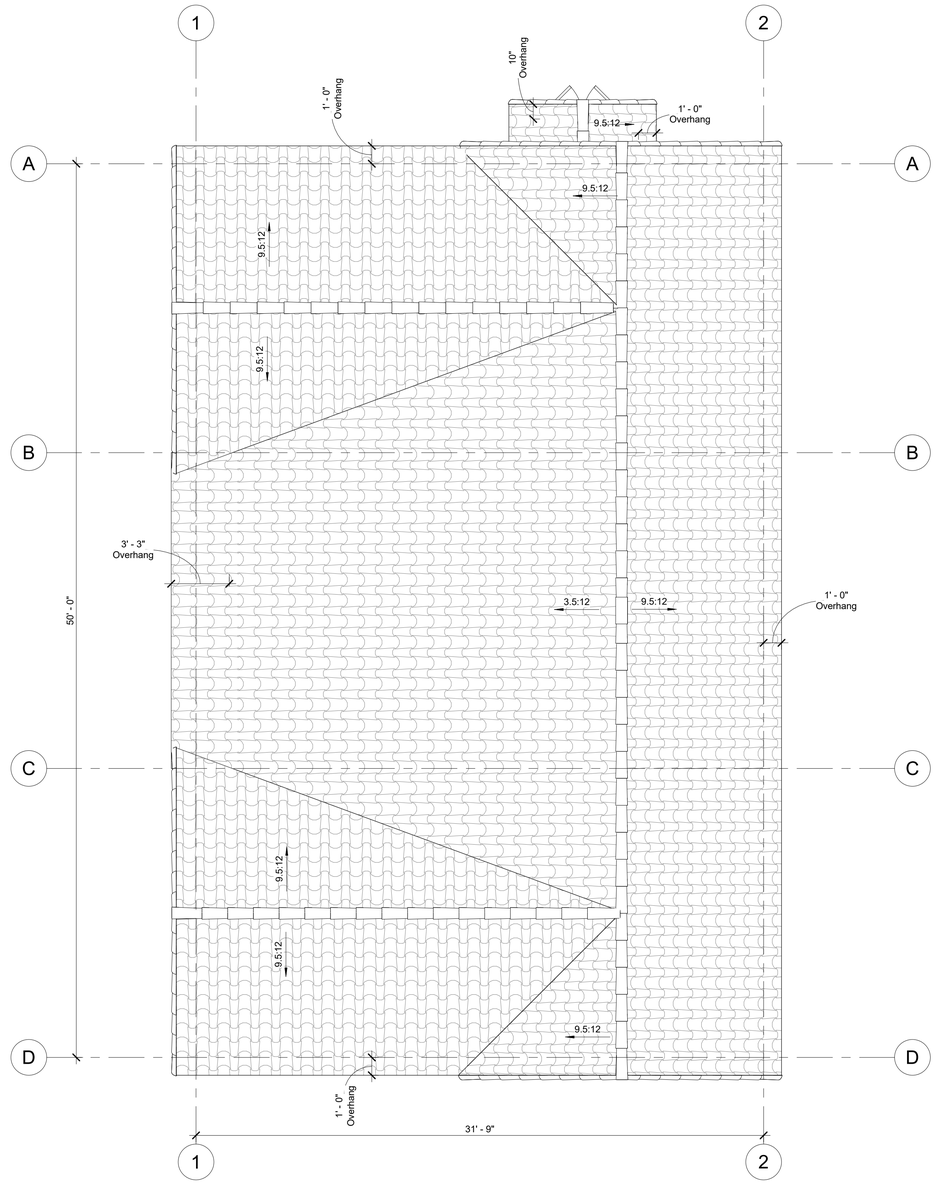
ORTEGA PARK

SURROUNDING NEIGHBORHOOD



WELCOME HOUSE FLOOR PLAN

1/4" = 1'-0"



WELCOME HOUSE ROOF PLAN

1/4" = 1'-0"

Notes:

Automatic sprinkler system to be place, in accordance with NFPA standards. (SBMC Ch. 8.94, Sec 903.2.20.4)

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WELCOME HOUSE FLOOR PLAN

#1144-03-RC19
JULY 2020

A-7



WELCOME HOUSE EAST ELEVATION

1/4" = 1'-0"



WELCOME HOUSE WEST ELEVATION

1/4" = 1'-0"

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WELCOME HOUSE ELEVATIONS

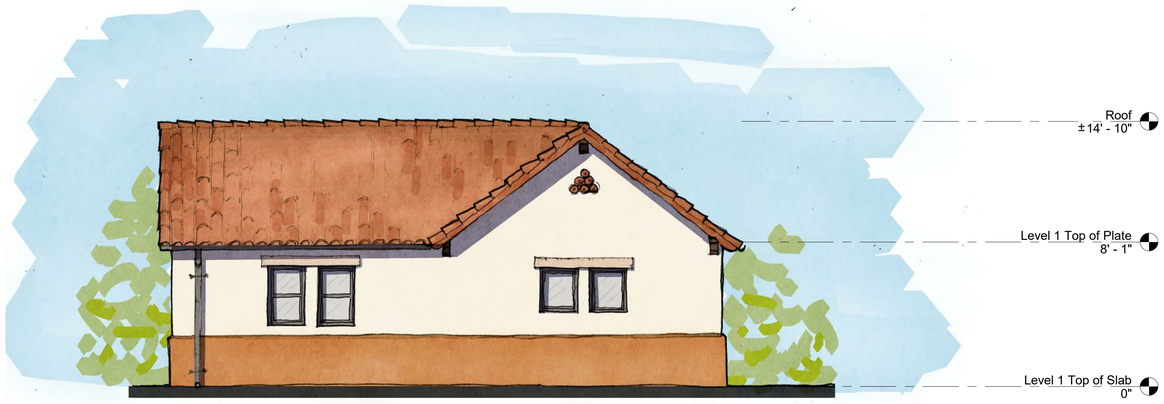
#1144-03-RC19
JULY 2020

A-8



WELCOME HOUSE NORTH ELEVATION

1/4" = 1'-0"



WELCOME HOUSE SOUTH ELEVATION

1/4" = 1'-0"

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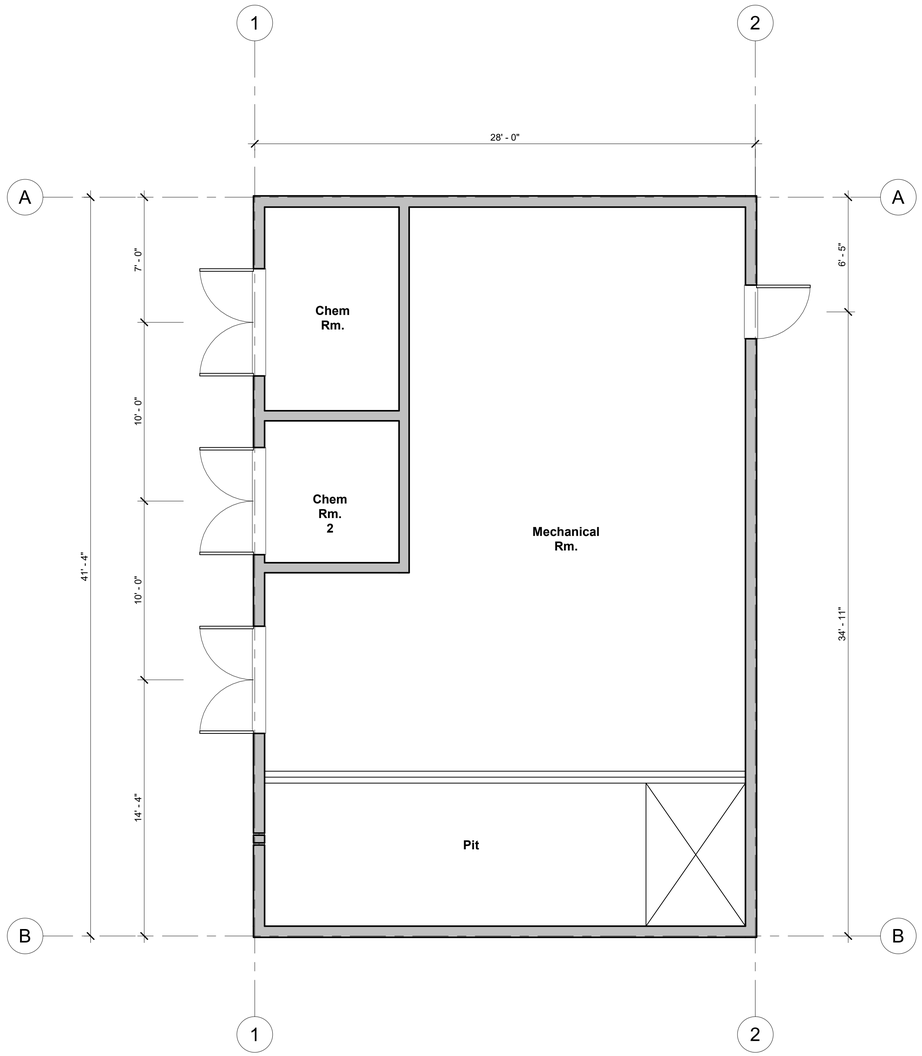
AQUATIC DESIGN GROUP

ORTEGA PARK

WELCOME HOUSE ELEVATIONS

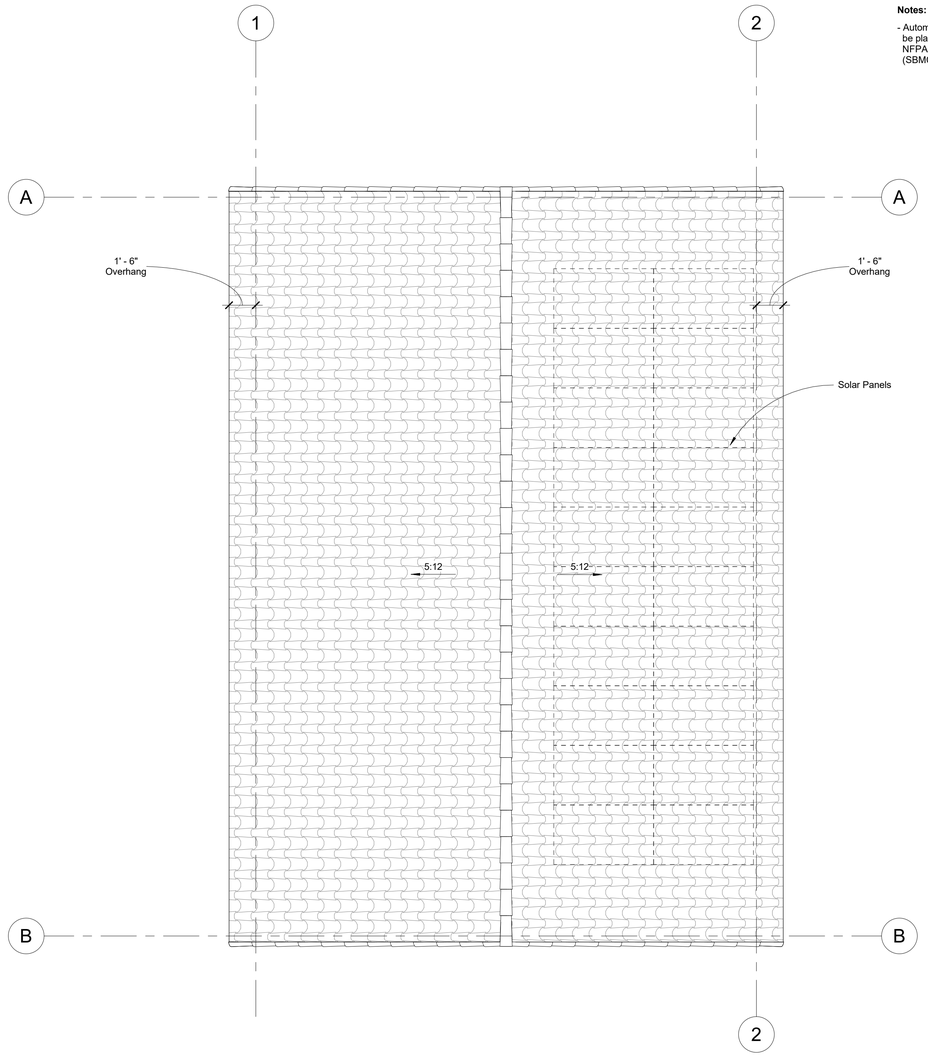
#1144-03-RC19
JULY 2020

A-9



POOL EQUIPMENT BUILDING FLOOR PLAN

1/4" = 1'-0"



POOL EQUIPMENT BUILDING ROOF PLAN

1/4" = 1'-0"

Notes:

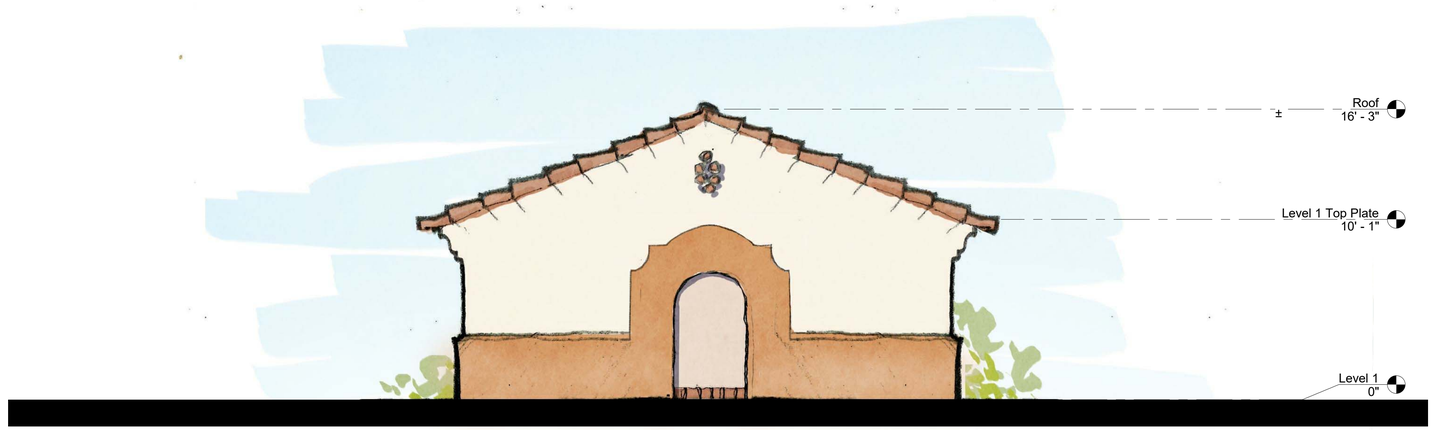
- Automatic sprinkler system to be place, in accordance with NFPA standards. (SBMC Ch. 8.94, Sec 903.2.20.4)

ORTEGA PARK

POOL EQUIPMENT BUILDING FLOOR PLAN

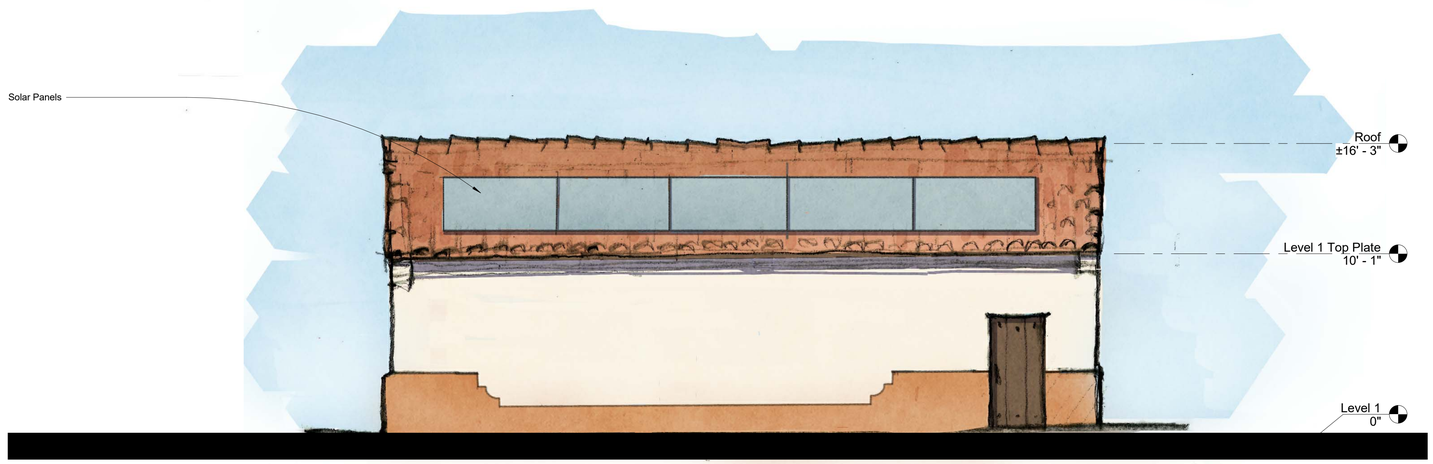
#1144-03-RC19
JULY 2020

A-10



POOL EQUIPMENT BUILDING WEST ELEVATION

1/4" = 1'-0"



POOL EQUIPMENT BUILDING SOUTH ELEVATION

1/4" = 1'-0"

Parks & Recreation

rrm design group

Wormhoudt INC

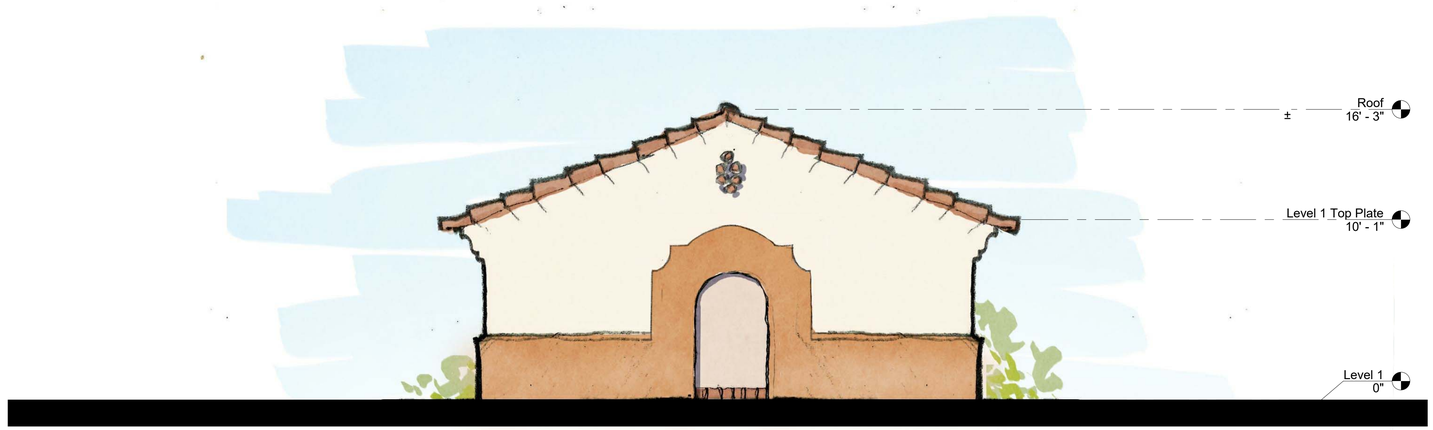
AQUATIC DESIGN GROUP

ORTEGA PARK

POOL EQUIPMENT BUILDING ELEVATIONS

#1144-03-RC19
JULY 2020

A-11



POOL EQUIPMENT BUILDING EAST ELEVATION

1/4" = 1'-0"



POOL EQUIPMENT BUILDING NORTH ELEVATION

1/4" = 1'-0"

Parks & Recreation

rrm design group

Wormhoudt INC

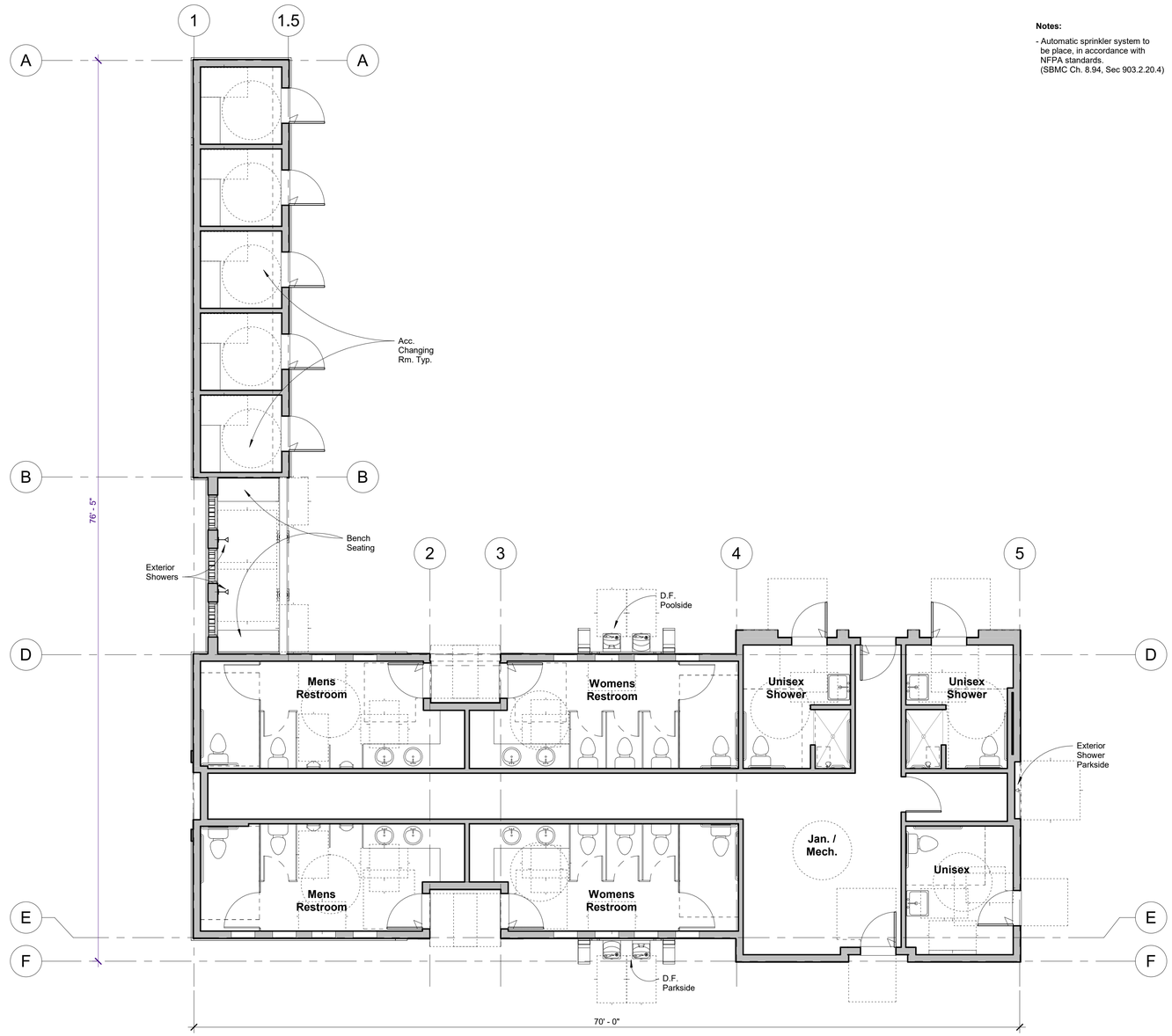
AQUATIC DESIGN GROUP

ORTEGA PARK

POOL EQUIPMENT BUILDING ELEVATIONS

#1144-03-RC19
JULY 2020

A-12



RESTROOM BUILDING FLOOR PLAN

3/16" = 1'-0"

Notes:

- Automatic sprinkler system to be place, in accordance with NFPA standards. (SBMC Ch. 8.94, Sec 903.2.20.4)

Parks & Recreation

rrm design group

Wormhoudt INC

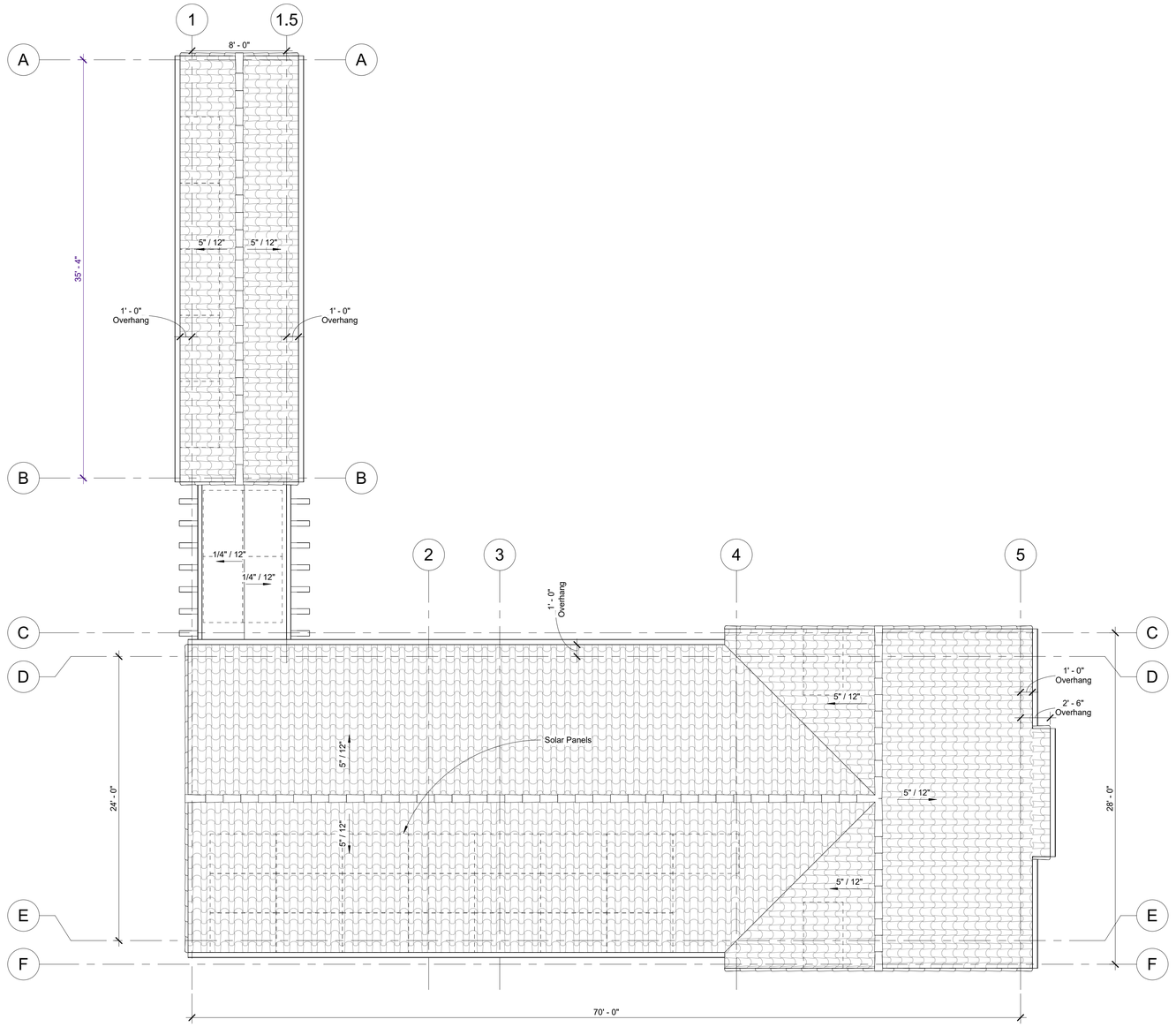
AQUATIC DESIGN GROUP

ORTEGA PARK

RESTROOM BUILDING FLOOR PLAN

#1144-03-RC19
JULY 2020

A-13



RESTROOM BUILDING ROOF PLAN

3/16" = 1'-0"

ORTEGA PARK

RESTROOM BUILDING ROOF PLAN

#1144-03-RC19
JULY 2020

A-14



RESTROOM BUILDING NORTH ELEVATION

1/4" = 1'-0"



RESTROOM BUILDING SOUTH ELEVATION

1/4" = 1'-0"

Parks & Recreation

rrm design group

Wormhoudt INC

AQUATIC DESIGN GROUP

ORTEGA PARK

RESTROOM BUILDING ELEVATIONS

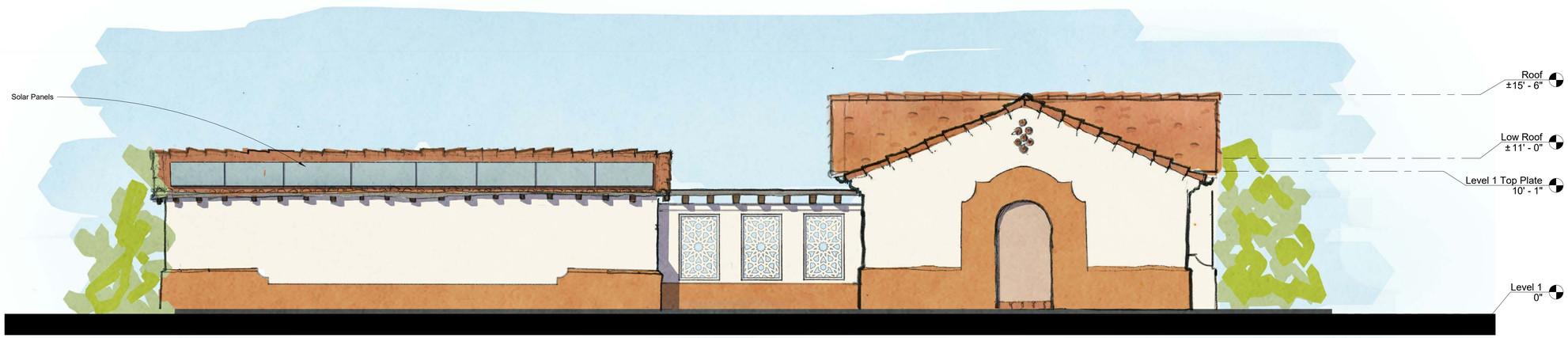
#1144-03-RC19
JULY 2020

A-15



RESTROOM BUILDING EAST ELEVATION

1/4" = 1'-0"



RESTROOM BUILDING WEST ELEVATION

1/4" = 1'-0"

Parks & Recreation

rrm design group

Wormhoudt INC

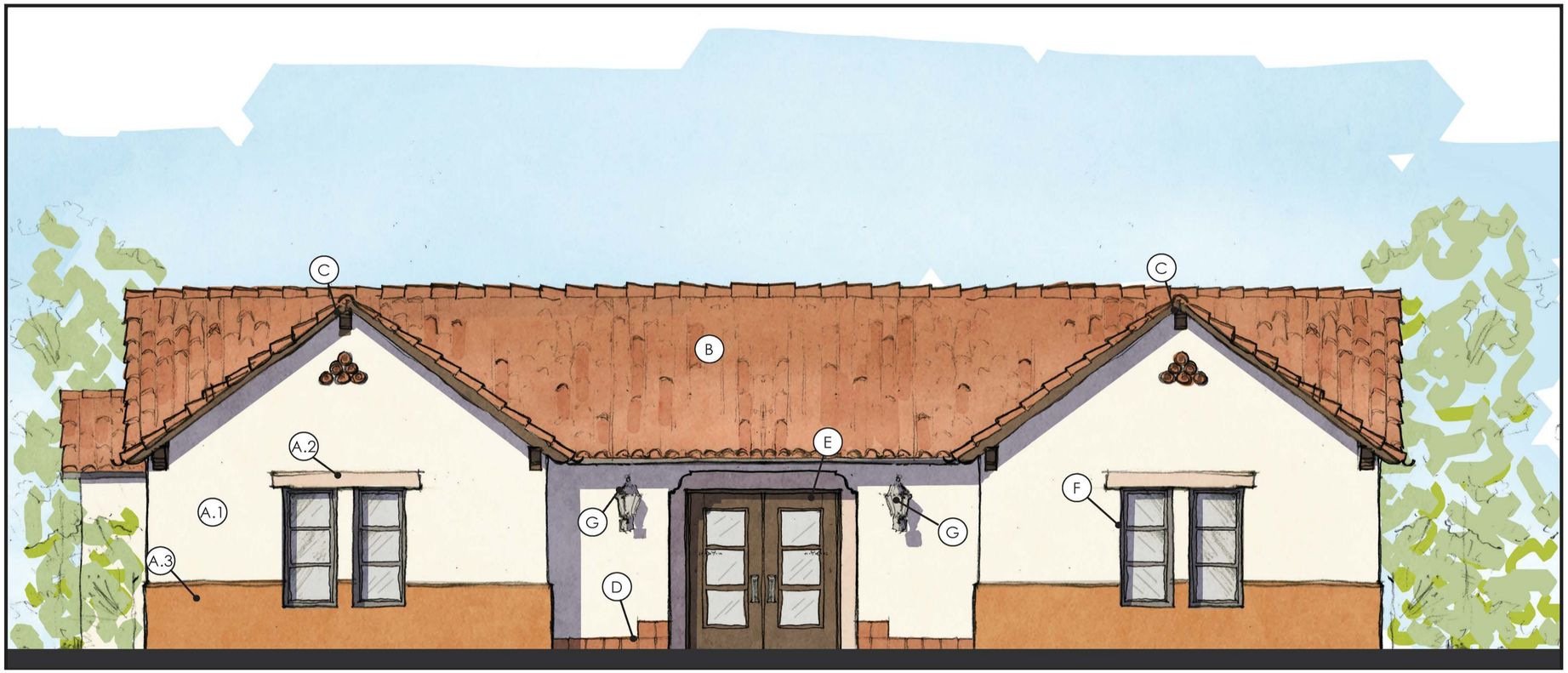
AQUATIC DESIGN GROUP

ORTEGA PARK

RESTROOM BUILDING ELEVATIONS

#1144-03-RC19
JULY 2020

A-16

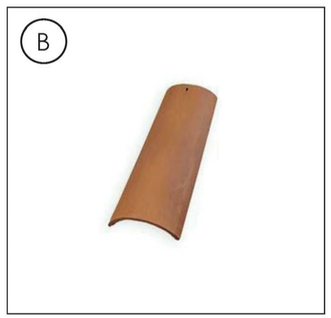


A.1

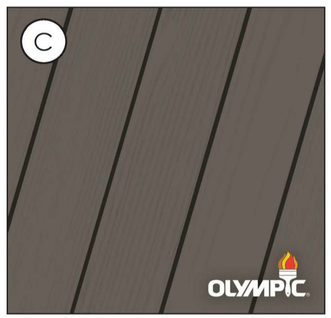
A.2

A.3

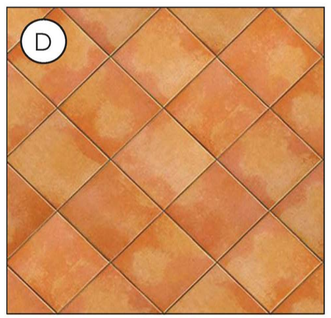
STUCCO: SANTA BARBARA
COLOR : A.1 LA HABRA EGGSHELL
A.2 DUNN EDWARDS 970
A.3 DUNN EDWARDS 763



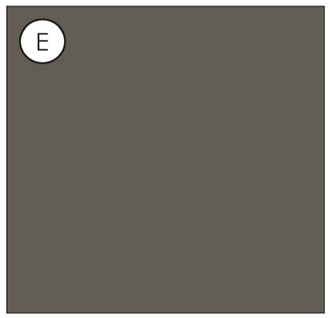
CLAY TILE ROOFING
REDLAND CLAY TILE: CAFE ANTIGUA



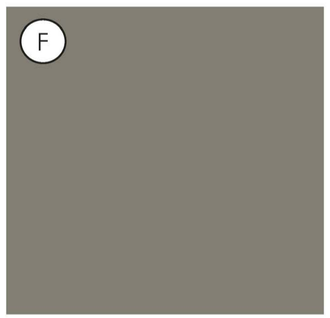
WOOD RAFTERS
OLYMPIC OXFORD BROWN



SALTILLO TILE
TERRACOTA



STEEL DOORS
COLOR : WEATHERED BROWN



WINDOW & FRAME
COLOR : METAL FRINGE



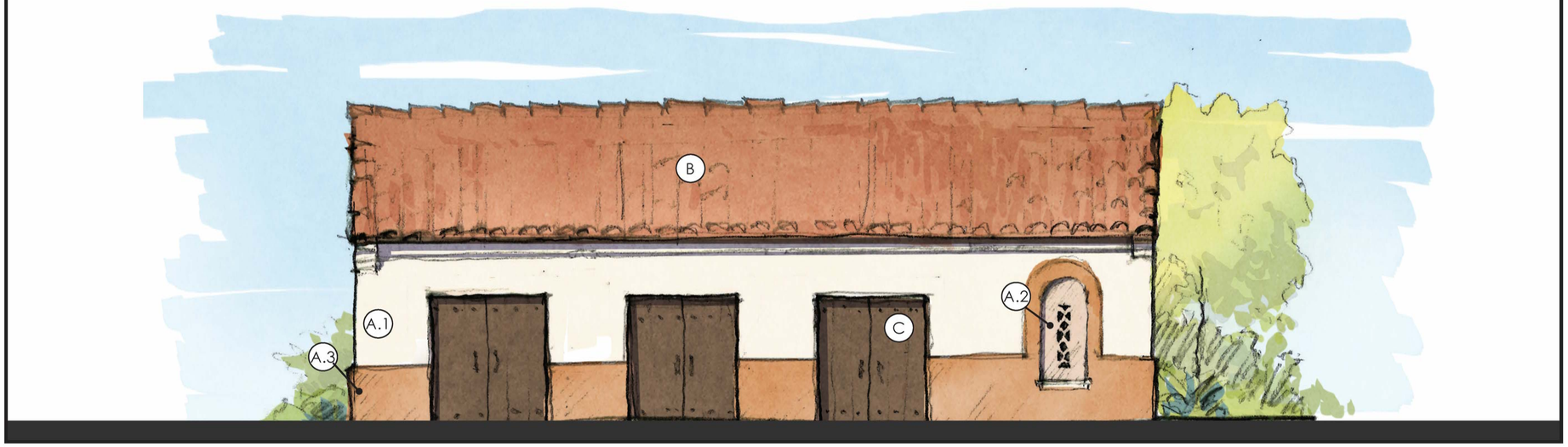
EXTERIOR LIGHT FIXTURES
HANDLEMEN
EMERSON 8" WALL

ORTEGA PARK

COLOR AND MATERIALS - WELCOME HOUSE

#1144-03-RC19
JULY 2020

A-17



A.1

A.2

A.3

STUCCO: SANTA BARBARA
COLOR : A.1 LA HABRA EGGSHELL
A.2 DUNN EDWARDS 970
A.3 DUNN EDWARDS 763

B



CLAY TILE ROOFING
REDLAND CLAY TILE: CAFE ANTIGUA

C

STEEL DOORS
COLOR : WEATHERED BROWN

Parks & Recreation

rrm design group

Wormhoudt INC

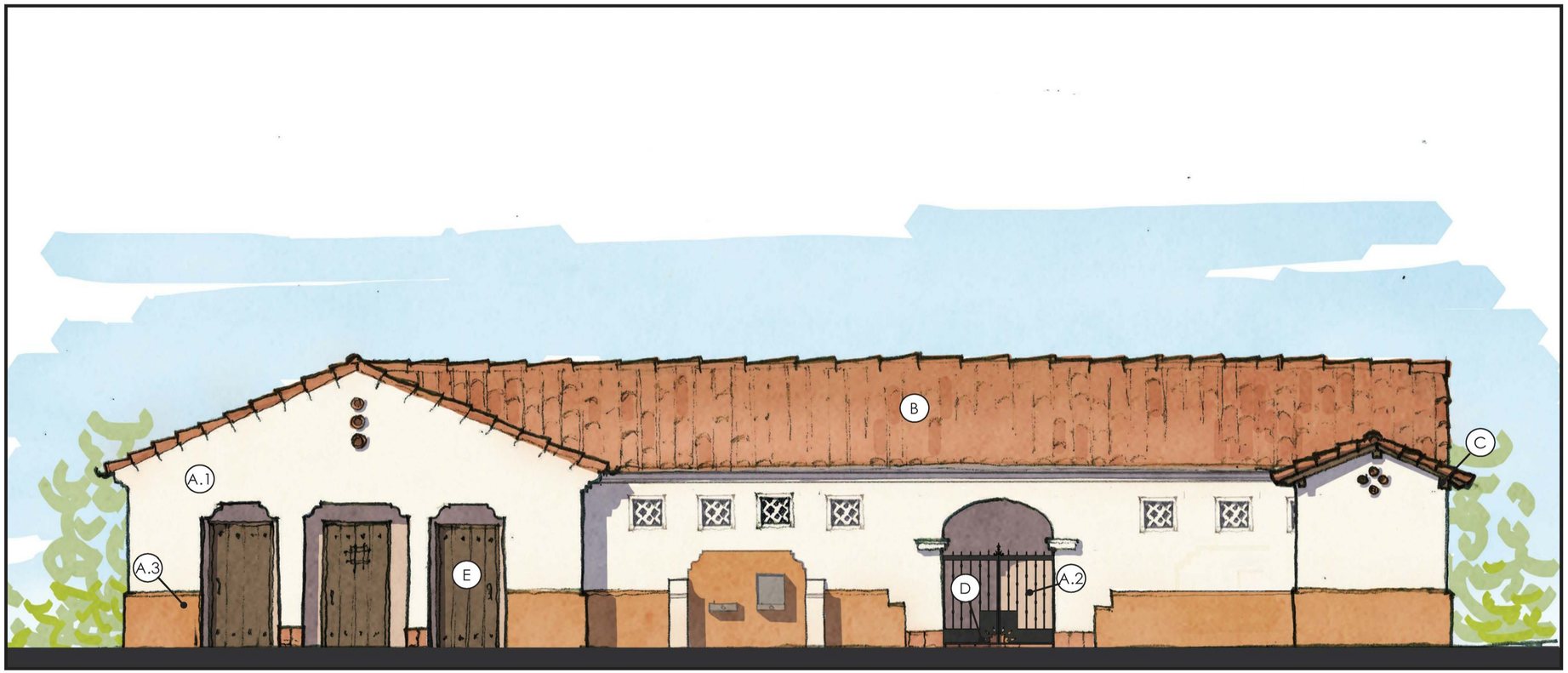
AQUATIC DESIGN GROUP

ORTEGA PARK

COLOR AND MATERIALS - POOL EQUIPMENT BUILDING

#1144-03-RC19
JULY 2020

A-18



A.1
A.2
A.3

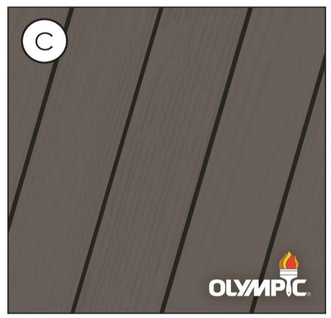
STUCCO: SANTA BARBARA
COLOR : A.1 LA HABRA EGGSHELL
A.2 DUNN EDWARDS 970
A.3 DUNN EDWARDS 763

B



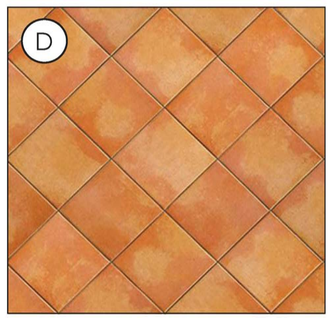
CLAY TILE ROOFING
REDLAND CLAY TILE: CAFE ANTIGUA

C



WOOD RAFTERS
OLYMPIC OXFORD BROWN

D



SALTILLO TILE
TERRACOTA

E

STEEL DOORS
COLOR : WEATHERED BROWN

DALTILE
COLOR : ATLANTIS
COLOR: NAVY
(AT SHOWER AREA)

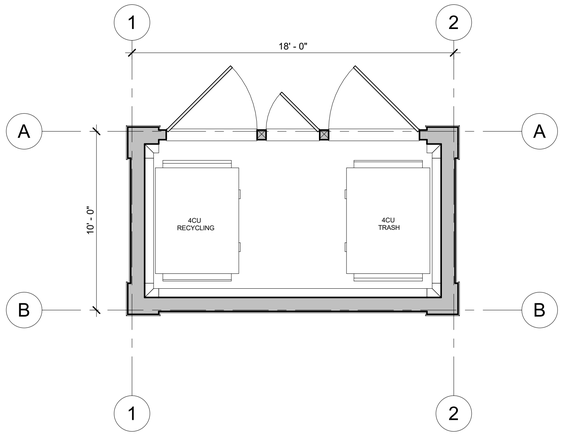
Parks & Recreation
rrm design group
Wormhoudt INC
AQUATIC DESIGN GROUP

ORTEGA PARK

COLOR AND MATERIALS - RESTROOM BUILDING

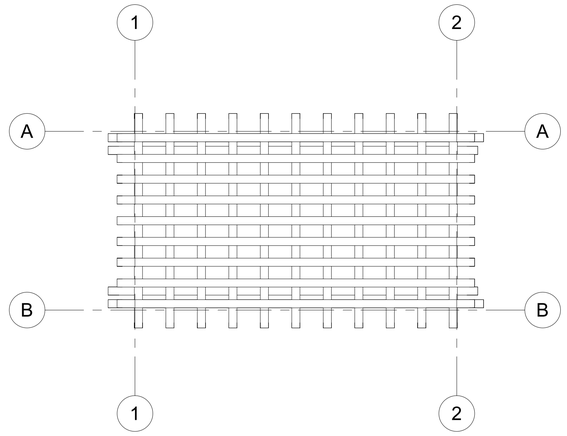
#1144-03-RC19
JULY 2020

A-19



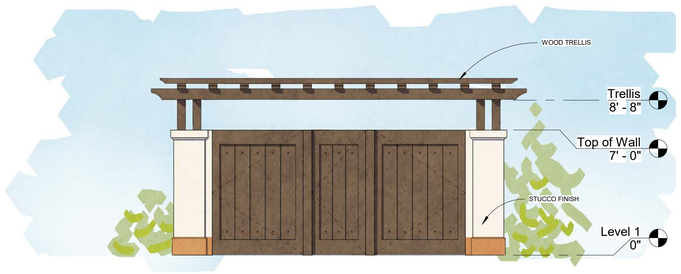
PLAN VIEW

1/4" = 1'-0"



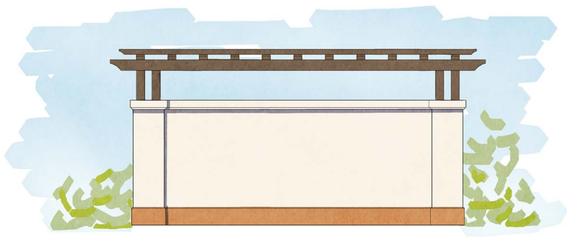
TRELLIS PLAN VIEW

1/4" = 1'-0"



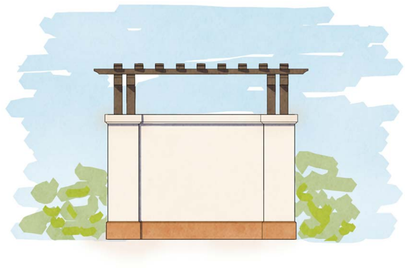
EAST ELEVATION

1/4" = 1'-0"



WEST ELEVATION

1/4" = 1'-0"



NORTH ELEVATION

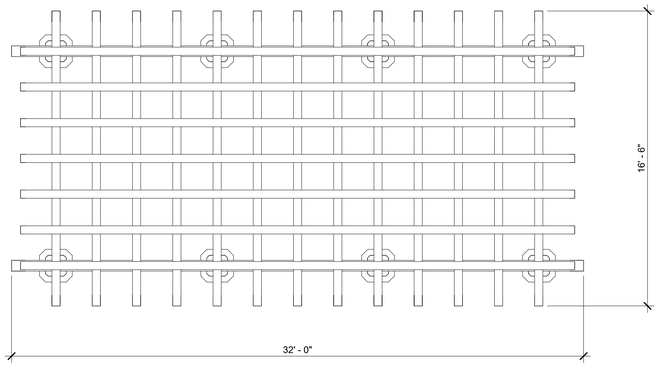
1/4" = 1'-0"

ORTEGA PARK

TRASH ENCLOSURE PLANS AND ELEVATIONS

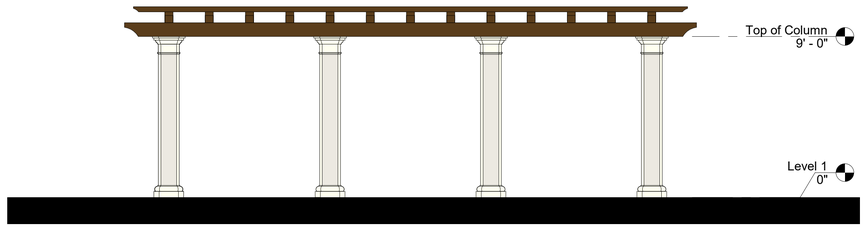
1144-03-RC19
24 June 2020

A-20



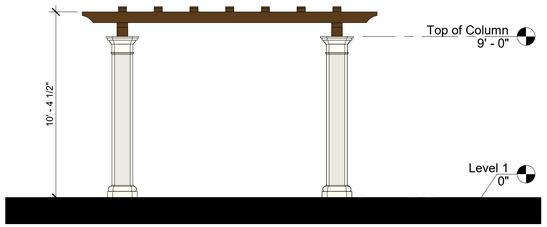
PLAN VIEW TRELLIS

1/4" = 1'-0"



West Elevation

1/4" = 1'-0"



East Elevation

1/4" = 1'-0"

ORTEGA PARK

TRELLIS SHADE STRUCTURE FLOOR PLAN AND ELEVATIONS

#1144-03-RC19
24 June 2020

A-21

Ortega Park

Santa Barbara, CA

Lighting System

Pole / Fixture Summary

Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Load	Circuit
A1	70'	70'	4	TLC-LED-900	3.56 kW	C
BB1-BB2	40'	40'	2	TLC-LED-400	0.80 kW	C
S1	60'	60'	1	TLC-LED-1200	1.17 kW	A
		60'	1	TLC-LED-600	0.58 kW	A
		60'	3	TLC-LED-900	2.67 kW	A
S2	60'	60'	1	TLC-LED-1200	1.17 kW	B
		60'	1	TLC-LED-600	0.58 kW	B
		60'	3	TLC-LED-900	2.67 kW	B
S3	70'	70'	3	TLC-LED-1200	3.51 kW	B
		70'	3	TLC-LED-1500	4.29 kW	B
S4	70'	70'	4	TLC-LED-1200	4.68 kW	A
		70'	2	TLC-LED-900	1.78 kW	A
S5	60'	60'	4	TLC-LED-900	3.56 kW	B
8			***34***		***31.82 kW***	

Circuit Summary

Circuit	Description	Load	Fixture Qty
A	Soccer	10.88 kW	11
B	Soccer/Softball	15.78 kW	15
C	Baseball Infield	5.16 kW	8

Fixture Type Summary

Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
TLC-LED-900	LED 5700K - 75 CRI	890W	89,600	>120,000	>120,000	>120,000	16
TLC-LED-1500	LED 5700K - 75 CRI	1430W	160,000	>120,000	>120,000	>120,000	3
TLC-LED-400	LED 5700K - 75 CRI	400W	46,500	>120,000	>120,000	>120,000	4
TLC-LED-600	LED 5700K - 75 CRI	580W	65,600	>120,000	>120,000	>120,000	2
TLC-LED-1200	LED 5700K - 75 CRI	1170W	136,000	>120,000	>120,000	>120,000	9

Light Level Summary

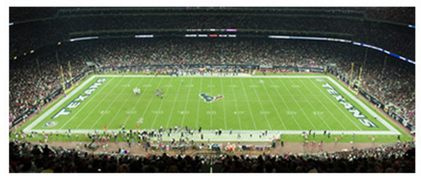
Calculation Grid Summary

Grid Name	Calculation Metric	Illumination					Circuits	Fixture Qty
		Ave	Min	Max	Max/Min	Ave/Min		
Basketball	Horizontal Illuminance	32.3	24.1	43.3	1.80	1.34	C	8
Soccer	Horizontal Illuminance	32.8	22.3	40.6	1.82	1.47	A,B	26
Softball (Infield)	Horizontal Illuminance	55.4	38.6	70.6	1.83	1.44	B,C	23
Softball (Outfield)	Horizontal Illuminance	32.2	19.6	46.5	2.37	1.64	B,C	23
Spill/Glare - Residential	Horizontal Illuminance	0.02	0	0.09	0.00		A,B,C,D	34
Spill/Glare - Residential	Max Candela Metric	1074	0.66	7648	11590.66	1626.52	A,B,C,D	34
Spill/Glare - Residential	Max Vertical Illuminance Metric	0.04	0	0.17	0.00		A,B,C,D	34

From Hometown to Professional









ENGINEERED DESIGN By: • File #201823B • 30-Apr-20

Parks & Recreation

rrm design group

Wormhoudt INC

AQUATIC DESIGN GROUP

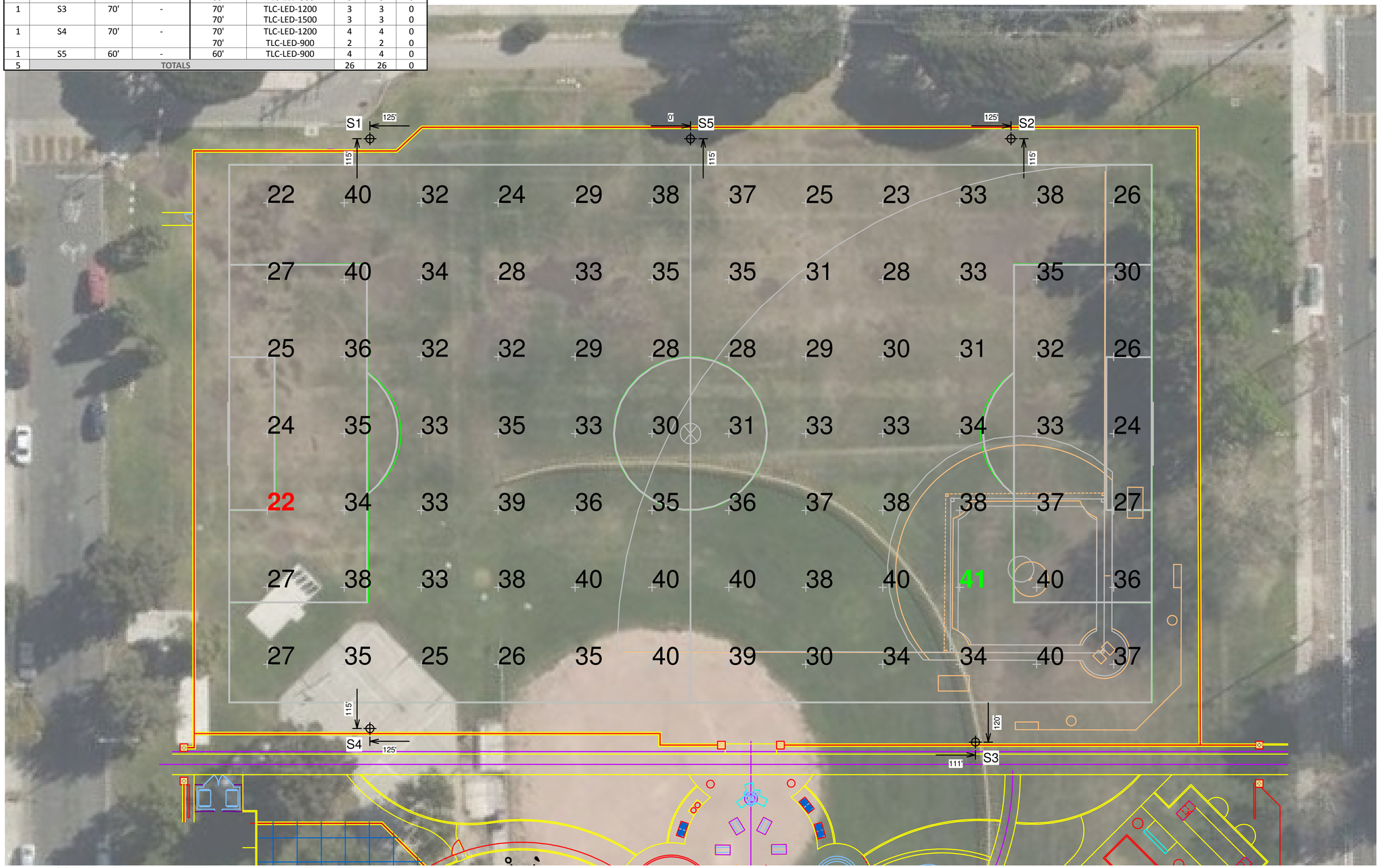
ORTEGA PARK
PHOTOMETRICS PLAN SUMMARY

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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	S1	60'	-	60'	TLC-LED-600	1	1	0
				60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-900	3	3	0
1	S2	60'	-	60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-600	1	1	0
				60'	TLC-LED-900	3	3	0
1	S3	70'	-	70'	TLC-LED-1200	3	3	0
				70'	TLC-LED-1500	3	3	0
1	S4	70'	-	70'	TLC-LED-1200	4	4	0
				70'	TLC-LED-900	2	2	0
1	S5	60'	-	60'	TLC-LED-900	4	4	0
5	TOTALS					26	26	0



SCALE IN FEET 1 : 40

0' 40' 80'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

Ortega Park

Santa Barbara, CA

GRID SUMMARY

Name:	**Soccer**
Size:	360' x 210'
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**30**
Scan Average:	32.8
Maximum:	40.6
Minimum:	22.3
Avg / Min:	1.47
Guaranteed Max / Min:	**2**
Max / Min:	1.82
UG (adjacent pts):	1.76
CU:	0.86
No. of Points:	84

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	89,600 / 160,000 / 65,600 / 136,000 lumens
No. of Luminaires:	**26**
Total Load:	26.66 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-900	>120,000	>120,000	>120,000
TLC-LED-1500	>120,000	>120,000	>120,000
TLC-LED-600	>120,000	>120,000	>120,000
TLC-LED-1200	>120,000	>120,000	>120,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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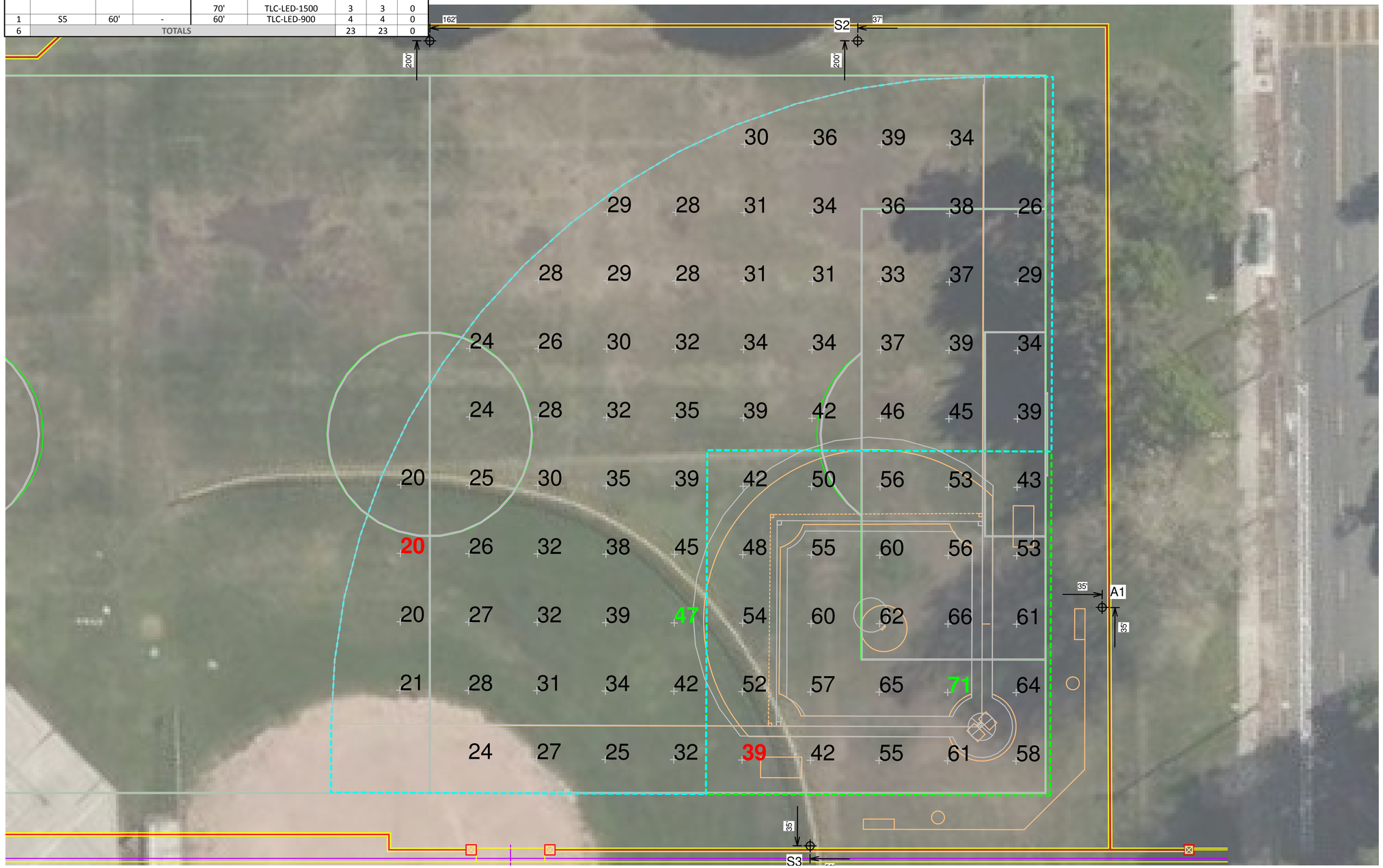
ENGINEERED DESIGN By: • File #201823B • 30-Apr-20

Parks & Recreation | rrm design group | Wormhoudt INC | AQUATIC DESIGN GROUP

ORTEGA PARK
PHOTOMETRICS PLAN - FULL ATHLETIC FIELD ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	70'	-	70'	TLC-LED-900	4	4	0
2	BB1, BB2	40'	-	40'	TLC-LED-400	2	2	0
1	S2	60'	-	60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-600	1	1	0
				60'	TLC-LED-900	3	3	0
1	S3	70'	-	70'	TLC-LED-1200	3	3	0
				70'	TLC-LED-1500	3	3	0
1	S5	60'	-	60'	TLC-LED-900	4	4	0
6	TOTALS					23	23	0



SCALE IN FEET 1 : 30

0' 30' 60'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

Ortega Park

Santa Barbara, CA

GRID SUMMARY

Name:	**Softball**
Size:	190'/190'/190' - basepath 60'
Spacing:	20.0' x 20.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Infield	Outfield
Guaranteed Average:	**50**	**30**
Scan Average:	55.4	32.2
Maximum:	70.6	46.5
Minimum:	38.6	19.6
Avg / Min:	1.44	1.64
Guaranteed Max / Min:	**2**	**2.5**
Max / Min:	1.83	2.37
UG (adjacent pts):	1.36	1.49
CU:	0.59	
No. of Points:	25	61

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	89,600 / 160,000 / 46,500 / 136,000 / 65,600
No. of Luminaires:	**23**
Total Load:	20.94 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-900	>120,000	>120,000	>120,000
TLC-LED-1500	>120,000	>120,000	>120,000
TLC-LED-400	>120,000	>120,000	>120,000
TLC-LED-1200	>120,000	>120,000	>120,000
TLC-LED-600	>120,000	>120,000	>120,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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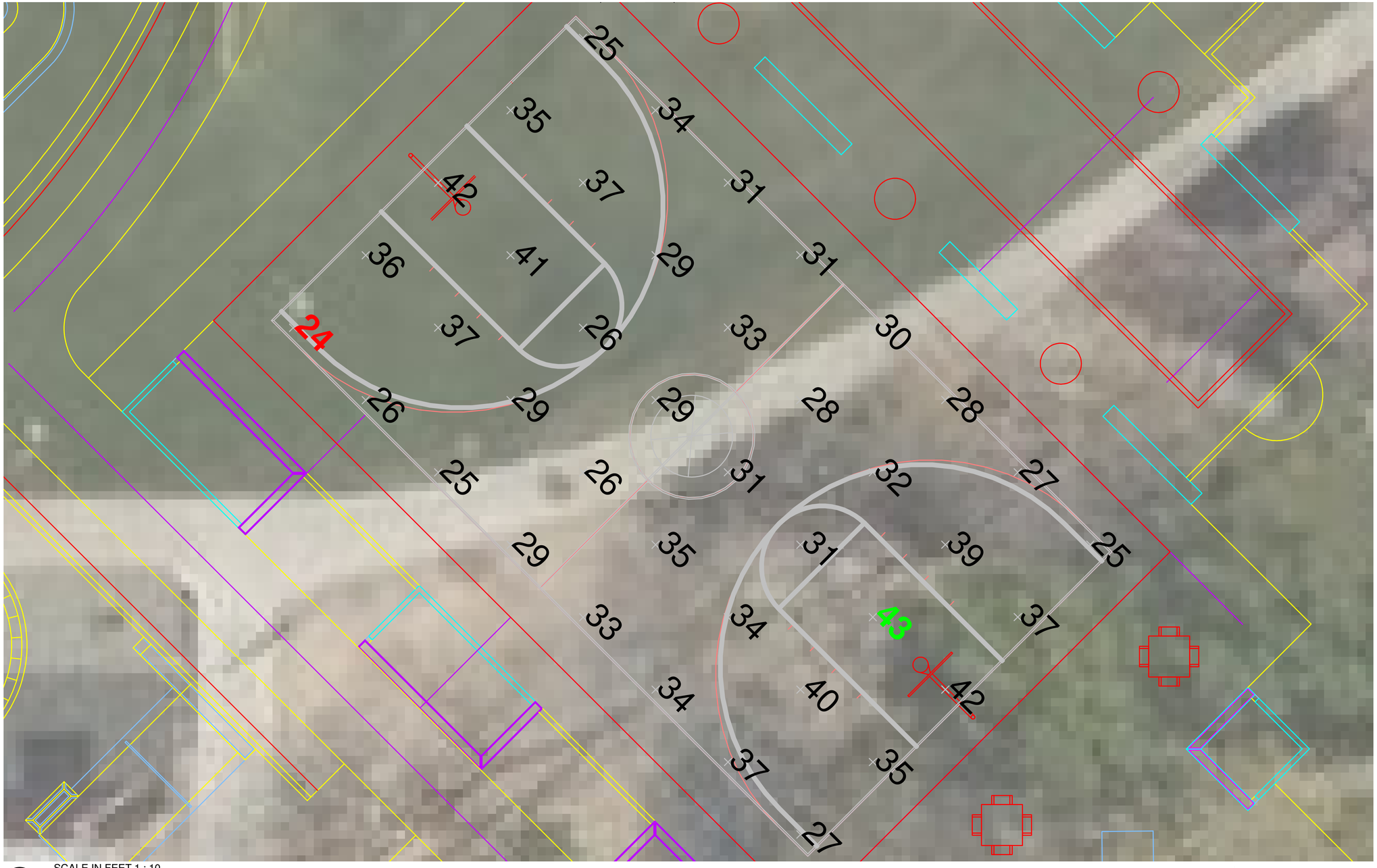
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ORTEGA PARK

PHOTOMETRICS PLAN - BASEBALL FIELD ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	70'	-	70'	TLC-LED-900	4	4	0
2	BB1, BB2	40'	-	40'	TLC-LED-400	2	2	0
3	TOTALS					8	8	0



SCALE IN FEET 1 : 10

0' 20' 40'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

Ortega Park

Santa Barbara, CA

GRID SUMMARY

Name:	**Basketball**
Size:	74' x 42'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Guaranteed Average:	**30**
Scan Average:	32.3
Maximum:	43.3
Minimum:	24.1
Avg / Min:	1.34
Guaranteed Max / Min:	**2**
Max / Min:	1.80
UG (adjacent pts):	1.56
CU:	0.23
No. of Points:	40

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	89,600 / 46,500 lumens
No. of Luminaires:	**8**
Total Load:	5.16 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-900	>120,000	>120,000	>120,000
TLC-LED-400	>120,000	>120,000	>120,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

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ORTEGA PARK

PHOTOMETRICS PLAN - BASKETBALL COURT ILLUMINATION SUMMARY

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	70'	-	70'	TLC-LED-900	4	4	0
2	BB1, BB2	40'	-	40'	TLC-LED-400	2	2	0
1	S1	60'	-	60'	TLC-LED-600	1	1	0
				60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-900	3	3	0
1	S2	60'	-	60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-600	1	1	0
				60'	TLC-LED-900	3	3	0
1	S3	70'	-	70'	TLC-LED-1200	3	3	0
				70'	TLC-LED-1500	3	3	0
1	S4	70'	-	70'	TLC-LED-1200	4	4	0
				70'	TLC-LED-900	2	2	0
1	S5	60'	-	60'	TLC-LED-900	4	4	0
8	TOTALS					34	34	0



SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

Ortega Park

Santa Barbara, CA

GRID SUMMARY

Name:	**Spill/Glare - Residential**
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	**0.017**
Maximum:	0.089
Minimum:	0.000
No. of Points:	76

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	89,600 / 160,000 / 46,500 / 65,600 / 136,000
No. of Luminaires:	**34**
Total Load:	31.82 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-900	>120,000	>120,000	>120,000
TLC-LED-1500	>120,000	>120,000	>120,000
TLC-LED-400	>120,000	>120,000	>120,000
TLC-LED-600	>120,000	>120,000	>120,000
TLC-LED-1200	>120,000	>120,000	>120,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

THIS SHEET PROVIDES AN ANALYSIS OF LIGHT EMISSION AND SPILLOVER ILLUMINANCE LEVELS FOR THE PROPOSED LIGHTING SYSTEM MEASURED IN HORIZONTAL FOOTCANDLES.

These calculations demonstrate that where adjacent to residential uses, such as Ortega Street, illuminance does not exceed the maximum 0.1 footcandle per Lighting Design Guidlines. In areas adjacent to commercial uses, such as Salsipuedes Street, illuminance does not exceed 0.2 footcandle at 10' beyond the property line. **The illumination levels provided in the current design are compatible with the adjacent residential use and light trespass/glare levels are below the maximum allowable output.**

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ORTEGA PARK

PHOTOMETRICS PLAN - FULL SITE ILLUMINATION SUMMARY (LIGHT TRESPASS)

#1144-03-RC19
JULY 2020

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	70'	-	70'	TLC-LED-900	4	4	0
2	BB1, BB2	40'	-	40'	TLC-LED-400	2	2	0
1	S1	60'	-	60'	TLC-LED-600	1	1	0
				60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-900	3	3	0
1	S2	60'	-	60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-600	1	1	0
				60'	TLC-LED-900	3	3	0
1	S3	70'	-	70'	TLC-LED-1200	3	3	0
				70'	TLC-LED-1500	3	3	0
1	S4	70'	-	70'	TLC-LED-1200	4	4	0
				70'	TLC-LED-900	2	2	0
1	S5	60'	-	60'	TLC-LED-900	4	4	0
8	TOTALS					34	34	0



SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

Ortega Park

Santa Barbara, CA

GRID SUMMARY

Name:	**Spill/Glare - Residential**
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAX VERTICAL FOOTCANDLES

	Entire Grid
Scan Average:	**0.038**
Maximum:	0.167
Minimum:	0.000
No. of Points:	76

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	89,600 / 160,000 / 46,500 / 65,600 / 136,000
No. of Luminaires:	**34**
Total Load:	31.82 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-900	>120,000	>120,000	>120,000
TLC-LED-1500	>120,000	>120,000	>120,000
TLC-LED-400	>120,000	>120,000	>120,000
TLC-LED-600	>120,000	>120,000	>120,000
TLC-LED-1200	>120,000	>120,000	>120,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

THIS SHEET PROVIDES AN ANALYSIS OF LIGHT EMISSION AND SPILLOVER ILLUMINANCE LEVELS FOR THE PROPOSED LIGHTING SYSTEM MEASURED IN MAXIMUM VERTICAL FOOTCANDLES, OR THE AMOUNT OF LIGHT CAST UPON A VERTICAL SURFACE.

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ORTEGA PARK

PHOTOMETRICS PLAN - FULL SITE ILLUMINATION SUMMARY (LIGHT TRESPASS)

#1144-03-RC19
JULY 2020

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
1	A1	70'	-	70'	TLC-LED-900	4	4	0
2	BB1, BB2	40'	-	40'	TLC-LED-400	2	2	0
1	S1	60'	-	60'	TLC-LED-600	1	1	0
				60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-900	3	3	0
1	S2	60'	-	60'	TLC-LED-1200	1	1	0
				60'	TLC-LED-600	1	1	0
				60'	TLC-LED-900	3	3	0
1	S3	70'	-	70'	TLC-LED-1200	3	3	0
				70'	TLC-LED-1500	3	3	0
1	S4	70'	-	70'	TLC-LED-1200	4	4	0
				70'	TLC-LED-900	2	2	0
1	S5	60'	-	60'	TLC-LED-900	4	4	0
8	TOTALS					34	34	0



SCALE IN FEET 1 : 100

0' 100' 200'

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

ENGINEERED DESIGN By: • File #201823B • 30-Apr-20

Ortega Park

Santa Barbara, CA

GRID SUMMARY

Name:	**Spill/Glare - Residential**
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

CANDELA (PER FIXTURE)

	Entire Grid
Scan Average:	**1073.502**
Maximum:	7648.167
Minimum:	0.660
No. of Points:	76

LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	89,600 / 160,000 / 46,500 / 65,600 / 136,000
No. of Luminaires:	**34**
Total Load:	31.82 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-900	>120,000	>120,000	>120,000
TLC-LED-1500	>120,000	>120,000	>120,000
TLC-LED-400	>120,000	>120,000	>120,000
TLC-LED-600	>120,000	>120,000	>120,000
TLC-LED-1200	>120,000	>120,000	>120,000

Reported per TM-21-11. See luminaire datasheet for details.

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

THIS SHEET PROVIDES AN ANALYSIS OF LIGHT INTENSITY & LUMINANCE LEVELS FOR THE PROPOSED LIGHTING SYSTEM MEASURED IN CANDELAS, OR THE INTENSITY OF LUMINATION PRODUCED IN A PARTICULAR DIRECTION THAT RESULTS IN GLARE.

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ORTEGA PARK

PHOTOMETRICS PLAN - SITE ILLUMINATION SUMMARY (GLARE)

#1144-03-RC19
JULY 2020

Ortega Park

Santa Barbara, CA

EQUIPMENT LAYOUT

INCLUDES:
- Basketball
- Soccer
- Softball

Electrical System Requirements: Refer to Amperage Draw Chart and/or the **"Musco Control System Summary"** for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires		
QTY	LOCATION	CLASS	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE
1	A1	LSS70C	-	70'	TLC-LED-900	4
2	BB1, BB2	LSS40A	-	40'	TLC-LED-400	2
1	S1	LSS60B	-	60'	TLC-LED-600	1
				60'	TLC-LED-1200	1
				60'	TLC-LED-900	3
1	S2	LSS60B	-	60'	TLC-LED-1200	1
				60'	TLC-LED-600	1
				60'	TLC-LED-900	3
1	S3	LSS70C	-	70'	TLC-LED-1200	3
				70'	TLC-LED-1500	3
1	S4	LSS70C	-	70'	TLC-LED-1200	4
				70'	TLC-LED-900	2
1	S5	LSS60B	-	60'	TLC-LED-900	4
8	TOTALS					34

SINGLE LUMINAIRE AMPERAGE DRAW CHART

Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)						
Single Phase Voltage	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)
TLC-LED-900	5.3	5.0	4.6	4.0	3.2	2.9	2.3
TLC-LED-1500	8.5	8.1	7.4	6.4	5.1	4.7	3.7
TLC-LED-400	2.3	2.2	2.0	1.7	1.4	1.3	1.0
TLC-LED-600	3.4	3.2	3.0	2.6	2.0	1.9	1.5
TLC-LED-1200	7.0	6.6	6.1	5.2	4.2	4.0	3.0

SCALE IN FEET 1 : 80

0' 80' 160'

Pole location(s) ⊹ dimensions are relative to 0,0 reference point(s) ⊗

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ORTEGA PARK

PHOTOMETRICS PLAN - EQUIPMENT LAYOUT

#1144-03-RC19
JULY 2020

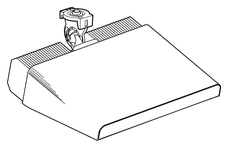
P-8

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Datasheet: **TLC-LED-1200 Luminaire and Driver**



Luminaire Data

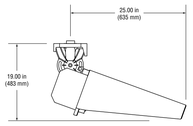
Weight (luminaire)	45 lb (20 kg)
UL listing number	E338094
UL listed for USA / Canada	UL1598 CSA-C22.2 No.250.0
CE Declaration	LVD, EMC, RoHS
Ingress protection, luminaire	IP65
Material and finish	Aluminum, powder-coat painted
Wind speed rating (aiming only)	150 mi/h (67 m/s)
UL, IEC ambient temperature rating, luminaire	50°C (122°F)

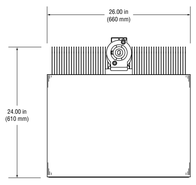
Photometric Characteristics

Projected lumen maintenance per IES TM-21-11	
L90 (20k)	>120,000 h
L80 (20k)	>120,000 h
L70 (20k)	>120,000 h
Lumens[1]	136,000
CIE correlated color temperature	5700 K
Color rendering index (CRI)	75 typ, 70 min

Footnotes:

1) Incorporates appropriate dirt depreciation factor for life of luminaire.





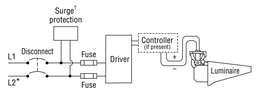
Datasheet: **TLC-LED-1200 Luminaire and Driver**

Driver Data

Electrical Data

Rated wattage[1]	
Per driver	1170 W
Per luminaire	1170 W
Number of luminaires per driver	1
Starting (inrush) current	<40 A, 256 µs
Fuse rating	15 A
UL, IEC ambient temperature rating, electrical components enclosure	50°C (122°F)
Ingress protection, electrical components enclosure	IP54
Efficiency	95%
Dimming mode	optional
Range, energy consumption	14 – 100%
Range, light output	19 – 100%

Typical Wiring



* If L2 (com) is neutral then not switched or fused.
† Not present if indoor installation.

	200 Vac 50/60 Hz	208 Vac 60 Hz	220 Vac 50/60 Hz	230 Vac 50 Hz	240 Vac 50/60 Hz	277 Vac 60 Hz	347 Vac 60 Hz	380 Vac 50/60 Hz	400 Vac 50 Hz	415 Vac 50 Hz	480 Vac 60 Hz
Max operating current per luminaire[2]	7.26 A	6.98 A	6.60 A	6.31 A	6.05 A	5.24 A	4.18 A	3.82 A	3.63 A	3.50 A	3.03 A

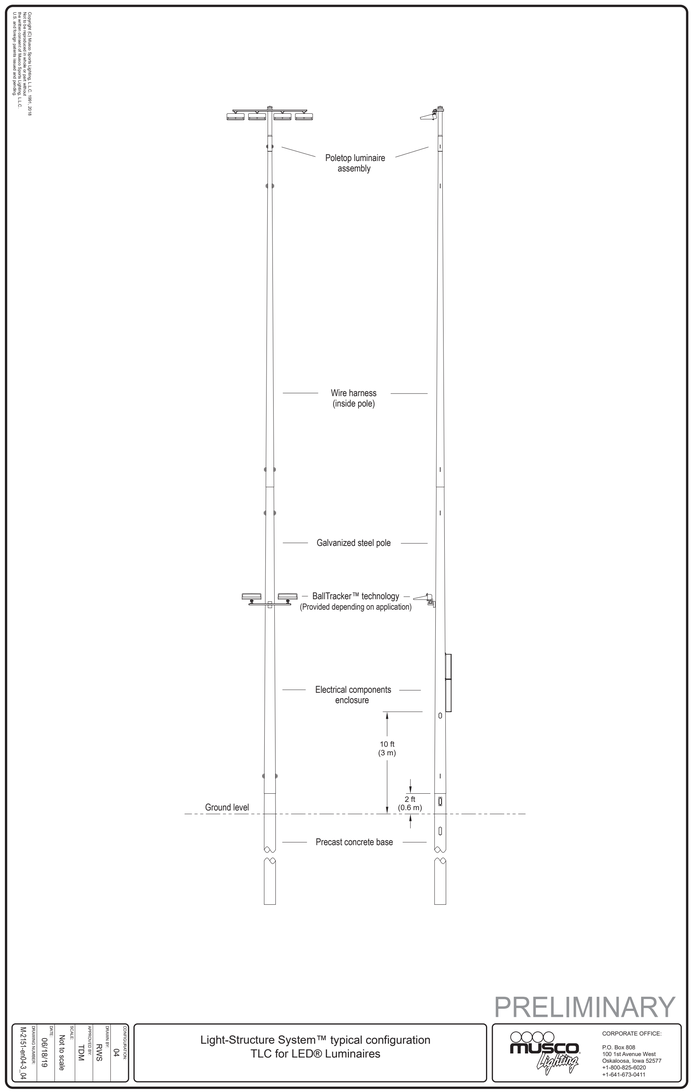
Footnotes:

1) Rated wattage is the power consumption, including driver efficiency losses, at stabilized operation in 25°C ambient temperature environment.
2) Operating current includes allowance for 0.90 minimum power factor, operating temperature, and LED light source manufacturing tolerances.

Notes

1. Use thermal magnetic HID-rated or D-curve circuit breakers.
2. See *Musco Control System Summary* for circuit information.

STANDARD FIXTURE FOR TLC FOR LED LUMINAIRE, TYP.



POLE LIGHT CONFIGURATION, TLC FOR LED LUMINAIRE, TYP.

ORTEGA PARK
PHOTOMETRICS PLAN - EQUIPMENT IMAGES AND SPECIFICATIONS

#1144-03-RC19
JULY 2020

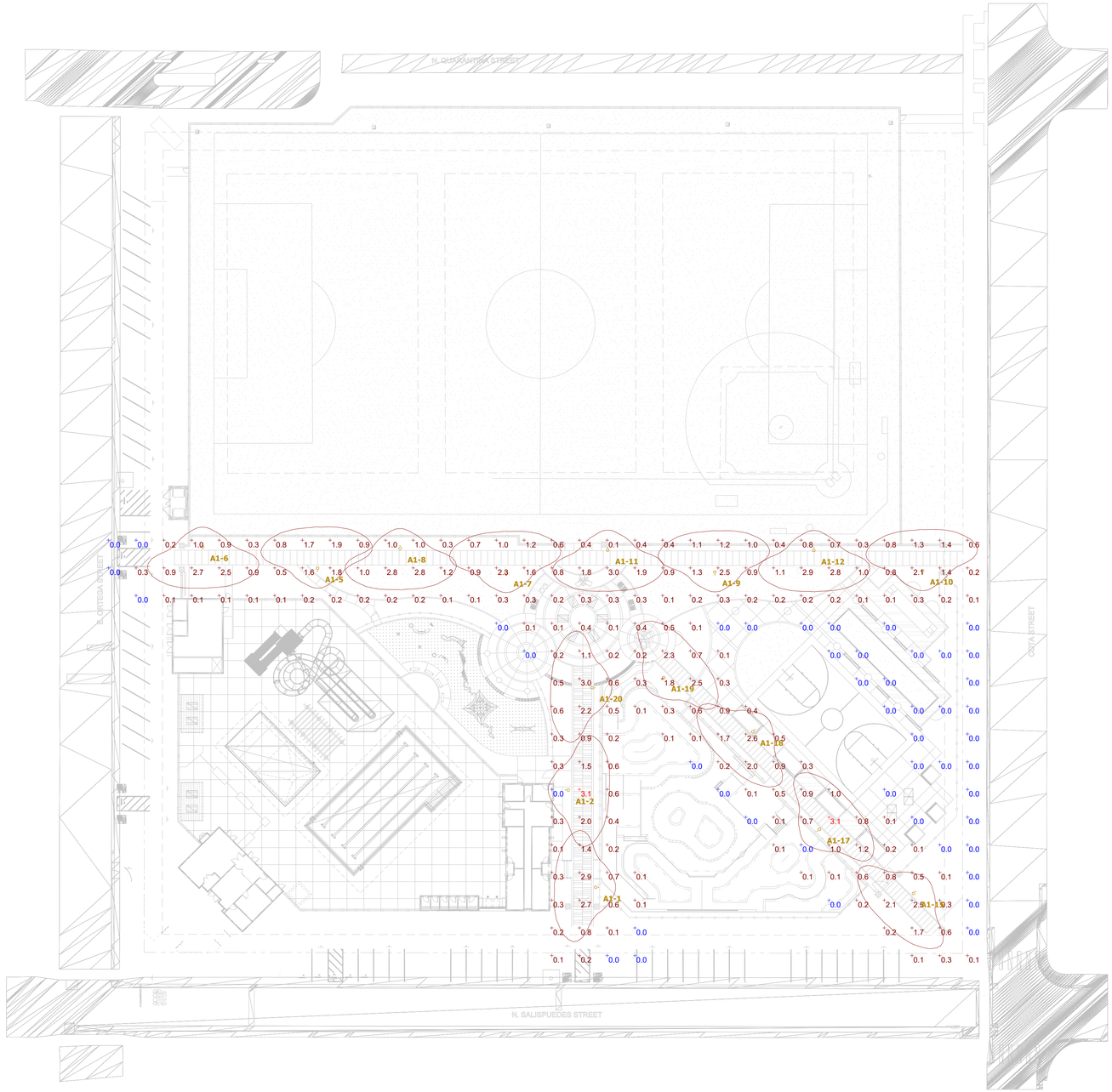
Schedule		
Symbol	Label	QTY
○	A1	15

Number Lamps	Lumens per Lamp	Lumen Multiplier	LLF	Wattage
1	2491	1	0.95	24.16

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
SITE LIGHTING	+	0.6 fc	3.1 fc	0.0 fc	N/A	N/A

Luminaire Locations

		Location						Aim		
No.	Label	X	Y	Z	MH	Orientation	Tilt	X	Y	Z
1	A1	512.83	141.34	14.00	14.00	273.50	0.00	511.33	141.43	0.00
2	A1	494.97	194.17	14.00	14.00	93.14	0.00	496.46	194.09	0.00
5	A1	360.84	312.69	14.00	14.00	357.26	0.00	360.77	314.19	0.00
6	A1	298.51	327.17	14.00	14.00	178.29	0.00	298.56	325.67	0.00
7	A1	462.89	310.34	14.00	14.00	357.26	0.00	462.82	311.84	0.00
8	A1	405.42	326.38	14.00	14.00	178.29	0.00	405.47	324.88	0.00
9	A1	575.87	310.65	14.00	14.00	357.26	0.00	575.80	312.15	0.00
10	A1	688.35	311.33	14.00	14.00	357.26	0.00	688.28	312.83	0.00
11	A1	517.82	325.51	14.00	14.00	178.29	0.00	517.86	324.01	0.00
12	A1	629.42	325.34	14.00	14.00	179.23	0.00	629.44	323.84	0.00
15	A1	684.44	139.13	14.00	14.00	223.81	0.00	683.40	138.04	0.00
17	A1	631.34	171.83	14.00	14.00	48.76	0.00	632.47	172.82	0.00
18	A1	597.41	226.74	14.00	14.00	223.81	0.00	596.37	225.66	0.00
19	A1	547.02	253.93	14.00	14.00	48.76	0.00	548.15	254.92	0.00
20	A1	510.83	249.34	14.00	14.00	273.50	0.00	509.33	249.43	0.00



Plan View

ORTEGA PARK
SITE LIGHTING
SANTA BARBARA, CA

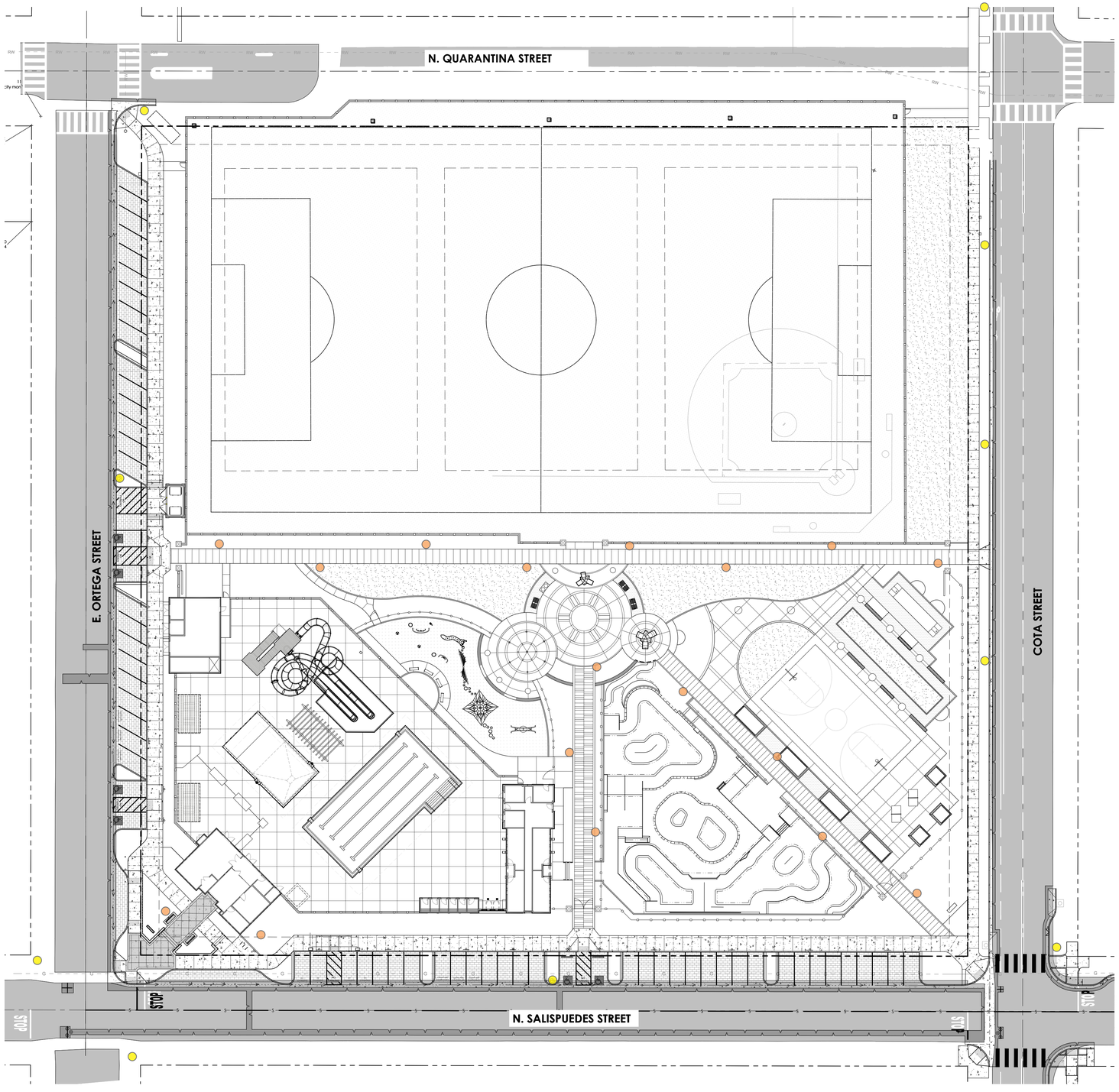
Designer
Michael Blackmon
805-937-8676
Date
XX/XX/2018
Scale
Not to Scale
Drawing No.

Summary

ORTEGA PARK
PHOTOMETRICS PLAN - PEDESTRIAN POLE LIGHTING

#1144-03-RC19
JULY 2020

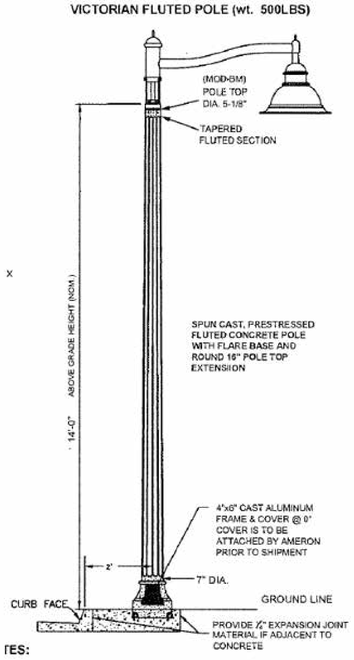
P-10



PEDESTRIAN POLE LIGHT, TYP.

FIXTURE PER CITY OF SANTA BARBARA STANDARD,
SEE NEXT SHEET FOR SPECIFICATIONS.





LEGEND

- PEDESTRIAN / SECURITY LIGHT LOCATIONS
- POLE LIGHT LOCATIONS (INCLUDES EXISTING & PROPOSED)

SEE P1-P9 FOR SPORTS POLE LIGHTING LOCATIONS & SPECIFICATIONS

0' 15' 30' 60' 90'
SCALE 1" = 30'

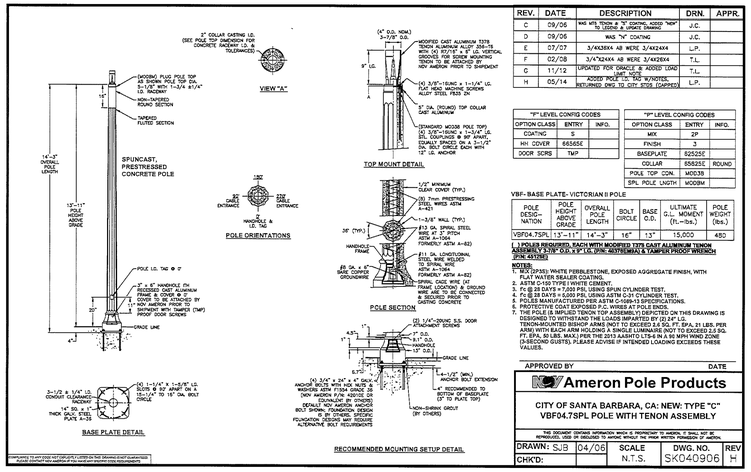
NORTH

Parks & Recreation
rrm design group
Wormhoudt INC
AQUATIC DESIGN GROUP

ORTEGA PARK
PEDESTRIAN POLE LIGHTING LOCATIONS

#1144-03-RC19
JULY 2020

SPECIFICATIONS PER CITY OF SANTA BARBARA STANDARD



REV.	DATE	DESCRIPTION	DRN.	APPR.
C	09/06	WAS MFG TENON & "K" COATING. ADDED "NEW" TO LEGEND & UPDATE DRAWING	J.C.	
D	09/06	WAS "K" COATING	J.C.	
E	07/07	3/4X38XX AB WERE 3/4X24XX	L.P.	
F	02/08	3/4"X24XX AB WERE 3/4X26XX	T.L.	
G	11/12	UPDATED FOR GRADE B ADDED LONG ANT. NOTE	T.L.	
H	05/14	ADDED POLE I.D. TAG W/NOTES. RETURNED DWG TO CITY STDS. (CAPPED)	L.P.	

"F" LEVEL CONFIG CODES		
OPTION CLASS	ENTRY	INFO.
COATING	S	
HH COVER	66565E	
DOOR SCRS	TWP	

"S" LEVEL CONFIG CODES		
OPTION CLASS	ENTRY	INFO.
MFR	2P	
FINISH	3	
BASEPLATE	62525E	
COLLAR	55525E	ROUND
POLE TOP CON.	M0039	
SPL POLE LNGTH	M0098M	

VBF-BASE PLATE- VICTORIAN II POLE

POLE DESIG-NATION	POLE HGT.+/- ABOVE GRADE	OVERALL POLE LENGTH	BOLT CIRCLE	BASE O.D.	ULTIMATE G.L. MOMENT (Ft.-lbs.)	POLE WEIGHT (lbs.)
VBF04.7SPL	13'-11"	14'-3"	16"	13"	15,000	480

( ) POLES REQUIRED. EACH WITH MODIFIED T378 CAST ALUMINUM TENON ASSEMBLY 9.75" O.D. x 9" LG (P/N: 4STPEMAN) & TAMPER PROOF WRENCH (P/N: 4X17W)

NOTES:
1. MIX (P/35): WHITE PERBLESTONE, EXPOSED AGGREGATE FINISH, WITH FLAT WATER SEALER COATING.
2. ASTM C-150 TYPE I WHITE CEMENT.
3. f'c @ 28 DAYS = 5,000 PSI, USING 6"DIA CYLINDER TEST.
4. f'ci @ 18 HOURS = 3,000 PSI, USING 3"DIA CYLINDER TEST.
5. POLES MANUFACTURED PER ASTM C-1089+13 SPECIFICATIONS.
6. PROTECTIVE COAT EXPOSED P.C. WIRES AT POLE ENDS.
7. THE POLE (& IMPLIED TENON TOP ASSEMBLY) DEPICTED ON THIS DRAWING IS DESIGNED TO WITHSTAND THE LOADS IMPARTED BY (2) 64" LG. TENON-MOUNTED LUMINAIRES WITH EPA OF 2.0 SQ. FT. EACH, AND (1) 36" LG. TENON-MOUNTED BISHOP ARMS (NOT TO EXCEED 2.6 SQ. FT. EPA, 31 LBS. PER FT. EPA), 90 LBS. MAX.) PER THE 2013 AASHTO LTS-6 (IN A 90 MPH WIND ZONE (3-SECOND GUSTS). PLEASE ADVISE IF INTENDED LOADING EXCEEDS THESE VALUES.

APPROVED BY _____ DATE _____

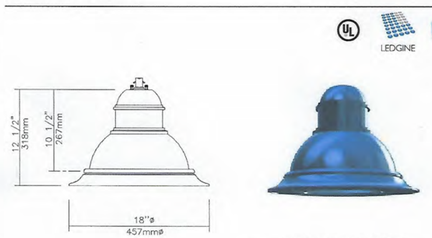
Ameron Pole Products

CITY OF SANTA BARBARA, CA: NEW: TYPE "C"
VBF04.7SPL POLE WITH TENON ASSEMBLY

THIS DOCUMENT CONTAINS INFORMATION WHICH IS PROPRIETARY TO AMERON, IT SHALL NOT BE REPRODUCED, USED OR DISCLOSED TO ANYONE WITHOUT THE PRIOR WRITTEN PERMISSION OF AMERON.

DRAWN: SJB	04/06	SCALE N.T.S.	DWG. NO. SK040906	REV H
CHK'D:				

Santa Barbara City of (4957)



EPA: .64 sq ft / weight: 35 lb (15.9 kg)
Note: 3D image may not represent color or option selected.
Logos above include link, click to access.

Qty **5** Luminaire **DOS-30W16LED4K-T-LE2F-120-SCZT311G151TX**

Description of Components: CUSTOM COLOR: MAGALA GREEN

Housing: In a round shape, this housing is made of die cast A380 aluminum, c/w a watertight grommet, mechanically assembled to the bracket with four bolts 5/16-18 UNC. This suspension system permits for a full rotation of the luminaire in 90 degree increments.

Access-Mechanism: A die cast A360 aluminum technical ring with latch, hinge and a cast-in decorative skirt. The mechanism shall offer tool-free access to the inside of the luminaire. An embedded memory-retentive gasket shall ensure weatherproofing.

Light Engine: LEDgine composed of 5 main components: **Heat Sink / Lens / LED Module / Optical System / Driver** Electrical components are RoHS compliant.

Heat Sink: Made of cast aluminum optimising the LEDs efficiency and life. Product does not use any cooling device with moving parts (only passive cooling device).

Lens: Made of soda-lime tempered glass lens, mechanically assembled and sealed onto the lower part of the heat sink.

LED Module: LED type Philips Lumileds LUXEON T. Composed of 16 high-performance white LEDs. Color temperature as per ANSI/NEMA bin Neutral White, 4000 Kelvin nominal (3985K +/- 275K or 3710K to 4260K), CRI 70 Min. 75 Typical.

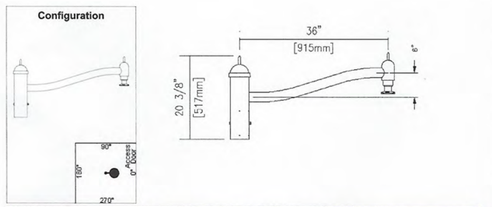
Optical System: (LE2F), IES type II (asymmetrical). Composed of high-performance optical grade PMMA acrylic refractor lenses to achieve desired distribution optimized to get maximum spacing, target lumens and a superior lighting uniformity. Optical system is rated IP66. Performance shall be tested per LM-63, LM-79 and TM-15 (IESNA) certifying its photometric performance. Street side indicated.0% uplight and U0 per IESNA TM-15.

Santa Barbara City of (4957)

Driver: High power factor of 90% minimum. Electronic driver, operating range 50/60 Hz. **Auto-adjusting universal voltage input from 120 to 277 VAC rated for both application line to line or line to neutral, Class I**, THD of 20% max. Maximum ambient operating temperature from -40F(-40C) to 130F(55C) degrees.

The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built-in driver surge protection of 2.5kV (min).

Surge Protector: Surge protector tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line-Ground, Line-Neutral and Neutral-Ground, and in accordance with U.S. DOE (Department of Energy) MSSLC (Municipal Solid-State Street Lighting Consortium) model specification for LED roadway luminaires electrical immunity requirements for High Test Level 10kV / 10kA.



Qty **5** Bracket **[B-LCP-030]-1A-TS-SCZT311G151TX**

Description of Components: CUSTOM COLOR: MAGALA GREEN

Arm: Shall be made from bent 6061-T6 aluminum tubing, 2 3/8in. (60mm) outside diameter, welded.

Adaptor: Made of cast 356.1 aluminum, welded to the arm.

Central Adaptor: Made of aluminum tubing, 4 1/2" (114mm) outside diameter, slip fits over a 4" (102mm) diameter by 9" (229mm) long pole tenon, mechanically fastened by two sets of four 1/4-20 UNC sets-screws and one button head thru-bolt. **Hole to be drilled on-site. Lumec shall provide 2 lengths of set screws.**

Santa Barbara City of (4957)

Miscellaneous

Description of Components:

Hardware: All exposed screws shall be complete with Ceramic primer-seal basecoat to reduce seizing of the parts and offers a high resistance to corrosion. All seals and sealing devices are made and/or lined with EPDM and/or silicone and/or rubber.

Finish: (SCZT311G151TX) Special Color **ZT311G151, textured Protech Z Series Textured Color Malaga Green**. In accordance with the AAMA 2603 standard. Application of polyester powder coat paint (4 mils/100 microns) with ± 1 mils/24 microns of tolerance. The Thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard.

The surface treatment achieves a minimum of 2000 hours for salt spray resistant finish in accordance with testing performed and per ASTM B117 standard.

Note: ***IMPORTANT:*** **The pole manufacturer must make sure that the pole tenon is strong enough to support the assembly.**

LED products manufacturing standard: The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with IEC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

Quality Control: The manufacturer must provide a written confirmation of its ISO 9001-2008 and ISO 14001-2004 International Quality Standards Certification.

Certification: The manufacturer will have to supply a copy of approval products certificate, CSA or UL.

LED light engine technical information for DOS

LED = Philips Lumileds Luxeon T, CRI = 70, CCT = 4000K (+/- 350K)

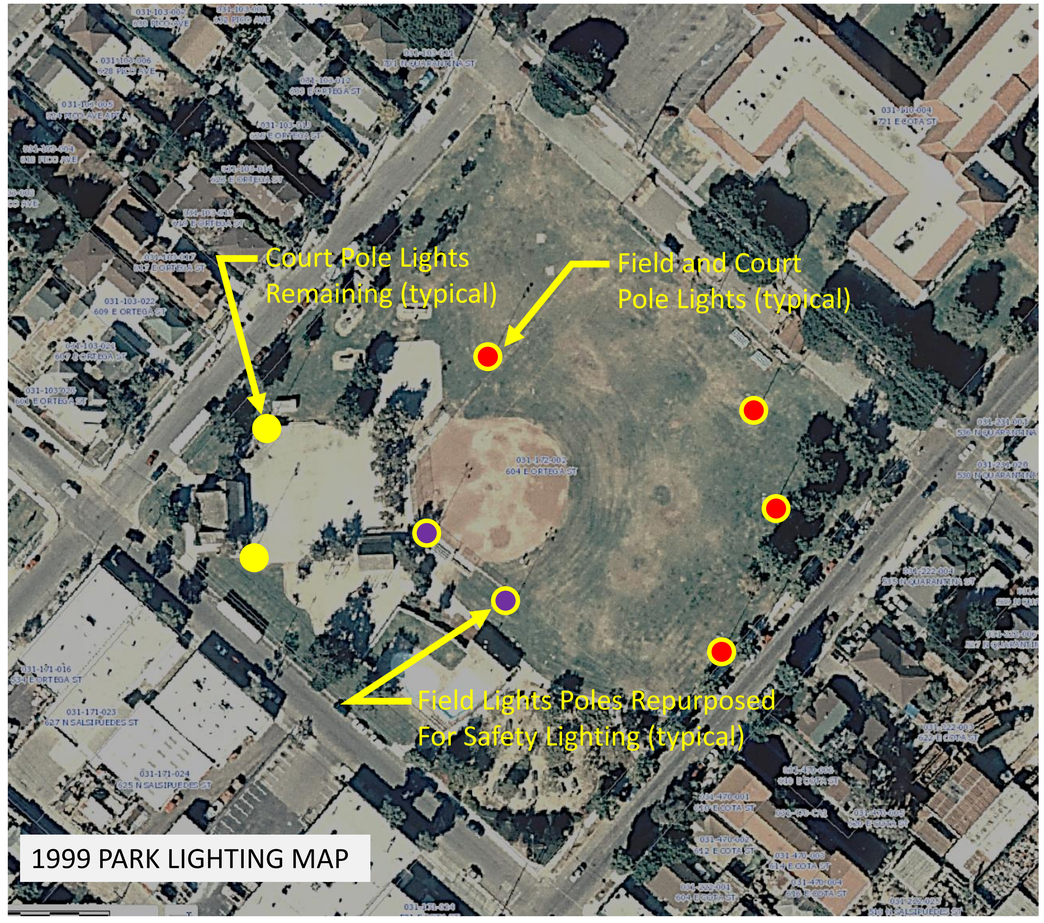
System (LED + driver) rated life = 100,000 hrs [1]

LED Module	Typical delivered lumens	Typical system wattage [2] (W)	Typical current @ 120 V (A)	Typical current @ 208 V (A)	Typical current @ 240 V (A)	Typical current @ 277 V (A)	LED current (mA)	HID Replacement [3]	Luminaire Efficacy Rating (LER/W)	BUG rating
24W16LED4K-T-LE2F	2596	29	0.25	0.15	0.13	0.12	530	70-100	90.6	B1-U0-G1
24W16LED4K-T-LE3F	2487	29	0.25	0.15	0.13	0.12	530	70-100	86.8	B1-U0-G0
24W16LED4K-T-LE4F	2431	29	0.25	0.15	0.13	0.12	530	70-100	84.8	B1-U0-G1
24W16LED4K-T-LE5F	2333	29	0.25	0.15	0.13	0.12	530	70-100	81.4	B2-U0-G0
30W16LED4K-T-LE2F	3267	38	0.32	0.19	0.17	0.15	700	70-100	87.0	B1-U0-G1
30W16LED4K-T-LE3F	3129	38	0.32	0.19	0.17	0.15	700	70-100	83.3	B1-U0-G1
30W16LED4K-T-LE4F	3059	38	0.32	0.19	0.17	0.15	700	70-100	81.4	B1-U0-G1
30W16LED4K-T-LE5F	2903	38	0.32	0.19	0.17	0.15	700	70-100	77.3	B2-U0-G1
35W32LED4K-T-LE2F	3530	36	0.31	0.19	0.17	0.16	350	70-100	99.3	B1-U0-G1
35W32LED4K-T-LE3F	3400	36	0.31	0.19	0.17	0.16	350	70-100	95.1	B1-U0-G1
35W32LED4K-T-LE4F	3324	36	0.31	0.19	0.17	0.16	350	70-100	93.0	B1-U0-G1
35W32LED4K-T-LE5F	3155	36	0.31	0.19	0.17	0.16	350	70-100	88.2	B2-U0-G1
55W32LED4K-T-LE2F	5149	53	0.47	0.27	0.24	0.22	530	100-150	96.4	B1-U0-G1
55W32LED4K-T-LE3F	4932	54	0.47	0.27	0.24	0.22	530	100-150	90.8	B1-U0-G1
55W32LED4K-T-LE4F	4822	54	0.47	0.27	0.24	0.22	530	100-150	89.8	B1-U0-G1
55W32LED4K-T-LE5F	4576	54	0.5	0.3	0.2	0.2	530.0	100-150	84.9	B1-U0-G1

1 L70 = 100,000 hrs (at ambient temperature = 25°C).
2 System wattage or total luminaire wattage includes the LED module and the LED driver.
3 Note: These guidelines show typical replacements for the HID wattage ranges shown. Replacements should always be confirmed with a photometric layout.
Note | Due to rapid and continuous advances in LED technology, LED luminaire data is subject to change without notice and at the discretion of Philips.



Aerial image provided for reference.



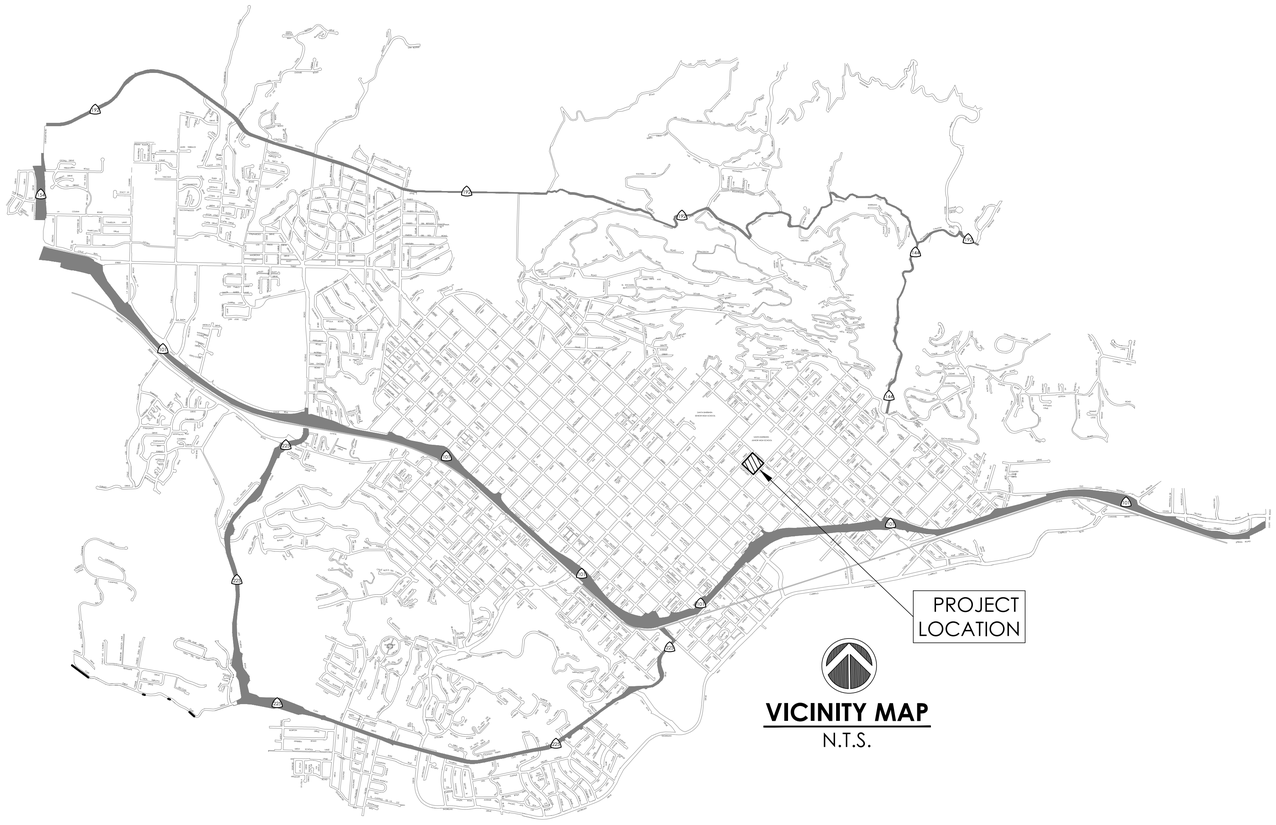
Note: Image shows existing and removed park light locations. Field and court lights shown in red were removed in 2004 due to deferred maintenance issue.

ORTEGA PARK
EXISTING PARK LIGHTING

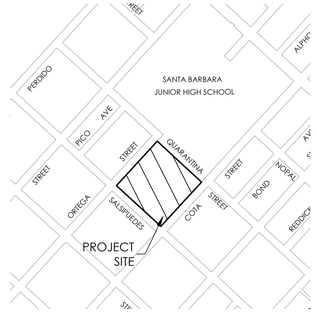
CITY OF SANTA BARBARA

ORTEGA PARK PUBLIC IMPROVEMENTS

PBW2019-00678



VICINITY MAP
N.T.S.



PROJECT LOCATION MAP
N.T.S.

PROJECT DESCRIPTION

PUBLIC IMPROVEMENTS INCLUDE ADDITION OF PARKING STALLS, CURB, GUTTER AND SIDEWALK IMPROVEMENTS ON ORTEGA AND SALSIPUEDES STREETS. PASSENGER LOADING AREAS AND ACCESSIBLE CURB RAMPS AT THE INTERSECTION OF ORTEGA AND SALSIPUEDES STREETS. FOUR NEW ACCESSIBLE CURB RAMPS AND LANDSCAPED BULB-OUTS AT THE INTERSECTION OF SALSIPUEDES AND COTA STREETS. ONE NEW ACCESSIBLE CURB RAMP AT THE INTERSECTION OF ORTEGA AND QUARANTINA STREETS. BIORETENTION AREAS THROUGHOUT.

SURVEY INFORMATION

SURVEY PREPARED IN FEBRUARY 2019 BY:
RRM DESIGN GROUP
10 E FIGUEROA STREET, SUITE 200
SANTA BARBARA, CA 93101
STEVEN B. WEBSTER, P.L.S. 7561

BENCH MARK:

"VERTICAL DATUM FOR THIS SURVEY IS BASED ON THE CITY OF SANTA BARBARA'S 2008 NAVD BENCHMARK LIST, POINT ID CARP1133 BEING CHISELED SQUARE IN BACK OF CURB, SOUTHERLY RETURN, WESTERLY CORNER OF INTERSECTION OF CARPINTERIA ST AND SOLEDAD ST. , HAVING AN ELEVATION OF 36.35."

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS SURVEY IS BASED ON THE CITY OF SANTA BARBARA HORIZONTAL CONTROL NETWORK BETWEEN STATIONS 0013 AND 0015 HAVING A GRID BEARING OF S71°04'09"E AND REFERENCED IN THE RECORD OF SURVEY RECORDED IN BOOK 147 AT PAGE 70 OF OFFICIAL RECORDS.

APPLICABLE DESIGN STANDARDS

- STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREEN BOOK)
- CITY OF SANTA BARBARA PUBLIC WORKS DEPARTMENT CONSTRUCTION STANDARD DETAILS
- 2014 CA M.U.T.C.D. WORK AREA TRAFFIC CONTROL HANDBOOK

SHEET INDEX

SHEET #	SHEET DESIGNATOR	TITLE
1	C1	TITLE SHEET
2	C2	DEMOLITION PLAN - ORTEGA AND SALSIPUEDES STREETS
3	C3	DEMOLITION PLAN - COTA STREET AND WELCOME HOUSE
4	C4	STREET IMPROVEMENT PLAN - ORTEGA STREET
5	C5	STREET IMPROVEMENT PLAN - SALSIPUEDES STREET
6	C6	STREET IMPROVEMENT PLAN - COTA STREET
7	C7	GRADING DETAILS
8	C8	CONSTRUCTION DETAILS
9	C9	SIGNAGE AND STRIPING PLAN
10	C10	HORIZONTAL CONTROL PLAN
11	C11	EROSION CONTROL PLAN
12	L1.0	CONSTRUCTION LEGEND AND NOTES
13	L1.1	CONSTRUCTION PLAN
14	L1.2	CONSTRUCTION PLAN AND ENLARGEMENT AREA
15	L1.3	CONSTRUCTION PLAN
16	L2.0	CONSTRUCTION DETAILS
17	L3.0	IRRIGATION LEGEND AND NOTES
18	L3.1	IRRIGATION PLAN
19	L3.2	IRRIGATION PLAN
20	L3.3	IRRIGATION DETAILS
21	L3.4	IRRIGATION DETAILS
22	L4.0	PLANTING SCHEDULE AND NOTES
23	L4.1	PLANTING PLAN
24	L4.2	PLANTING PLAN AND ENLARGEMENT AREA
25	L4.4	PLANTING DETAILS
26	L5.0	LANDSCAPE NOTES
27	L5.1	LANDSCAPE NOTES

SPECIAL INSPECTIONS

THE FOLLOWING ARE MANDATORY SPECIAL INSPECTIONS BY THE CITY PUBLIC WORKS INSPECTOR FOR STORM WATER POST-CONSTRUCTION IMPROVEMENTS (BMPs):

- BIORETENTION: PRE-CONSTRUCTION MEETING, EXCAVATION AND SUBGRADE, UNDERDRAIN INSTALLATION, ROCK AND SOIL LAYER INSTALLATIONS, FINAL INSPECTION
- PERMEABLE PAVEMENT: PRE-CONSTRUCTION MEETING, EXCAVATION AND SUBGRADE, ROCK LAYER INSTALLATION, FINAL INSPECTION

INSPECTIONS SHALL BE CALLED IN BY CONTRACTOR 72 HOURS PRIOR TO NEEDED INSPECTION. THE CITY WILL THEN ROUTE TO THE QSP INSPECTOR OR THIRD PARTY COMPANY.

ABBREVIATION LEGEND

BC	BEGINNING OF CURB	MH	MANHOLE
CL	CENTERLINE	NTS	NOT TO SCALE
DS	DOWNSPOUT	R/W	RIGHT OF WAY
E	ELECTRICAL	S	SEWER
EC	END OF CURVE	SD	STORM DRAIN
FH	FIRE HYDRANT	T	TELEPHONE
FL	FLOW LINE	TC	TOP OF CURB
G	GAS	PCC	POINT OF COMPOUND CURVE
		PRC	POINT OF REVERSE CURVE
		W	WATER

LINETYPE AND SYMBOL LEGEND

- W — EXISTING WATER MAIN
- G — EXISTING GAS MAIN
- S — EXISTING SEWER MAIN
- E — EXISTING SCE MAIN
- SD — EXISTING STORM DRAIN MAIN
- OHW — EXISTING OVERHEAD WIRE
- CTV — EXISTING UNDERGROUND CABLE TV
- E — EXISTING UNDERGROUND ELECTRIC
- T — EXISTING UNDERGROUND TELEPHONE
- EXISTING FIRE HYDRANT (4"X2.5"X2.5")
- EXISTING WATER VALVE
- EXISTING GAS VALVE
- EXISTING GAS METER
- EXISTING WATER METER
- EXISTING ELECTRIC BOX
- EXISTING CLEANOUT
- EXISTING DRAIN OUTLET
- EXISTING POWER POLE
- EXISTING STREET SIGN
- EXISTING STREET LIGHT
- EXISTING TRAFFIC SIGNAL BOX
- EXISTING DRIVEWAY
- W — PROPOSED WATER MAIN
- SS — PROPOSED SEWER LATERAL
- SD — PROPOSED STORM DRAIN
- RIGHT OF WAY LINE
- SAWCUT LINE

CONTACTS	ORGANIZATION	TITLE	NAME	EMAIL	PHONE
WATER	CITY OF SANTA BARBARA	WATER DISTRIBUTION SUPERVISOR	HAMMURABI (RABI) DAYS	hdays@SantaBarbaraCA.gov	(805) 564-5409
SANITARY SEWER	CITY OF SANTA BARBARA	WASTEWATER COLLECTION SUPERINTENDENT	BRADLEY RAHRER	brahrer@SantaBarbaraCA.gov	(805) 560-7531
ELECTRICITY	SOUTHERN CALIFORNIA EDSION	EDISON PLANNER	TIM DAVIS	timothy.davis.@sce.com	(805) 396-0300
TELEPHONE	VERIZON CALIFORNIA	CONTRACT ENGINEER	JONATHAN TRELATSKY	jonathan.trelatsky@ftr.com	(805) 388-2266
NATURAL GAS	SOUTHERN CALIFORNIA GAS COMPANY	PLANNING ASSOCIATE	MIKE MORENO	mjmoreno@semprautilities.com	(805) 681-8061
CELLULAR COMMUNICATIONS	CROWN CASTLE	SITE DEVELOPMENT MANAGER	DANIEL NUESKE	daniel.nueske@crowncastle.com	(714) 472-1577
CABLE TELEVISION	COX COMMUNICATIONS	CONSTRUCTION PLANNER	CARL GIVENS	coxfacilityinquiries@cox.com	(805) 681-3842
ENGINEERING	CITY OF SANTA BARBARA	PRINCIPAL ENGINEER	ADAM HENDEL	ahendel@santabarbara.CA.gov	(805) 897-1921
INSPECTIONS	CITY OF SANTA BARBARA	PUBLIC WORKS INSPECTOR	RANDY WARD	rward@santabarbaraca.gov	(805) 564-5396

811 Know what's below. Call before you dig.

REGISTERED PROFESSIONAL ENGINEER
MICHAEL C. HAMILTON
NO 62696
CIVIL
STATE OF CALIFORNIA

DATE

SUPERVISING CIVIL ENGINEER

RRM Design Group
10 E. Figueroa St., Ste. 200 • Santa Barbara, CA 93101
p: (805) 963-8283 • f: (805) 963-8184

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE

ORIGINAL SIGNED DATE

DESIGN
DRAWN
CHECKED

NO.	REVISIONS	DATE	APPROVED

PUBLIC IMPROVEMENT PLANS
ORTEGA PARK
TITLE SHEET

03/06/2020
DATE

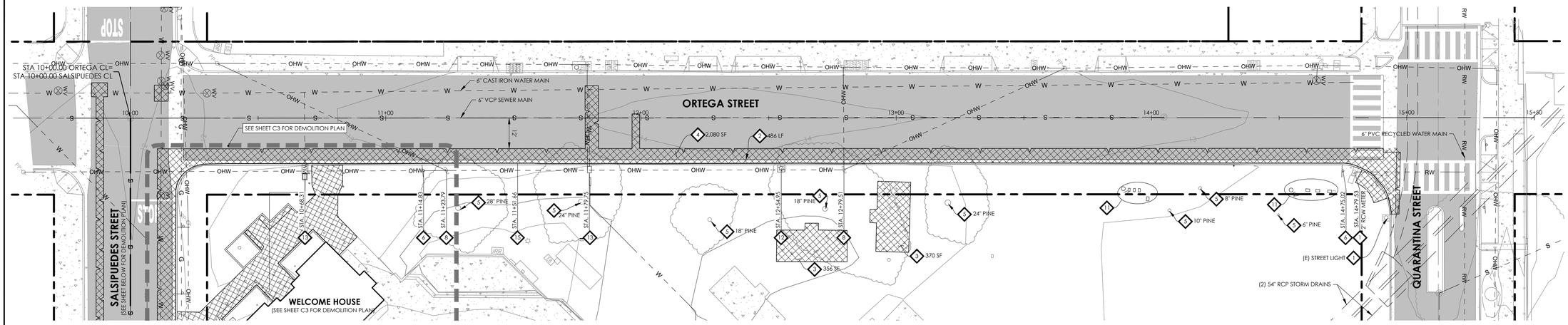
2019-00678
PBW. NO.

- BID NO. | C1 SHT. DES.

C-1-4879
DWG. NO.

SHT. 1 OF 27

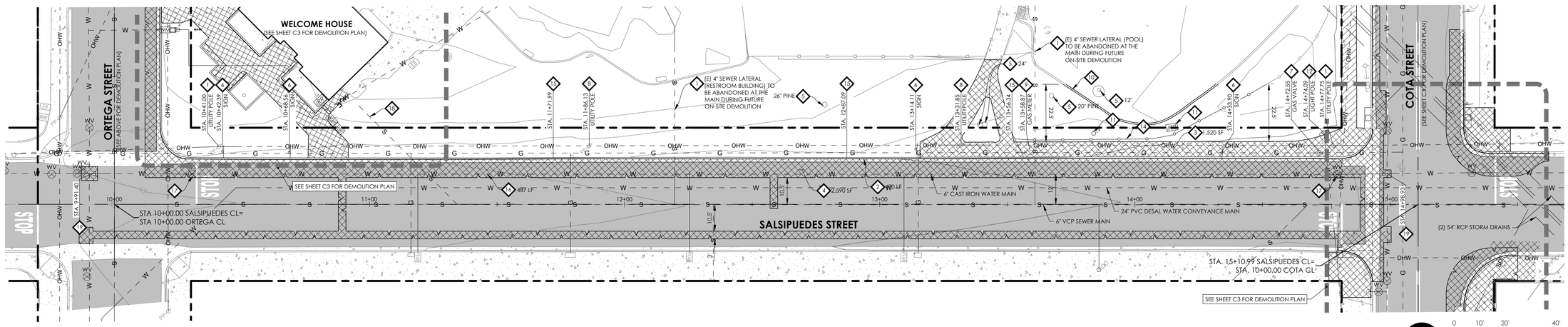
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ORTEGA STREET (STA 10+00 TO 15+00)

SCALE 1"=20'

SCALE: 1" = 20'



SALSIPUEDES STREET (STA 10+00 TO 15+00)

SCALE 1"=20'

SCALE: 1" = 20'

GENERAL NOTES:

1. SITE GRADING SHALL CONFORM TO THE RECOMMENDATIONS MADE BY THE GEOTECHNICAL ENGINEER IN THE APPROVED SOILS REPORT.
2. ALL EXISTING UNDERGROUND UTILITY INFORMATION SHOWN IS GATHERED FROM BEST AVAILABLE RESOURCES. ACCURACY OF HORIZONTAL AND VERTICAL INFORMATION MAY NOT BE PRECISE.
3. CONTRACTOR TO VERIFY ALL UTILITY CONNECTIONS PRIOR TO CONSTRUCTION.
4. EXISTING SURVEY MONUMENTS SHALL BE TIED OUT AND PRECONSTRUCTION CORNER RECORD SHALL BE FILED PRIOR TO THE ISSUANCE OF CONSTRUCTION PERMIT.

EXISTING PARKING COUNT

LOCATION	ACCESSIBLE SPACE	STANDARD SPACE	ACCESSIBLE PASSENGER LOADING	STANDARD PASSENGER LOADING
ORTEGA STREET	0	20	0	0
SALSIPUEDES STREET	2	18	0	0
TOTAL	2	38	0	0
	40 PARKING SPACES		0 PASSENGER LOADING SPACES	

DEMOLITION AND PROTECTION NOTES

1. PROTECT IN PLACE.
2. REMOVE EXISTING CURB AND GUTTER. LIMITS PER PLAN.
3. SAWCUT AND REMOVE EXISTING SIDEWALK/CONCRETE. AREA PER PLAN.
4. SAWCUT AND REMOVE EXISTING ASPHALT PAVING. LIMITS PER PLAN.
5. REMOVE EXISTING TREE.
6. REMOVE AND SALVAGE EXISTING STREET SIGN.
7. ADJUST EXISTING UTILITY BOX OR VALVE TO PROPOSED FINISH GRADE.
8. EXISTING UTILITY POLE IN CONFLICT WITH PROPOSED IMPROVEMENTS TO BE REMOVED/RELOCATED BY UTILITY PROVIDER.
9. RELOCATE EXISTING GAS METER TO PROPOSED SIDEWALK. COORDINATE RELOCATION WITH GAS COMPANY.
10. REMOVE EXISTING MOW CURB TO EXTENTS SHOWN.
11. REMOVE AND REPLACE EXISTING IRRIGATION EQUIPMENT PER LANDSCAPE PLANS.
12. REMOVE EXISTING STREET LIGHT.
13. EXISTING WATER METER AND SERVICE LINE TO BE UPSIZED. SEE SHEET C4.
14. REMOVE EXISTING WOOD FENCE TO EXTENTS SHOWN.

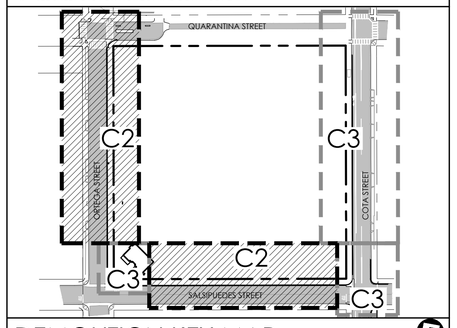
DEMOLITION AND PROTECTION NOTES

15. REMOVE PORTION OF EXISTING CURB DRAIN OUTLET IN CONFLICT WITH PROPOSED IMPROVEMENTS. CONTRACTOR TO VERIFY UPSTREAM CONNECTION AND RECONNECT WITH PROPOSED IMPROVEMENTS IF NECESSARY.
16. REMOVE EXISTING 6" CAST IRON WATER MAIN TO EXTENTS SHOWN.
17. REMOVE EXISTING WATER VALVE.
18. PROTECT EXISTING SEWER LATERAL TO WELCOME HOUSE. INSPECTION OF EXISTING LATERAL TO BE SUBMITTED TO S.L.I.P. COORDINATOR FOR REVIEW AND APPROVAL. ALL DEFECTS SHALL BE REPAIRED PRIOR TO THE COMPLETION OF WORK, INCLUDING LATERAL TO SEWER MAIN CONNECTION.
19. CUT AND CAP EXISTING WATER MAIN.

LEGEND

- PROPERTY LINE
- CENTERLINE
- EXISTING AC PAVING TO REMAIN
- EXISTING AC PAVING TO BE REMOVED
- EXISTING CONCRETE PAVING TO REMAIN
- EXISTING CONCRETE PAVING TO BE REMOVED

NOTES:
1. SEE SHEETS C4-C6 FOR STREET IMPROVEMENT PLANS.
2. SEE SHEETS L4.1-L4.3 FOR LANDSCAPE PLANS.
3. SEE SHEET C9 FOR SIGNAGE AND STRIPING PLAN.
4. SEE SHEET C10 FOR HORIZONTAL CONTROL PLAN.



DEMOLITION KEY MAP

NTS

SUPERVISING CIVIL ENGINEER

DATE

REGISTERED PROFESSIONAL ENGINEER
MICHAEL C. HAMILTON
NO 62696
CIVIL
STATE OF CALIFORNIA

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE

ORIGINAL SIGNED DATE

DESIGN
DRAWN
CHECKED

DATE APPROVED

REVISIONS

NO.

PUBLIC IMPROVEMENT PLANS

ORTEGA PARK

DEMOLITION PLAN - ORTEGA AND SALSIPUEDES STREETS

06/26/2020
DATE

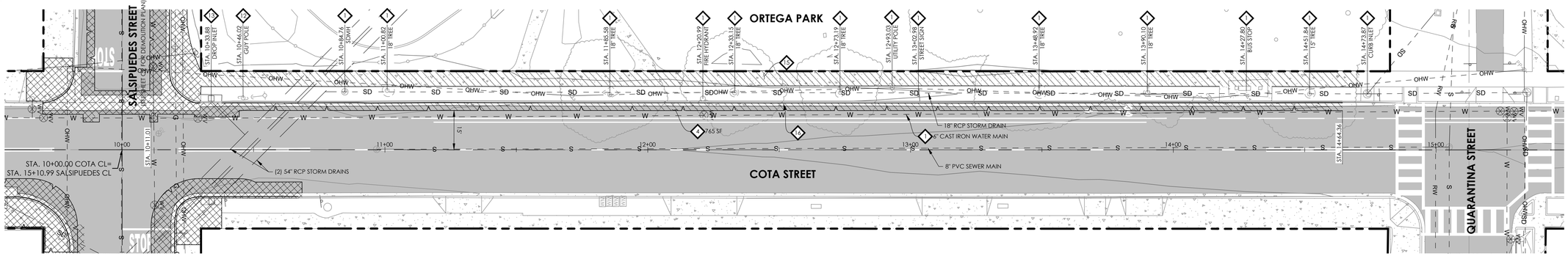
2019-00678
PBW. NO.

- BID NO.
C2 SHT. DES.

C-1-4879
DWG. NO.

SHT. 2 OF 27

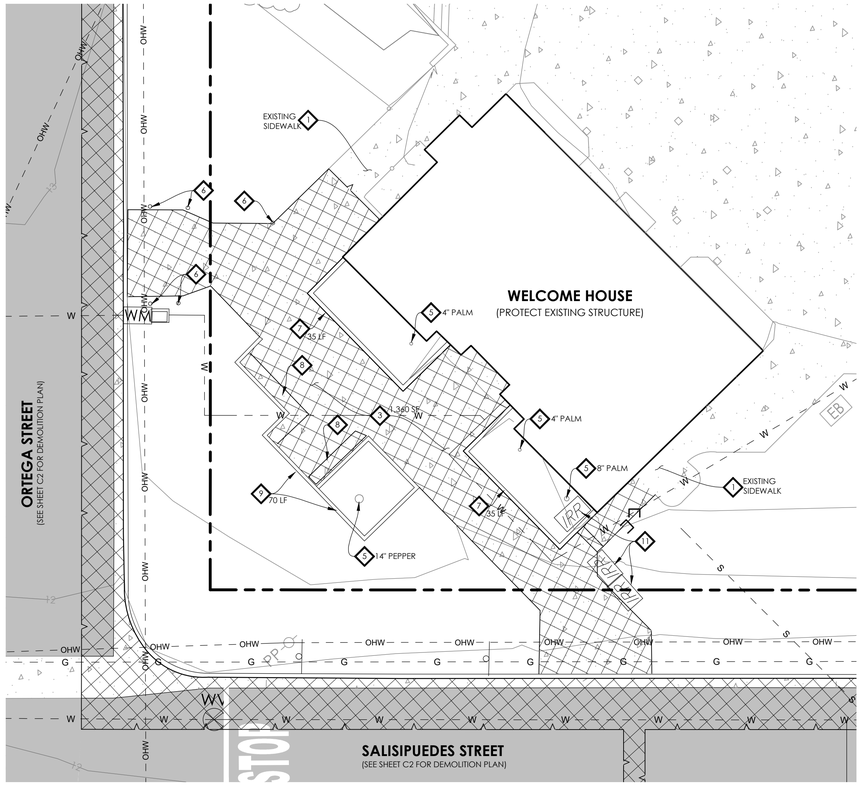
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COTA STREET (STA 10+00 TO 15+00)

SCALE 1"=20'

SCALE: 1" = 20'



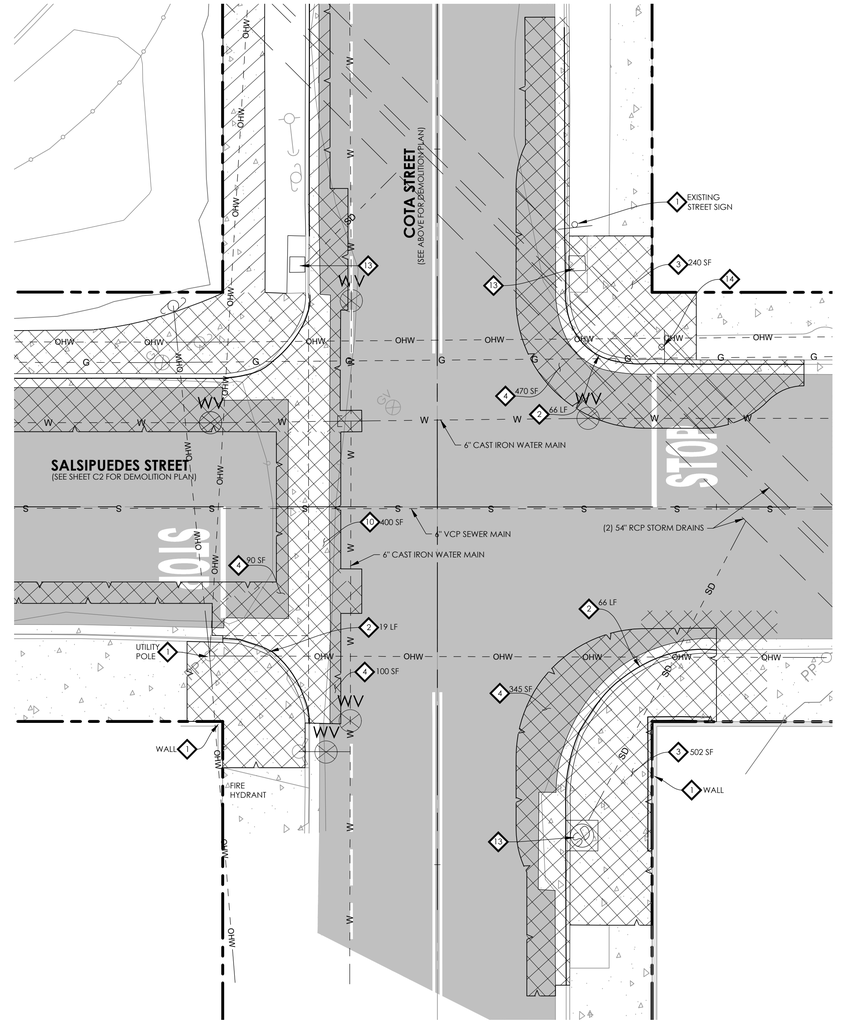
WELCOME HOUSE

SCALE 1"=10'

SCALE: 1" = 10'

LEGEND

- PROPERTY LINE
- CENTERLINE
- EXISTING AC PAVING TO REMAIN
- EXISTING AC PAVING TO BE REMOVED
- EXISTING CONCRETE PAVING TO REMAIN
- EXISTING CONCRETE PAVING TO BE REMOVED
- EXISTING CONCRETE PAVING MAINTENANCE AREA



COTA STREET AND SALISIPUEDES STREET INTERSECTION

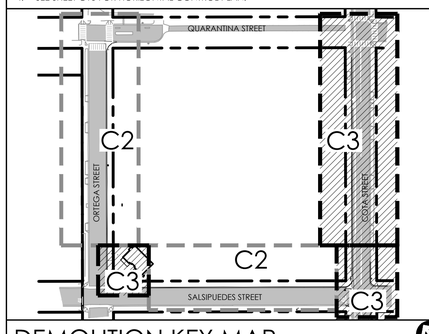
SCALE 1"=10'

SCALE: 1" = 10'

DEMOLITION AND PROTECTION NOTES

1. PROTECT IN PLACE.
2. REMOVE EXISTING CURB AND GUTTER. LIMITS PER PLAN.
3. SAWCUT AND REMOVE EXISTING SIDEWALK/CONCRETE. AREA PER PLAN.
4. SAWCUT AND REMOVE EXISTING ASPHALT PAVING. LIMITS PER PLAN.
5. REMOVE EXISTING TREE.
6. REMOVE EXISTING BOLLARD.
7. REMOVE EXISTING PLANTER CURB.
8. REMOVE EXISTING BENCH.
9. REMOVE EXISTING PLANTER WALL.
10. SAWCUT AND REMOVE EXISTING CONCRETE GUTTER. LIMITS PER PLAN.
11. REMOVE AND REPLACE EXISTING IRRIGATION EQUIPMENT PER LANDSCAPE PLANS.
12. EXISTING FRONTIER GUY POLE TO BE REPLACED OR UPRIGHTED. COORDINATE WITH UTILITY PROVIDER.
13. REMOVE EXISTING DROP INLET.
14. REMOVE EXISTING STREET SIGN. REINSTALL PER SHEET 5.
15. SAWCUT AND REMOVE ANY EXISTING UPLIFTED OR DAMAGED SIDEWALK. DO NOT DISTURB SUBGRADE.
16. SAWCUT AND REMOVE ANY EXISTING UPLIFTED OR DAMAGED CURB AND GUTTER.

NOTES:
1. SEE SHEETS C4-C6 FOR STREET IMPROVEMENT PLANS.
2. SEE SHEETS L4.1-L4.3 FOR LANDSCAPE PLANS.
3. SEE SHEET C9 FOR SIGNAGE AND STRIPING PLAN.
4. SEE SHEET C10 FOR HORIZONTAL CONTROL PLAN.



DEMOLITION KEY MAP

NTS

REGISTERED PROFESSIONAL ENGINEER
MICHAEL C. HAMILTON
NO 62696
CIVIL
STATE OF CALIFORNIA

SUPERVISING CIVIL ENGINEER DATE

CITY OF SANTA BARBARA CALIFORNIA

rrm design group

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE

ORIGINAL SIGNED DATE

DESIGN
DRAWN
CHECKED

DATE APPROVED

REVISIONS

NO. | DATE

PUBLIC IMPROVEMENT PLANS

ORTEGA PARK

DEMOLITION PLAN - COTA STREET AND WELCOME HOUSE

03/06/2020
DATE

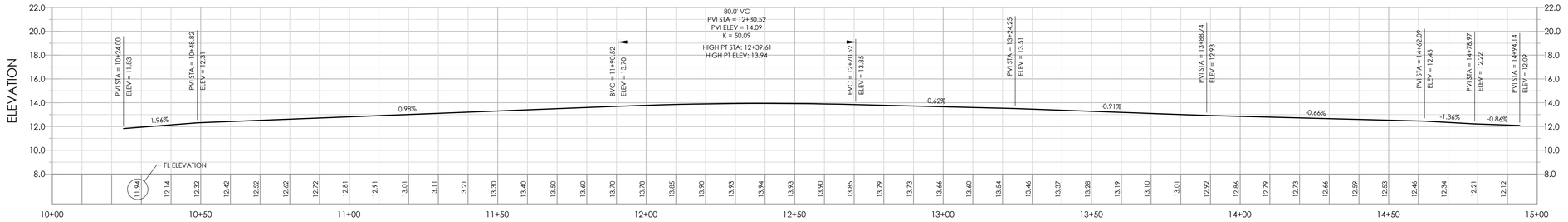
2019-00678
PBW. NO.

- BID NO. | C3 SHT. DES.

C-1-4879
DWG. NO.

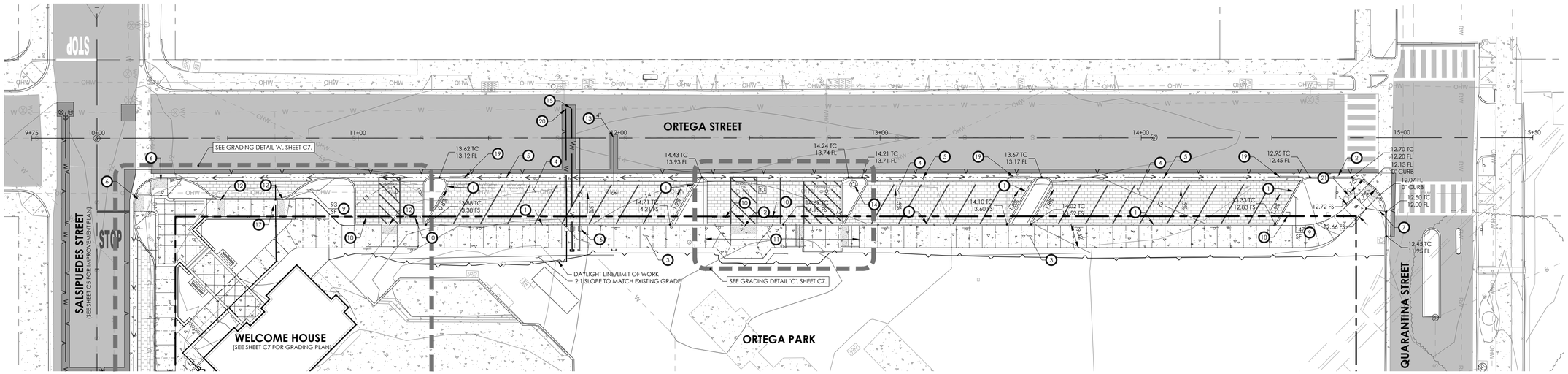
SHT. 3 OF 27

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ORTEGA STREET SOUTHERN FLOW LINE PROFILE

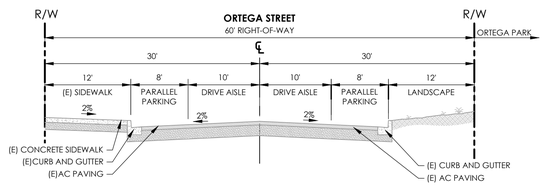
HORIZONTAL SCALE 1"=20'
VERTICAL SCALE 1"=5'



ORTEGA STREET (STA 10+00 TO 15+00)

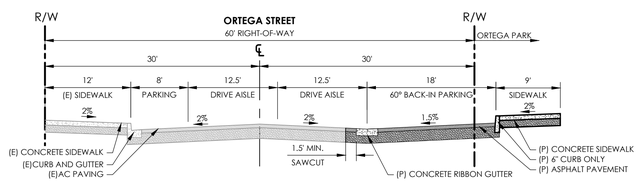
SCALE 1"=20'

0 10' 20' 40'
SCALE: 1" = 20'



EXISTING ORTEGA STREET SECTION

NOT TO SCALE



PROPOSED ORTEGA STREET SECTION

NOT TO SCALE

GENERAL NOTES

1. SLOPE OF ACCESSIBLE PARKING STALLS, LOADING AISLES, VEHICLE PULL-UP SPACE AND PASSENGER DROP-OFF ZONE NOT TO EXCEED 2.0% IN ANY DIRECTION.
2. CROSS-SLOPES OF CROSS WALKS AND ACCESSIBLE PATHS OF TRAVEL NOT TO EXCEED 2.0% AND RUNNING SLOPE NOT TO EXCEED 5.0%.
3. CHANGES IN LEVEL NOT TO EXCEED ¼" IN ACCESSIBLE PARKING STALLS, LOADING AISLES, PASSENGER DROP-OFF ZONE, VEHICLE PULL-UP SPACE AND ALONG ACCESSIBLE PATHS OF TRAVEL.

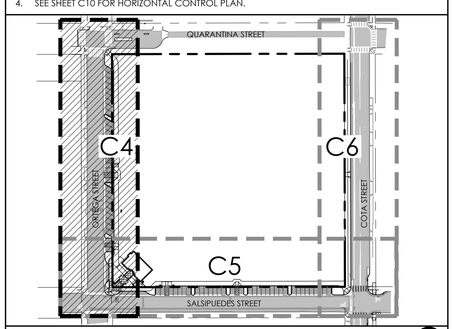
CONSTRUCTION NOTES

1. CONSTRUCT 6" CURB ONLY PER CITY OF SANTA BARBARA STANDARD DETAIL H-02.0.
2. CONSTRUCT STANDARD 6" CONCRETE CURB AND 18" GUTTER PER CITY OF SANTA BARBARA STANDARD DETAIL H-02.0.
3. CONSTRUCT CONCRETE SIDEWALK PER CITY OF SANTA BARBARA STANDARD DETAILS H-06.0 AND H-06.1.
4. CONSTRUCT PERMEABLE PAVEMENT PER DETAIL 'E' SHEET C8.
5. CONSTRUCT CONCRETE RIBBON GUTTER PER DETAIL 'A', SHEET C8.
6. CONSTRUCT ACCESSIBLE CURB RAMP PER CITY OF SANTA BARBARA STANDARD DETAILS H-7.0 AND H-07.1.
7. CONSTRUCT ACCESSIBLE CURB RAMP PER CITY OF SANTA BARBARA STANDARD DETAIL H-7.0 AND H-07.3.
8. CONSTRUCT CURB CUT PER DETAIL 'D', SHEET C8.
9. CONSTRUCT BIORETENTION AREA PER DETAIL 'B', SHEET C8.
10. INSTALL 6' CONCRETE WHEEL STOP PER DETAIL C, SHEET C8.
11. CONSTRUCT CONCRETE SIDEWALK PER CITY OF SANTA BARBARA STANDARD DETAILS H-06.0 AND H-06.1 MODIFIED TO 6" CONCRETE OVER 6" AGGREGATE BASE AT CURB RAMP (TO ALLOW FOR VEHICULAR TRAFFIC).
12. CONSTRUCT ACCESSIBLE CURB RAMP PER CITY OF SANTA BARBARA STANDARD DETAIL H-7.0 MODIFIED AS SHOWN.
13. INSTALL SANITARY SEWER LATERAL (SIZE PER PLAN) PER CITY OF SANTA BARBARA STANDARD DETAILS S-04.0 AND S-04.1, STUB AND CAP 2' BEYOND BACK OF SIDEWALK FOR FUTURE CONNECTION.
14. INSTALL B-16 SLIM LINE STREET LIGHT PER CITY OF SANTA BARBARA STANDARDS.
15. INSTALL 3" WATER SERVICE CONNECTION AND METER BOX FOR 3" METER PER CITY OF SANTA BARBARA STANDARD DETAILS W-05.0, W-05.1, STUB AND CAP 2' BEHIND PROPOSED BACK OF SIDEWALK FOR FUTURE CONNECTION (POOL SERVICE).
16. INSTALL GAS SERVICE LINE AND METER. COORDINATE INSTALLATION WITH GAS COMPANY.

CONSTRUCTION NOTES

17. RELOCATE EXISTING WATER METER TO PROPOSED SIDEWALK AND EXISTING BACKFLOW PREVENTER BEHIND SIDEWALK. RECONSTRUCT EXISTING LINE TO WELCOME HOUSE CONNECTION AND STUB PAST PROPOSED IMPROVEMENTS FOR CONNECTION TO FUTURE RESTROOM BUILDING. MAINTAIN ANY EXISTING CONNECTIONS.
18. INSTALL STREET LIGHT METER PEDESTAL PER CITY OF SANTA BARBARA STANDARD DETAIL L-09.0. COORDINATE INSTALLATION WITH SOUTHERN CALIFORNIA EDISON.
19. INSTALL TRENCH DRAIN AND PERFORATED PIPE TO PERMEABLE PAVEMENT PER DETAIL 'F', SHEET C8.
20. UPSIZE EXISTING WATER SERVICE TO 3" WATER SERVICE CONNECTION AND METER BOX FOR 3" METER PER CITY OF SANTA BARBARA STANDARD DETAILS W-05.0, W-05.1. INSTALL 3" BACKFLOW PREVENTION ASSEMBLY PER CITY OF SANTA BARBARA STANDARD DETAILS W-12.0 AND W-12.1. SERVICE FOR FUTURE SYNTHETIC TURF MAINTENANCE.
21. EXISTING 2" RECLAIMED WATER METER TO BE USED FOR IRRIGATION.

NOTES:
1. SEE SHEETS C2 AND C3 FOR DEMOLITION PLANS.
2. SEE SHEETS L4.1 THROUGH L4.3 FOR LANDSCAPE PLANS.
3. SEE SHEET C9 FOR SIGNAGE AND STRIPING PLAN.
4. SEE SHEET C10 FOR HORIZONTAL CONTROL PLAN.



STREET IMPROVEMENTS KEY MAP

NTS

REGISTERED PROFESSIONAL ENGINEER
MICHAEL C. HAMILTON
NO 62696
CIVIL
STATE OF CALIFORNIA

SUPERVISING CIVIL ENGINEER DATE

CITY OF SANTA BARBARA
CALIFORNIA

rrm design group

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

APPROVED: DATE

CITY ENGINEER

ORIGINAL SIGNED DATE

DESIGN
DRAWN
CHECKED

DATE APPROVED

REVISIONS
NO.

PUBLIC IMPROVEMENT PLANS

ORTEGA PARK

STREET IMPROVEMENT PLAN - ORTEGA STREET

06/26/2020
DATE

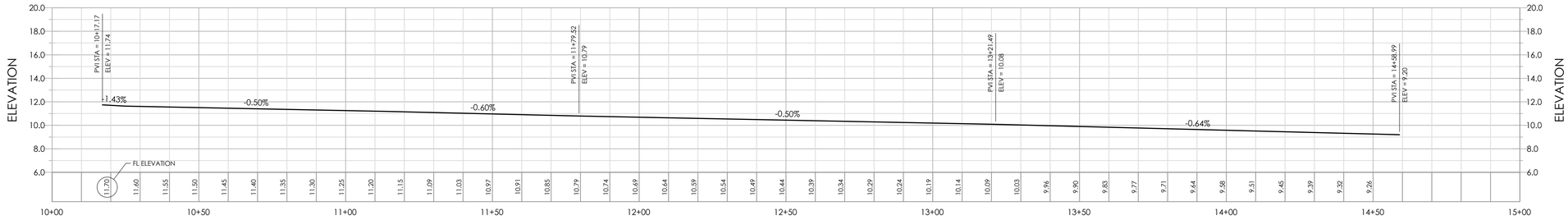
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PBW. NO.

- BID NO.
C4 SHT. DES.

C-1-4879
DWG. NO.

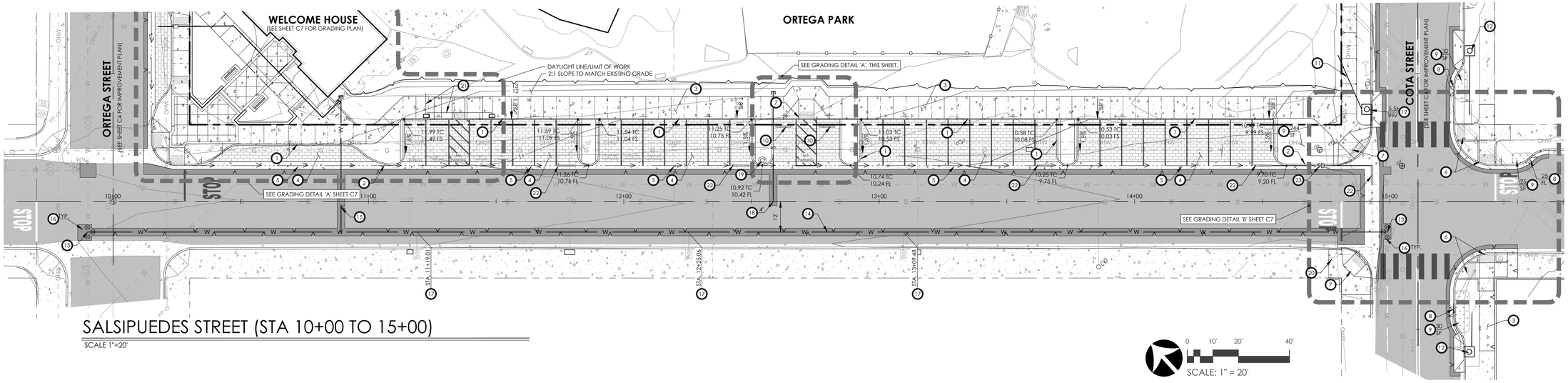
SHT. 4 OF 27

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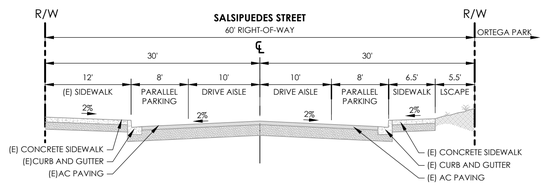
SALSIPUEDES STREET NORTHERN FLOW LINE PROFILE

HORIZONTAL SCALE 1"=20'
VERTICAL SCALE 1"=5'



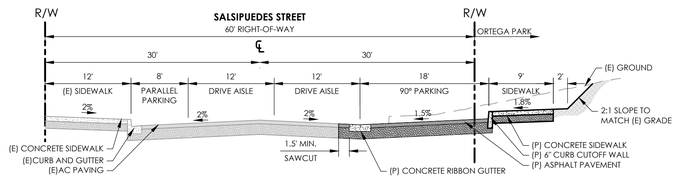
SALSIPUEDES STREET (STA 10+00 TO 15+00)

SCALE 1"=20'



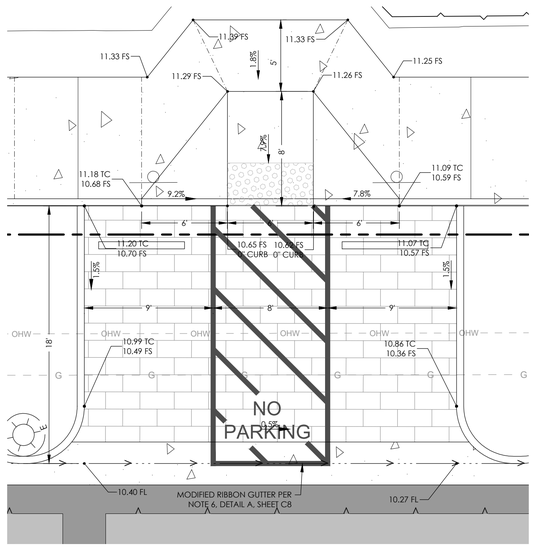
EXISTING SALSIPUEDES STREET SECTION

NOT TO SCALE



PROPOSED SALSIPUEDES STREET SECTION

NOT TO SCALE



A ACCESSIBLE PARKING GRADING DETAIL

SCALE: 1"=5'

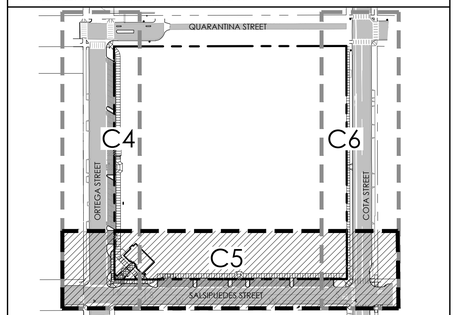
CONSTRUCTION NOTES

1. CONSTRUCT 6" CURB ONLY PER CITY OF SANTA BARBARA STANDARD DETAIL H-02.0.
2. CONSTRUCT STANDARD 6" CONCRETE CURB AND 18" GUTTER PER CITY OF SANTA BARBARA STANDARD DETAIL H-02.0.
3. CONSTRUCT CONCRETE SIDEWALK PER CITY OF SANTA BARBARA STANDARD DETAILS H-06.0 AND H-06.1.
4. CONSTRUCT PERMEABLE PAVEMENT PER DETAIL 'E' SHEET C8.
5. CONSTRUCT CONCRETE RIBBON GUTTER PER DETAIL 'A', SHEET C8.
6. CONSTRUCT ACCESSIBLE CURB RAMP PER CITY OF SANTA BARBARA STANDARD DETAILS H-7.0 AND H-07.1 AND GRADING DETAIL, SHEET 7.
7. CONSTRUCT ACCESSIBLE CURB RAMP PER CITY OF SANTA BARBARA STANDARD DETAIL H-7.0 AND H-07.3 AND GRADING DETAILS.
8. CONSTRUCT CURB CUT PER DETAIL 'D', SHEET C8.
9. CONSTRUCT BIORETENTION AREA PER DETAIL 'B', SHEET C8.
10. INSTALL 6' CONCRETE WHEEL STOP PER DETAIL C, SHEET C8.
11. INSTALL 15" HDPE STORM DRAIN STUB TO PARK FOR FUTURE CONNECTION AT 1.0% MINIMUM SLOPE.
12. INSTALL 4' DROP INLET PER CITY OF SANTA BARBARA STANDARD DETAILS D-01.0 AND D-01.1 WITH GUTTER DEPRESSION TYPE A1 PER DETAIL D-03.1. CONNECT TO EXISTING STORM DRAIN. MATCH EXISTING PIPE DIAMETER, S=0.01 MINIMUM.
13. CONNECT TO EXISTING WATER MAIN.
14. INSTALL 6" PVC C900 SDR-14 WATER MAIN. TRENCH AND BACKFILL PER CITY OF SANTA BARBARA STANDARD DETAILS U-01.0 AND U-01.1.
15. INSTALL 6" FIRE WATER LINE PER CITY OF SANTA BARBARA STANDARD DETAIL W-05.4. STUB PAST PROPOSED IMPROVEMENTS FOR FUTURE CONNECTION.
16. INSTALL VALVE AND VALVE BOX PER CITY OF SANTA BARBARA STANDARD DETAIL W-04.0.
17. CONNECT EXISTING WATER SERVICE TO PROPOSED WATER MAIN PER CITY OF SANTA BARBARA STANDARD DETAILS W-05.0 AND W-05.1.
18. INSTALL SANITARY SEWER LATERAL (SIZE PER PLAN) PER CITY OF SANTA BARBARA STANDARD DETAILS S-04.0 AND S-04.1. STUB AND CAP 2' BEYOND BACK OF SIDEWALK FOR FUTURE CONNECTION.
19. INSTALL B-16 SLIM LINE STREET LIGHT PER CITY OF SANTA BARBARA STANDARDS.
20. REPLACE EXISTING COBRA HEAD STREET LIGHT ON SCE POLE WITH TYPE A-16 SLIM LINE.
21. INSTALL CONDUIT FOR FUTURE EV CHARGING STATIONS. STUB BEHIND SIDEWALK.
22. INSTALL TRENCH DRAIN AND PERFORATED PIPE TO PERMEABLE PAVEMENT PER DETAIL 'F', SHEET C8.
23. INSTALL 4" SCH 40 PVC STORM DRAIN INTERCONNECTING TRENCH DRAINS.

GENERAL NOTES

1. SLOPE OF ACCESSIBLE PARKING STALLS, LOADING AISLES, VEHICLE PULL-UP SPACE AND PASSENGER DROP-OFF ZONE NOT TO EXCEED 2.0% IN ANY DIRECTION.
2. CROSS-SLOPES OF CROSS WALKS AND ACCESSIBLE PATHS OF TRAVEL NOT TO EXCEED 2.0% AND RUNNING SLOPE NOT TO EXCEED 5.0%.
3. CHANGES IN LEVEL NOT TO EXCEED ¼" IN ACCESSIBLE PARKING STALLS, LOADING AISLES, PASSENGER DROP-OFF ZONE, VEHICLE PULL-UP SPACE AND ALONG ACCESSIBLE PATHS OF TRAVEL.

NOTES:
1. SEE SHEETS C2 AND C3 FOR DEMOLITION PLANS.
2. SEE SHEETS L4.1 THROUGH L4.3 FOR PLANTING PLANS.
3. SEE SHEET C9 FOR SIGNAGE AND STRIPING PLAN.
4. SEE SHEET C10 FOR HORIZONTAL CONTROL PLAN.



STREET IMPROVEMENTS KEY MAP

NTS

REGISTERED PROFESSIONAL ENGINEER
MICHAEL C. HAMILTON
NO 62696
CIVIL
STATE OF CALIFORNIA

SUPERVISING CIVIL ENGINEER DATE

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE

ORIGINAL SIGNED DATE

DESIGN
DRAWN
CHECKED

DATE APPROVED

NO. REVISIONS

PUBLIC IMPROVEMENT PLANS

ORTEGA PARK

STREET IMPROVEMENT PLAN - SALSIPUEDES STREET

06/26/2020
DATE

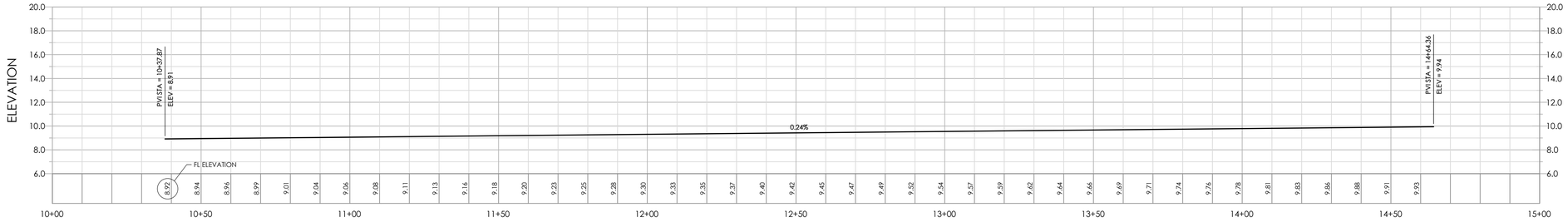
2019-00678
PBW. NO.

- BID NO.
C5 SHT. DES.

C-1-4879
DWG. NO.

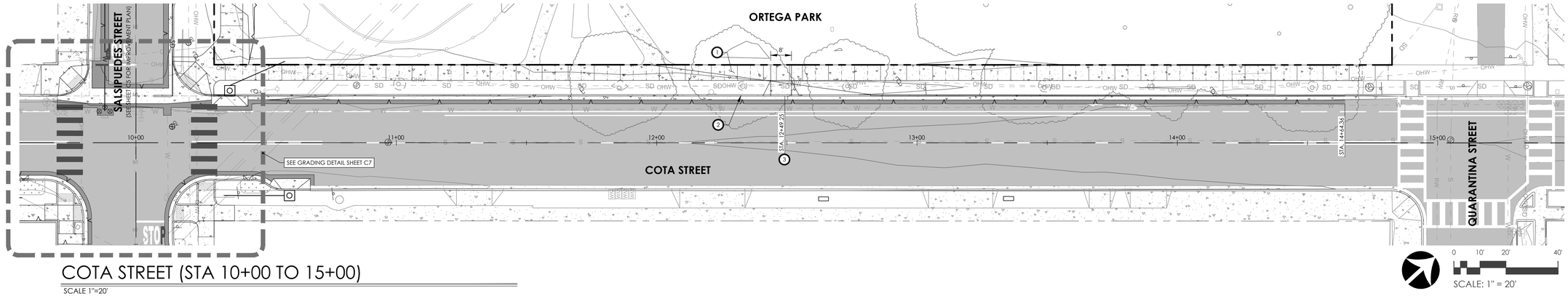
SHT. 5 OF 27

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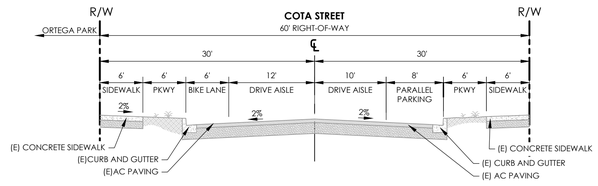
COTA STREET NORTHERN FLOW LINE PROFILE

HORIZONTAL SCALE 1"=20'
VERTICAL SCALE 1"=5'



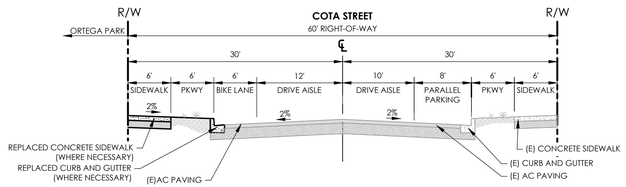
COTA STREET (STA 10+00 TO 15+00)

SCALE 1"=20'



EXISTING COTA STREET SECTION

NOT TO SCALE



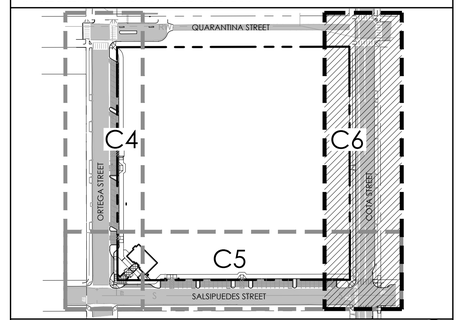
PROPOSED COTA STREET SECTION

NOT TO SCALE

CONSTRUCTION NOTES

1. REPLACE ANY EXISTING UPLIFTED OR DAMAGED CONCRETE SIDEWALK PER CITY OF SANTA BARBARA STANDARD DETAILS H-06.0 AND H-06.1. DO NOT DISTURB SUBGRADE. ALL SIDEWALK SHALL COMPLY WITH ACCESSIBILITY REQUIREMENTS (CROSS-SLOPE NOT TO EXCEED 2.0%, RUNNING SLOPE NOT TO EXCEED 5.0%, CHANGES IN LEVEL NOT TO EXCEED X").
2. REPLACE ANY EXISTING UPLIFTED OR DAMAGED CURB AND GUTTER (STANDARD 6" CONCRETE CURB AND 18" GUTTER) PER CITY OF SANTA BARBARA STANDARD DETAIL H-02.0. DO NOT DISTURB SUBGRADE.
3. CONSTRUCT COMMERCIAL DRIVEWAY PER CITY OF SANTA BARBARA STANDARD DETAIL H-03.1. DRIVEWAY WIDTH (W) PER PLAN AND 3' FLARE WIDTH (X).

NOTES:
1. SEE SHEETS C2 AND C3 FOR DEMOLITION PLANS.
2. SEE SHEETS L4.1 THROUGH L4.3 FOR LANDSCAPE PLANS.
3. SEE SHEET C9 FOR SIGNAGE AND STRIPING PLAN.
4. SEE SHEET C10 FOR HORIZONTAL CONTROL PLAN.



STREET IMPROVEMENTS KEY MAP

NTS

REGISTERED PROFESSIONAL ENGINEER
MICHAEL C. HAMILTON
NO 62696
CIVIL
STATE OF CALIFORNIA

SUPERVISING CIVIL ENGINEER _____ DATE _____

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

APPROVED: _____ DATE _____
CITY ENGINEER _____ ORIGINAL SIGNED DATE _____

DESIGN
DRAWN
CHECKED

DATE APPROVED

REVISIONS
NO.

PUBLIC IMPROVEMENT PLANS
ORTEGA PARK
STREET IMPROVEMENTS - COTA STREET

06/26/2020
DATE

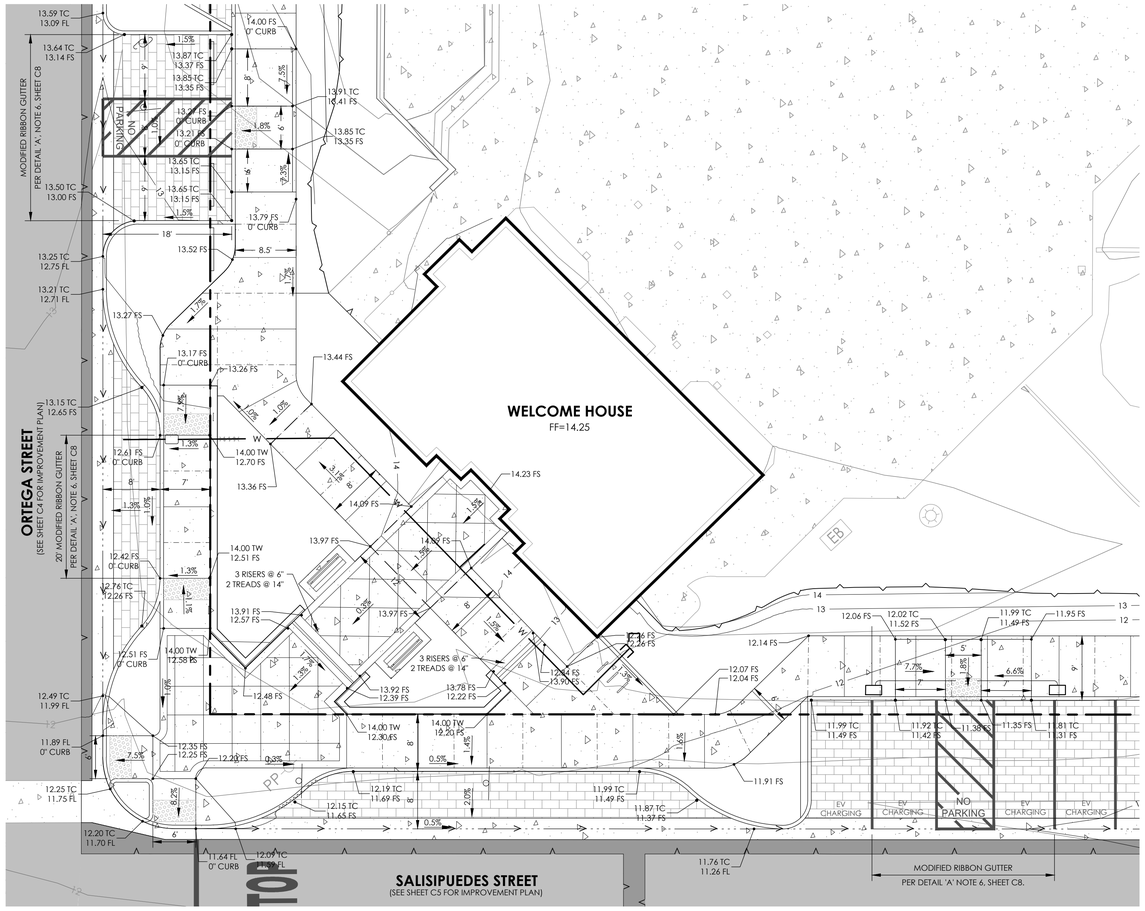
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PBW. NO.

- BID NO.
C6 SHT. DES.

C-1-4879
DWG. NO.

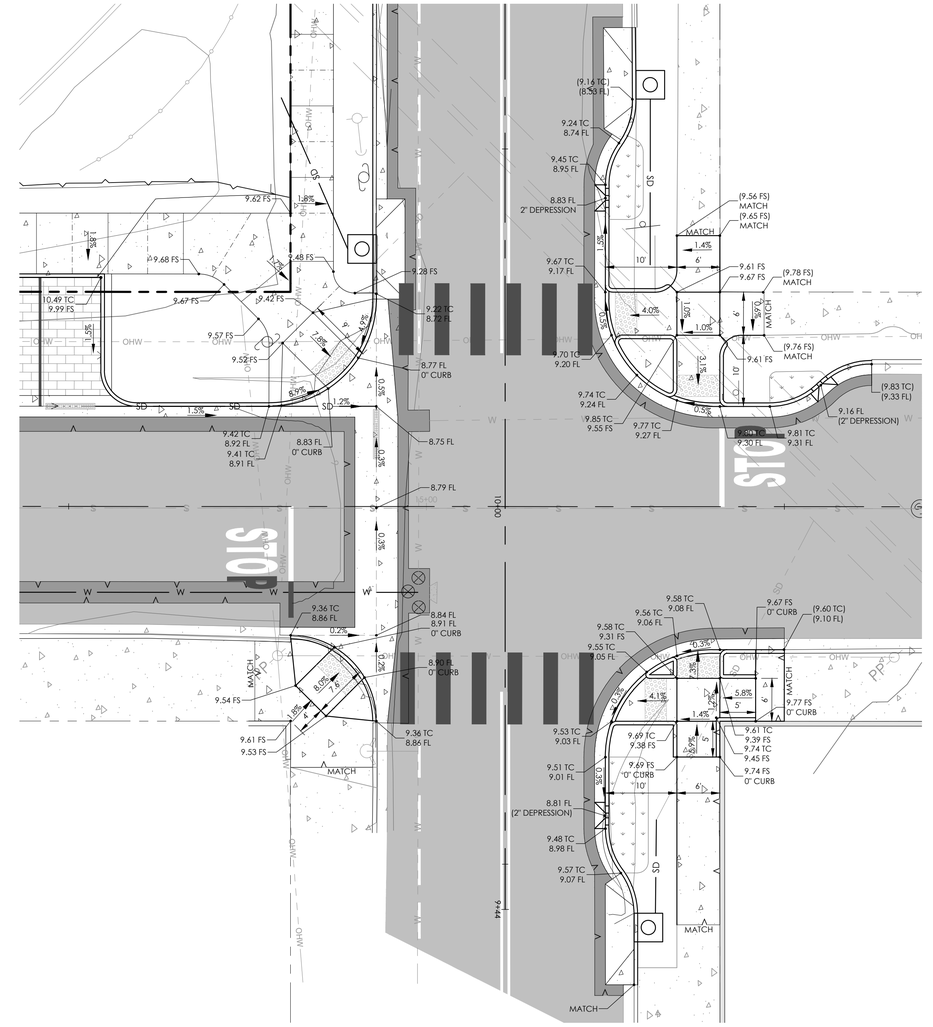
SHT. 6 OF 27

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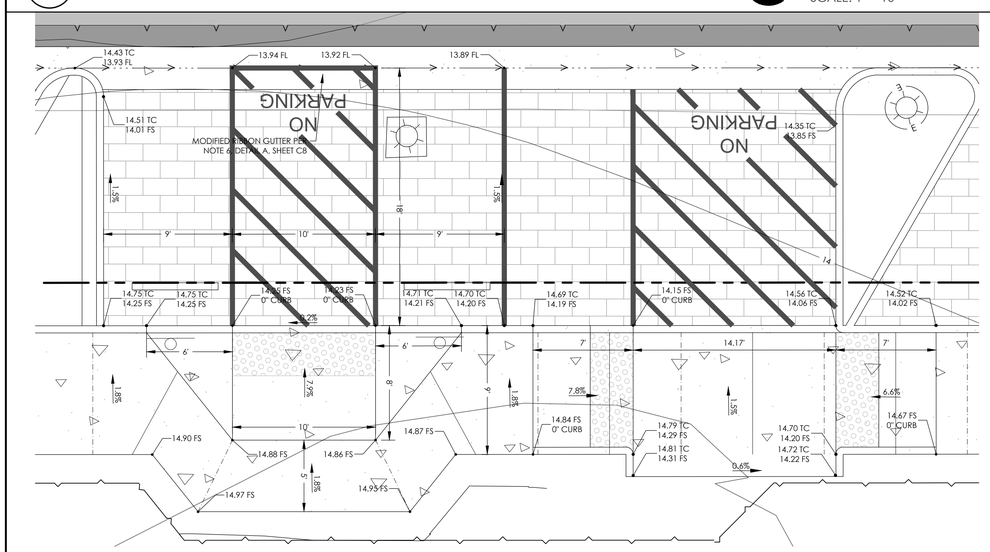
A WELCOME HOUSE- GRADING DETAIL

SCALE 1"=10'



B COTA & SALSIPUEDES INTERSECTION- GRADING DETAIL

SCALE 1"=10'



C ACCESSIBLE PARKING GRADING DETAIL

SCALE: 1"=5'

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE

ORIGINAL SIGNED DATE —

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PUBLIC IMPROVEMENT PLANS

ORTEGA PARK

GRADING DETAILS

06/26/2020
DATE

2019-00678
PBW. NO.

- BID NO. | C7 SHT. DES.

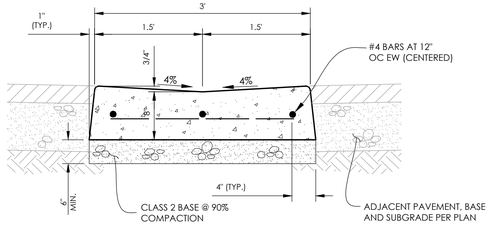
C-1-4879
DWG. NO.

SHT. 7 OF 27

REGISTERED PROFESSIONAL ENGINEER
MICHAEL C. HAMILTON
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CIVIL
STATE OF CALIFORNIA

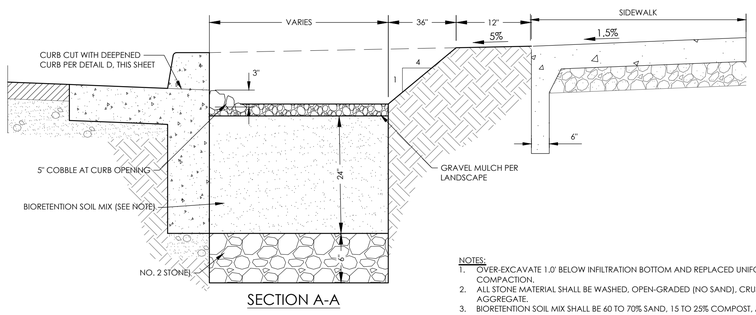
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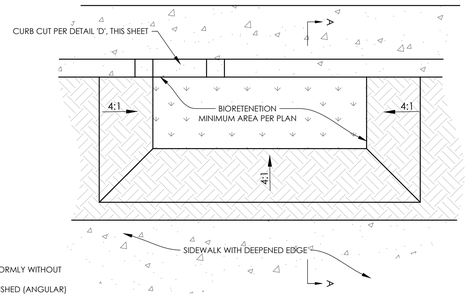


NOTES:
1. CONCRETE SHALL BE CLASS 532-CFW-3250.
2. PROVIDE WEAKENED PLANE JOINTS AT 10' INTERVALS.
3. PROVIDE EXPANSION JOINTS AT 20' INTERVALS.
4. EXPOSED EDGES SHALL HAVE A 1/2" TOOLED RADIUS.
5. SUBGRADE SOILS SHALL BE COMPACTED TO 90% OF MAXIMUM DENSITY.
6. WHERE RIBBON GUTTER IS PLACED AT END OF ACCESSIBLE PARKING STALLS OR AISLES, GUTTER CROSS SLOPE SHALL BE MODIFIED TO 1.5%.

A CONCRETE RIBBON GUTTER
SCALE: N.T.S.



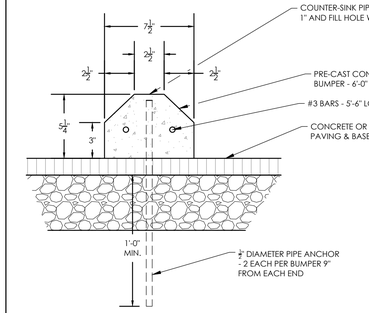
SECTION A-A



PLAN

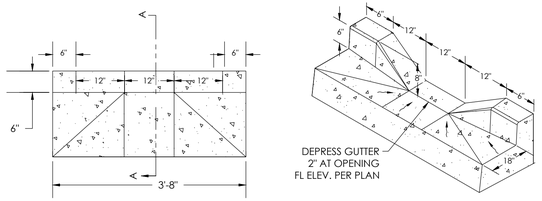
NOTES:
1. OVER-EXCAVATE 1.0' BELOW INFILTRATION BOTTOM AND REPLACED UNIFORMLY WITHOUT COMPACTION.
2. ALL STONE MATERIAL SHALL BE WASHED, OPEN-GRADED (NO SAND), CRUSHED (ANGULAR) AGGREGATE.
3. BIORETENTION SOIL MIX SHALL BE 60 TO 70% SAND, 15 TO 25% COMPOST, AND 10 TO 20% CLEAN TOPSOIL. THE ORGANIC CONTENT SHALL BE 8 TO 12% AND PH RANGE SHALL BE 5.5 TO 7.5.
4. EXTEND DEEPENED CURB AND SIDEWALK EDGE 5' BEYOND BOTH SIDES OF BIORETENTION AREA.

B BIORETENTION CROSS-SECTION
SCALE: N.T.S.



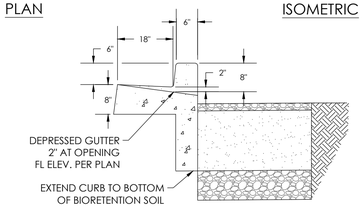
NOTE: WHEEL STOP SHALL BE PLACED 1' FROM LEFT PARKING STRIPE AND 30" FROM FACE OF CURB.

C WHEEL STOP
SCALE: N.T.S.



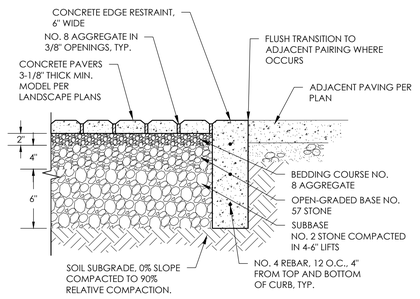
PLAN

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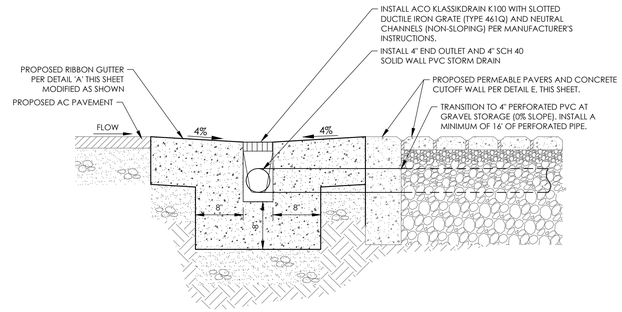
SECTION A-A
ADJACENT TO BIORETENTION

D CURB CUT
SCALE: N.T.S.



NOTES:
1. ALL AGGREGATE BASE MATERIAL SHALL BE WASHED, OPEN-GRADED (NO SAND), CRUSHED (ANGULAR) AGGREGATE.

E PERMEABLE PAVEMENT
SCALE: N.T.S.



NOTES:
1. INSTALL TWO ONE-METER (39.37") CHANNELS AT EACH TRENCH DRAIN LOCATION.

F TRENCH DRAIN TO PERMEABLE PAVEMENT
SCALE: N.T.S.

SUPERVISING CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
MICHAEL C. HAMILTON
NO 62696
CIVIL
STATE OF CALIFORNIA

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE

ORIGINAL SIGNED DATE

DESIGN
DRAWN
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NO.	DATE	APPROVED	REVISIONS
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PUBLIC IMPROVEMENT PLANS
ORTEGA PARK
CONSTRUCTION DETAILS

06/26/2020
DATE

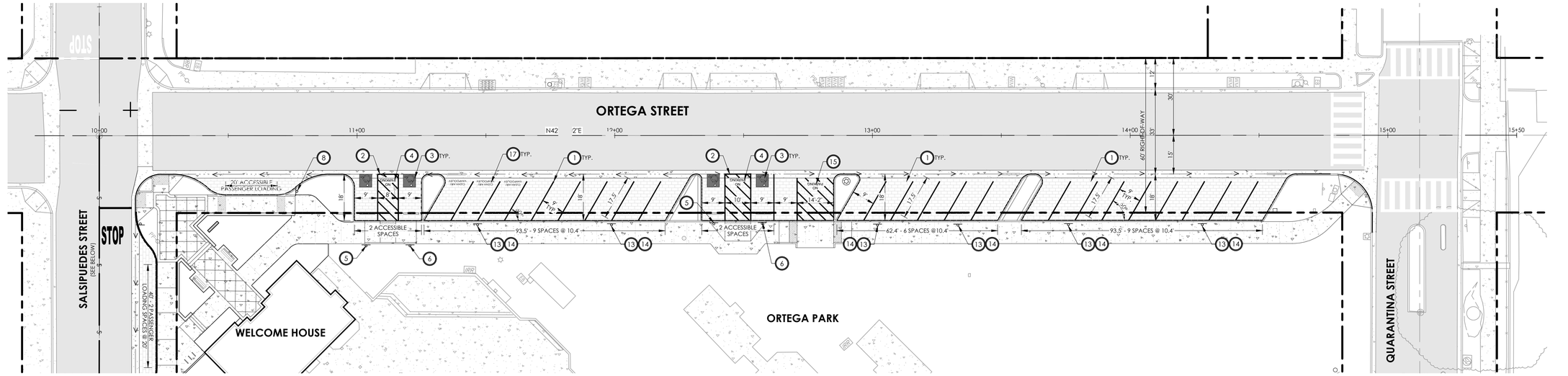
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C-1-4879
DWG. NO.

SHT. 8 OF 27

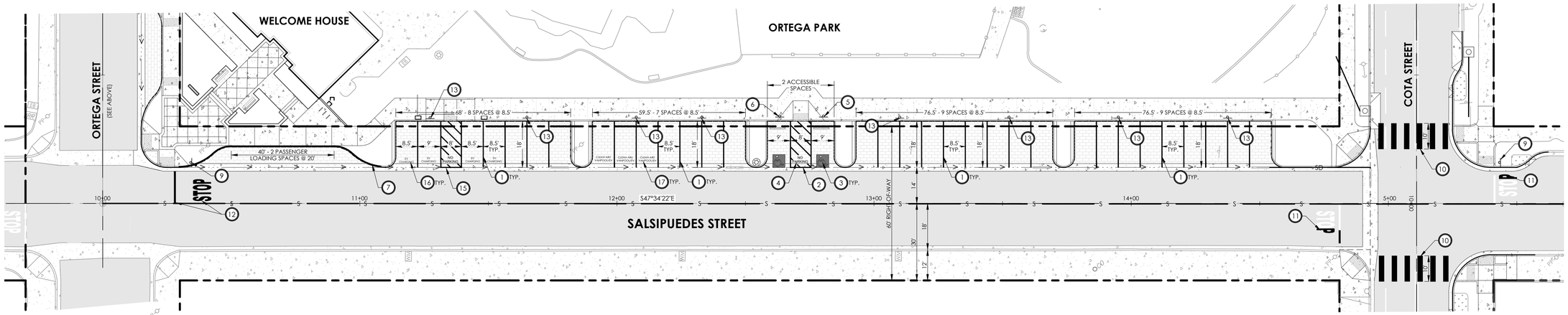
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ORTEGA STREET (STA 10+00 TO 15+00)

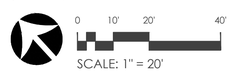
SCALE 1"=20'

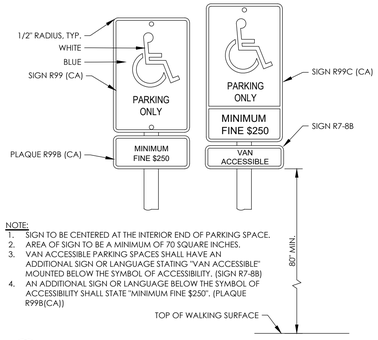




SALSIPUEDES STREET (STA 10+00 TO 15+00)

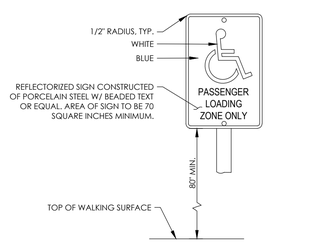
SCALE 1"=20'





NOTE:
1. SIGN TO BE CENTERED AT THE INTERIOR END OF PARKING SPACE.
2. AREA OF SIGN TO BE A MINIMUM OF 70 SQUARE INCHES.
3. VAN ACCESSIBLE PARKING SPACES SHALL HAVE AN ADDITIONAL SIGN OR LANGUAGE STATING "VAN ACCESSIBLE" MOUNTED BELOW THE SYMBOL OF ACCESSIBILITY. (SIGN R7-8B)
4. AN ADDITIONAL SIGN OR LANGUAGE BELOW THE SYMBOL OF ACCESSIBILITY SHALL STATE "MINIMUM FINE $250". (PLAQUE R99B(CA))

A ACCESSIBLE PARKING SIGNS
SCALE: NTS



B ACCESSIBLE LOADING ZONE SIGN
SCALE: NTS

PROPOSED PARKING COUNT

LOCATION	ACCESSIBLE STALL	EV CHARGING STALL	CLEAN AIR/ VANPOOL/ EV STALL	STANDARD STALL	ACCESSIBLE PASSENGER LOADING	STANDARD PASSENGER LOADING
ORTEGA STREET	4	0	3	22	1	0
SALSIPUEDES STREET	2	4	3	25	0	2
TOTAL	6	4	6	47	1	2
			63 PARKING STALLS		3 PASSENGER LOADING SPACES	

GENERAL NOTES

1. ALL SIGN POST INSTALLATION SHALL BE PER CITY OF SANTA BARBARA STANDARD DETAILS H-08.0 AND H-08.2.
2. CONTRACTOR TO REPLACE ALL DAMAGED PAVEMENT MARKINGS IN KIND.

CONSTRUCTION NOTES

1. PROVIDE 4" WHITE PARKING STRIPE.
2. PROVIDE 4" BLUE LINE BORDER WITH 4" WHITE LINE DIAGONALS AT 3' MAX SPACING.
3. PROVIDE WHITE INTERNATIONAL SYMBOL OF ACCESSIBILITY MARKING WITH WHITE BORDER ON BLUE BACKGROUND. SYMBOL SHALL BE 36" MINIMUM HEIGHT.
4. PROVIDE 12' HIGH WHITE LETTERS.
5. INSTALL STANDARD ACCESSIBLE PARKING SIGN PER DETAIL 'A', THIS SHEET.
6. INSTALL VAN ACCESSIBLE PARKING SIGN PER DETAIL 'A', THIS SHEET.
7. PAINT CURB WHITE.
8. INSTALL ACCESSIBLE LOADING ZONE SIGN PER DETAIL 'B', THIS SHEET.
9. REINSTALL EXISTING STOP SIGN.
10. PROVIDE CONTINENTAL CROSS WALK STIRPING PER CALTRANS STANDARD PLAN A24F WITH 2' LINES AT 4.5' ON CENTER.
11. REPAINT EXISTING STRIPING AS NEEDED.
12. PROVIDE WHITE 'STOP' PAVEMENT MARKING PER CALTRANS STANDARD PLAN A24D AND 12' WIDE STOP BAR STRIPE.
13. INSTALL RESTRICTED PARKING SIGNAGE (90 MINUTE PARKING 9AM-6PM, EXCEPT SUNDAY).
14. INSTALL BACK-IN ONLY SIGNAGE.
15. PROVIDE 4" WHITE LINE BORDER WITH 4" WHITE LINE DIAGONALS AT 3' MAX SPACING AND 12' HIGH WHITE LETTERS 'NO PARKING' CENTERED AT END OF STALL.
16. PROVIDE 12' HIGH WHITE LETTERS 'EV CHARGING' CENTERED AT END OF STALL.
17. PROVIDE 12' HIGH WHITE LETTERS 'CLEAN AIR/VANPOOL/EV' CENTERED AT END OF STALL.

REGISTERED PROFESSIONAL ENGINEER
MICHAEL C. HAMILTON
NO 62696
CIVIL
STATE OF CALIFORNIA

SUPERVISING CIVIL ENGINEER _____ DATE _____

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

APPROVED: _____ DATE _____
CITY ENGINEER
ORIGINAL SIGNED DATE

DESIGN
DRAWN
CHECKED

APPROVED
DATE

REVISIONS
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PUBLIC IMPROVEMENT PLANS
ORTEGA PARK
SIGNAGE AND STRIPING PLAN

06/26/2020
DATE

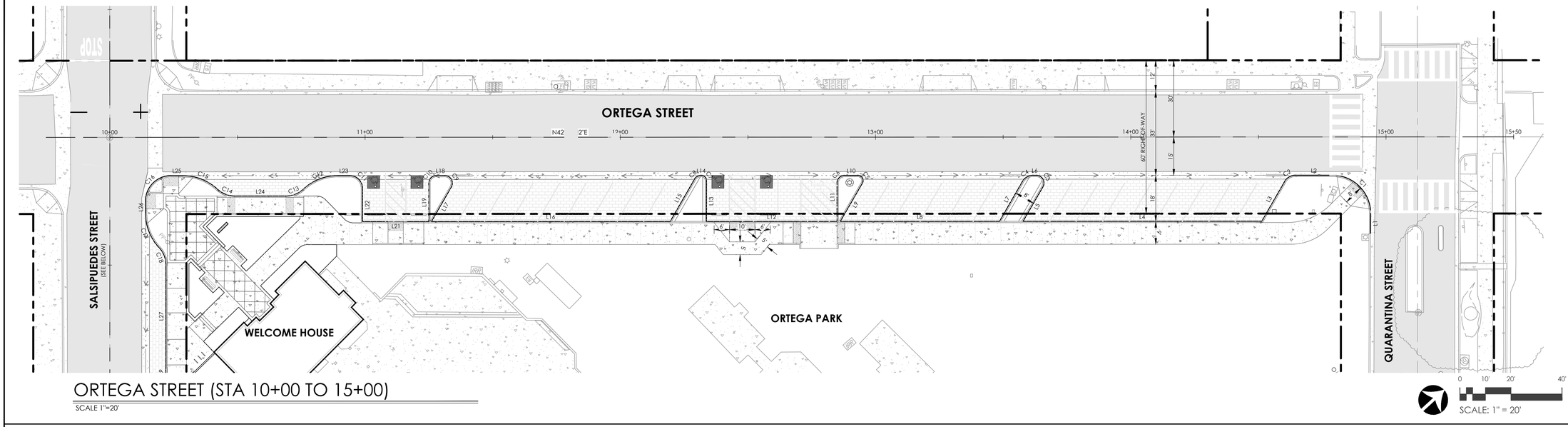
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DWG. NO.

SHT. 9 OF 27

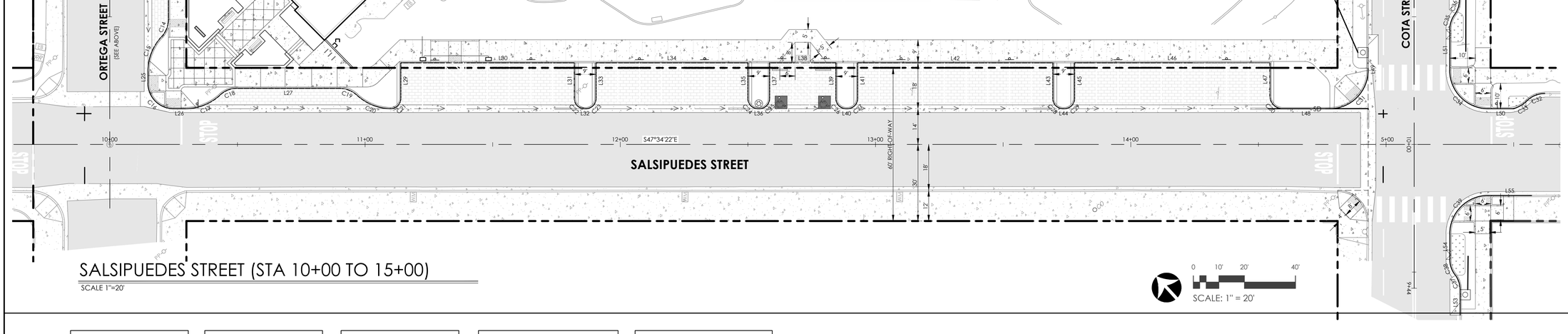
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ORTEGA STREET (STA 10+00 TO 15+00)

SCALE 1"=20'

SCALE: 1" = 20'



SALSIPUEDES STREET (STA 10+00 TO 15+00)

SCALE 1"=20'

SCALE: 1" = 20'

PARCEL LINE DATA		
SEGMENT	LENGTH	DIRECTION
L1	7.76	N47° 29' 58"W
L2	14.38	S42° 25' 02"W
L3	17.90	S17° 34' 58"E
L4	93.53	S42° 25' 04"W
L5	15.59	N17° 34' 58"W
L6	1.15	S42° 25' 02"W
L7	17.90	S17° 34' 58"E
L8	62.36	S42° 24' 45"W
L9	17.33	N17° 34' 58"W
L10	5.20	S42° 25' 02"W
L11	15.00	S47° 34' 58"E
L12	51.17	S42° 25' 08"W
L13	16.00	N47° 34' 58"W
L14	0.10	S42° 25' 02"W
L15	19.06	S17° 34' 58"E
L16	93.53	S42° 25' 02"W
L17	15.59	N17° 34' 58"W
L18	3.20	S42° 25' 02"W
L19	15.00	S47° 34' 58"E
L21	26.00	S42° 25' 02"W

PARCEL LINE DATA		
SEGMENT	LENGTH	DIRECTION
L22	13.00	N47° 34' 58"W
L23	4.60	S42° 25' 02"W
L24	20.00	S42° 25' 02"W
L25	4.60	S42° 25' 02"W
L26	4.60	S47° 34' 22"E
L27	40.00	S47° 34' 22"E
L29	14.00	N42° 25' 38"E
L30	68.00	S47° 34' 22"E
L31	14.00	S42° 25' 38"W
L32	0.50	S47° 34' 22"E
L33	14.00	N42° 25' 38"E
L34	59.50	S47° 34' 22"E
L35	14.00	S42° 25' 38"W
L36	0.50	S47° 34' 22"E
L37	14.00	N42° 25' 38"E
L38	26.00	S47° 34' 22"E
L39	14.00	S42° 25' 38"W
L40	0.50	S47° 34' 22"E
L41	14.00	N42° 25' 38"E
L42	76.50	S47° 34' 22"E

PARCEL LINE DATA		
SEGMENT	LENGTH	DIRECTION
L43	14.00	S42° 25' 38"W
L44	0.50	S47° 34' 22"E
L45	14.00	N42° 25' 38"E
L46	76.50	S47° 34' 22"E
L47	13.00	S42° 25' 38"W
L48	18.49	S47° 34' 22"E
L49	0.83	N42° 24' 21"E
L50	10.02	N47° 34' 22"W
L51	15.98	N42° 28' 08"E
L52	10.01	N42° 07' 07"E
L53	10.00	N42° 24' 21"E
L54	10.00	N42° 23' 56"E
L55	17.04	S47° 34' 22"E

PARCEL CURVE DATA			
SEGMENT	LENGTH	RADIUS	DELTA
C1	23.58	15.00	90°04'59"
C2	5.24	5.00	60°00'00"
C3	6.28	3.00	120°00'00"
C4	5.24	5.00	60°00'00"
C5	4.19	2.00	120°00'00"
C6	4.71	3.00	90°00'00"
C7	3.14	2.00	90°00'00"
C8	3.14	3.00	60°00'00"
C9	6.28	3.00	120°00'00"
C10	4.71	3.00	90°00'00"
C11	7.85	5.00	90°00'00"
C12	14.95	20.00	42°50'00"
C13	7.48	10.00	42°49'56"
C14	7.48	10.00	42°50'00"
C15	14.95	20.00	42°50'00"
C16	15.71	10.00	89°59'24"
C17	14.95	20.00	42°49'59"
C18	7.48	10.00	42°50'00"
C19	7.46	10.42	41°02'43"
C20	14.45	20.00	41°24'36"

PARCEL CURVE DATA			
SEGMENT	LENGTH	RADIUS	DELTA
C21	6.38	4.00	91°26'15"
C22	6.28	4.00	90°00'00"
C23	6.28	4.00	90°00'00"
C24	6.28	4.00	90°00'00"
C25	6.28	4.00	90°00'00"
C26	6.28	4.00	90°00'00"
C27	6.28	4.00	90°00'00"
C28	6.28	4.00	90°00'00"
C29	6.28	4.00	90°00'00"
C30	7.85	5.00	90°00'00"
C31	23.57	15.00	90°01'17"
C32	7.92	10.00	45°23'48"
C33	5.95	13.17	25°53'44"
C34	23.55	15.00	89°58'17"
C35	6.24	10.00	35°44'38"
C36	6.53	10.00	37°24'44"
C37	6.27	10.00	35°54'36"
C38	6.44	10.00	36°52'12"
C39	23.57	15.00	90°01'43"

REGISTERED PROFESSIONAL ENGINEER
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CIVIL
STATE OF CALIFORNIA

DATE

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ENGINEERING DIVISION

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REVISIONS NO.

PUBLIC IMPROVEMENT PLANS

ORTEGA PARK

HORIZONTAL CONTROL PLAN

03/06/2020
DATE

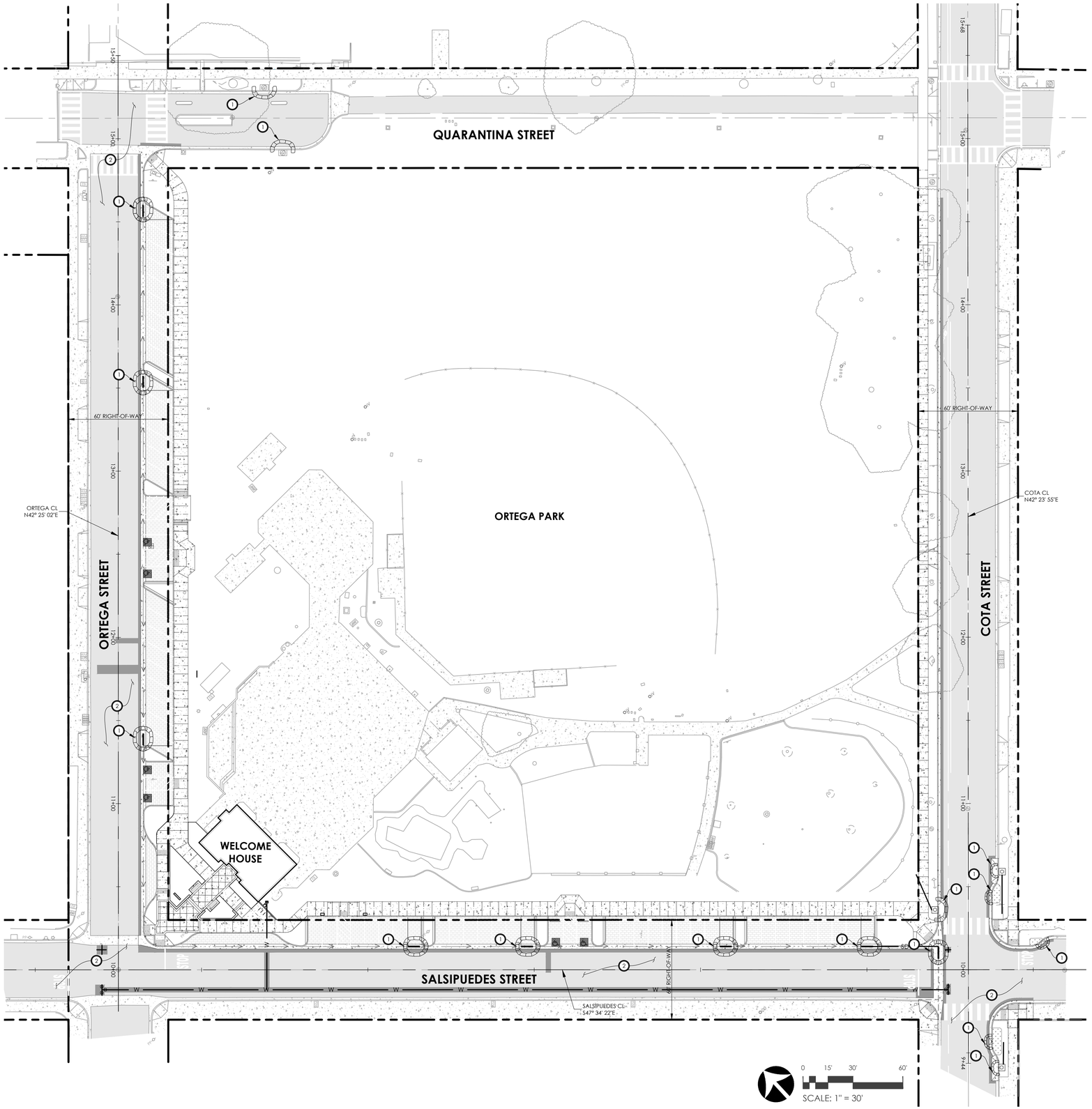
2019-00678
PBW. NO.

- BID NO. | C10 SHT. DES.

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DWG. NO.

SHT. 10 OF 27

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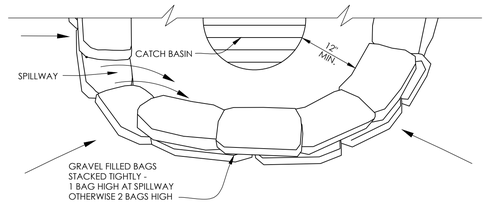


GENERAL NOTES

1. THESE PLANS ARE INTENDED TO REPRESENT DIFFERENT PHASES DURING CONSTRUCTION. THE CONTRACTOR SHALL IMPLEMENT THE BMP'S SHOWN AND/OR ANY OTHER MEASURES NECESSARY DURING CONSTRUCTION TO BE IN COMPLIANCE WITH THE GENERAL PERMIT. IMPLEMENTATION OF THE THE BMP'S SHOWN ON THESE PLANS, DO NOT RELIEVE THE OWNER OR HIS/HER REPRESENTATIVE FROM RESPONSIBILITY OF IMPLEMENTING ALL MEASURES NEEDED TO BE IN COMPLIANCE.
2. CONSTRUCTION THAT INCLUDES DEMOLITION AND REPLACEMENT OF EXISTING ASPHALT SHALL BE COMPLETED WHEN THERE IS NO FORECAST RAIN EVENTS. AREAS THAT WILL BE IDLE FOR EXTENDED PERIODS OF TIME SHALL BE COVERED WITH TEMPORARY ASPHALT PATCHING, (COLD MIX).
3. GRAVEL BAGS SHOWN IN THE CURB AND GUTTER FLOW LINES SHALL BE ORIENTED TO TEMPORARILY SLOW AND DAM THE FLOWING STORM WATER IN THE GUTTERS TO HELP FILTER OUT ANY SEDIMENTS. THESE GRAVEL BAGS SHALL BE SPACED AT 50' O/C OR CLOSER AS CONDITIONS WARRANT.
4. STREETS SHALL BE CLEANED AS NEEDED BY MEANS OF MOBILE STREET SWEEPERS.

CONSTRUCTION NOTES

1. PROVIDE CATCH BASIN INLET SEDIMENT BARRIER PER DETAIL 'A', THIS SHEET.
2. PROVIDE STREET SWEEPING & VACUUMING FOR ANY SEDIMENT TRACKED ONTO PUBLIC STREETS.



CATCH BASIN INLET SEDIMENT BARRIER (A)

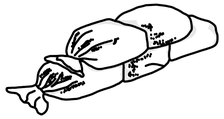
SCALE: N.T.S.



FILL GRAVEL BAGS ONE HALF FULL WITH GRAVEL.



GATHER TOP OF GRAVEL BAG AND TIE SECURELY WITH HEAVY STRING.



CARE SHOULD BE TAKEN TO STACK GRAVEL BAGS IN ACCORDANCE WITH THE ILLUSTRATIONS. STAMP EACH GRAVEL BAG INTO PLACE, COMPLETING EACH LAYER PRIOR TO STARTING THE NEXT LAYER.

GRAVEL BAG INSTALLATION

SCALE: N.T.S.



CONSTRUCTION HAUL/DELIVERY ROUTE

SCALE: N.T.S.

REGISTERED PROFESSIONAL ENGINEER
MICHAEL C. HAMILTON
NO 62696
CIVIL
STATE OF CALIFORNIA

SUPERVISING CIVIL ENGINEER DATE

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE

ORIGINAL SIGNED DATE

DESIGN
DRAWN
CHECKED

NO.	REVISIONS	DATE	APPROVED

PUBLIC IMPROVEMENT PLANS

ORTEGA PARK

EROSION AND SEDIMENT CONTROL PLAN

03/06/2020
DATE

2019-00678
PBW. NO.

- BID NO. | C11 SHT. DES.

C-1-4879
DWG. NO.

SHT. 11 OF 27

N:\1000\1144-02-RC18-Ortega-Park-Dwight-Murphy-Field-Con-Docs\Engineering\Con\Docs\Sheet-Files\C1-05-ESC.dwg, 3/5/2020 2:52 PM, WeidI, AprylD.

CONSTRUCTION LEGEND

KEY	DETAIL	ITEM	DESCRIPTION	COLOR AND FINISH	NOTES
	SEE CIVIL PLANS	PAVING TYPE 1	CONCRETE, SAWCUT SCORING PER PLAN. SEE CONSTRUCTION NOTES.	COLOR: STANDARD GREY FINISH: MEDIUM BROOM	
	SEE CIVIL PLANS	PAVING TYPE 2	CONCRETE WITH INTEGRAL COLOR, SAWCUT SCORING PER PLAN. SEE CONSTRUCTION NOTES.	COLOR: DAVIS 'SANDSTONE' FINISH: MEDIUM SANDBLAST	1' EDGE BORDER. CONTROL JOINTS SHALL BE AT 45 DEGREES. PROVIDE 4'X4' MOCK UP FOR REVIEW
	SEE CIVIL PLANS	PAVING TYPE 3	PERMEABLE PAVERS - VEHICULAR RATED 80MM ADA AVAILABLE FROM AIR VOL BLOK, SAN LUIS OBISPO.	COLOR: BROWN CHARCOAL FINISH: STANDARD SMOOTH PATTERN: COMBO HERRINGBONE	PROVIDE SAMPLE MOCK-UP TO LANDSCAPE ARCHITECT PRIOR TO INSTALLATION
	SEE CIVIL PLANS	MULCH TYPE 1	4'-8" 'NOIYO' RIVER COBBLESTONE AVAILABLE FROM AIR VOL BLOK, SAN LUIS OBISPO.	COLOR: VARIES	MINIMUM 4" OF DEPTH
	7 / L2.0	MULCH TYPE 2	DECOMPOSED GRANITE	COLOR: TAN	PROVIDE 3" DEEP LAYER AROUND PLANTINGS, KEEP 3" CLEAR OF PLANT BASE.
	4 / L2.0	SEATWALL	STANDARD 8X8X16" CMU BLOCK QUIKRETE COMMERCIAL GRADE STUCCO OR APPROVED EQUAL.	COLOR: LA HABRA EGGSHELL FINISH: TROLLED	CONTRACTOR SHALL PROVIDE 4' WIDE X WALL HEIGHT SAMPLE FOR REVIEW.
	4 / L2.0	WALL CAP	12" X 9 1/8" TERRA COTA TILE CAP MALIBU CERAMIC WORKS PH: 310-455-2485 WEB: www.malibuceramicworks.com EMAIL: MARK@MALIBUCERMICWORKS.COM	COLOR: SANTA BARBARA RED	PROVIDE SAMPLE TO LANDSCAPE ARCHITECT FOR REVIEW.
	2 / L2.0	DECORATIVE TILE	4" DECORATIVE RUNNER TILES BOTTOM: MC R-15 / G2, MIDDLE: MC R-35 / G2, TOP: MC R-43 / G3 MALIBU CERAMIC WORKS PH: 310-455-2485 WEB: www.malibuceramicworks.com EMAIL: MARK@MALIBUCERMICWORKS.COM	COLOR: VARIES	SUBMIT SAMPLES OF EACH TILE FOR APPROVAL BY LANDSCAPE ARCHITECT.
	6 / L2.0	BOULDERS	'SANTA BARBARA SANDSTONE' . AVAILABLE FROM SB STONE, SANTA BARBARA, CA. BOULDER 1: APPROXIMATE SIZE 48"-60" BOULDER 2: APPROXIMATE SIZE 36"-48" BOULDER 3: APPROXIMATE SIZE 24"-36"	COLOR: LIGHT BROWN/TAN	PROVIDE PHOTOGRAPHS OF BOULDERS FOR APPROVAL PRIOR TO PURCHASING.
---------	3 / L2.0	HANDRAIL	STAIRMOUNTED, 1 3/16TH WIDE FORGED STEEL. AVAILABLE FROM KING ARCHITECTURAL METALS. PH: 714-670-8980 WEB: https://www.kingmetals.com	COLOR: BLACK FINISH: HAMMERED	HAMMER FINISH SHALL BE ON BOTH SIDES OF METAL. GALVANIZED METAL FINISH WITH SHERWIN WILLIAMS VALFLON FEVE FINISH OR APPROVED EQUAL.
L-01	-	BENCH	SURFACE MOUNTED, 6' L RECYCLED STEEL BAR WITH DUCTILE IRON CASTING. MODEL: CBF - 12 CITY SITES COLLECTION. AVAILABLE FROM VICTOR STANLEY. PH: 301-855-8300 X365 WEB: https://www.victorstanley.com/	COLOR: BLACK FINISH: POWDER COATED	INSTALL PER MANUFACTURER'S SPECIFICATIONS DUCTILE IRON CASTINGS INCLUDE 10 YR WARRANTY AGAINST BREAKAGE.
L-02	-	BIKE RACK	ARC RACK - SURFACE MOUNTED 2" X 2" X 11G SQUARE TUBE STEEL. 35" H X 40" L AVAILABLE FROM AMERICAN BICYCLE SECURITY COMPANY, VENTURA CA. PH: 805-933-3688 WEB: https://ameribike.com/	COLOR: BLACK (RAL 9005) FINISH: POWDER COATED	RACK CAPACITY - 2 BIKES PER RACK.
L-03	BY OWNER	SIGN TYPE 1	PARK MONUMENTATION SIGNAGE PER CITY.	N/A	PROVIDE FOOTING FOR SIGNAGE. COORDINATE WITH CITY REPRESENTATIVE FOR SIGN.
L-04	-	SKATE DETERRANT	SURFACE MOUNT 'G SERIES' $\frac{3}{16}$ STAINLESS STEEL. MODEL: G012SS AVAILABLE FROM SKATE STOPPERS PH: 619-447-6374 WEB: http://www.skatestoppers.com/	COLOR: STAINLESS STEEL FINISH: BRUSHED	INSTALL 18-24" FROM END OF WALL AND APPROXIMATELY 36" +/- 6" ON CENTER PER MANUFACTURER'S SPECIFICATIONS. MOUNT IN MORTAR POCKET. REFER TO PLAN FOR APPROXIMATE LOCATIONS. FINAL LOCATION SHALL BE DETERMINED IN FIELD BY OWNER'S AUTHORIZED REPRESENTATIVE.

CONSTRUCTION NOTES

1. APPROVED PLANS - NO CONSTRUCTION SHALL BE STARTED WITHOUT PLANS APPROVED BY CITY. THE CITY SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION. ANY CONSTRUCTION DONE WITHOUT APPROVED PLANS OR WITHOUT NOTIFICATION TO THE CITY MAY BE REJECTED AND WILL BE AT THE CONTRACTOR'S AND/OR CITY'S RISK. THE CONTRACTOR SHALL HAVE COPIES OF THE APPROVED PLANS FOR THIS PROJECT ON THE SITE AT ALL TIMES, AND SHALL BE FAMILIAR WITH ALL APPLICABLE STANDARDS AND SPECIFICATIONS.
2. UNDERGROUND UTILITIES - PRIOR TO BEGINNING ANY EXCAVATION OR BORING, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL AGENCIES INVOLVED AND SHALL LOCATE ALL FACILITIES PRIOR TO THE EXCAVATION. THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT (USA), TOLL FREE AT 811 AT LEAST 48 HOURS PRIOR TO THE START OF ANY EXCAVATION.
3. EXISTING UNDERGROUND UTILITIES - THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND FACILITIES, WHERE SHOWN ON THE PLANS ARE BASED ON AVAILABLE RECORDS, AND MAY NOT ACCURATELY REFLECT THE ACTUAL LOCATION OR ELEVATION. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR LOCATING OR PROTECTING THE SAME DURING THE COURSE OF THE PROJECT. ANY DEVIATIONS FROM THE LOCATIONS SHOWN ON THE PLAN SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE CITY GENERAL SERVICES AGENCY.
4. SAFETY - THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR SAFETY OF THE JOB SITE AND THE CONSTRUCTION WORK. THE CONTRACTOR SHALL DESIGN, CONSTRUCT, AND MAINTAIN ALL SAFETY DEVICES, AND SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE, AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS, AND REGULATIONS. THE CITY INSPECTOR MAY NOTIFY THE CONTRACTOR OF ANY UNSAFE CONDITIONS WHICH MAY BE OBSERVED, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMMEDIATELY TAKING ALL SUCH MEASURES AS WILL CORRECT THE UNSAFE CONDITION.
5. PROTECTION OF PROPERTY - THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PUBLIC AND PRIVATE PROPERTY IN THE VICINITY OF HIS WORK, AND SHALL EXERCISE DUE CAUTION TO ITS ORIGINAL CONDITION, ALL IMPROVEMENTS OR PROPERTY WHICH IS DAMAGED OR REMOVED (UNLESS DESIGNATED FOR REMOVAL ON THE PLANS) AS A RESULT OF HIS OPERATIONS.
6. SITE CONDITIONS - THE CONTRACTOR SHALL CONTINUALLY REVIEW JOB SITE CONDITIONS. CONDITIONS REQUIRING CONSTRUCTION DIFFERENT FROM THAT SHOWN ON THE PLANS SHALL BE REPORTED TO THE ARCHITECT OF RECORD. ALL SUCH CHANGES TO THE CONSTRUCTION SHALL BE APPROVED BY THE CITY PRIOR TO PROCEEDING WITH THE CONSTRUCTION.
7. CONTRACTOR'S RECORD OF CHANGES - THE CONTRACTOR SHALL MAINTAIN A CURRENT, COMPLETE, AND ACCURATE RECORD OF ALL CHANGES FROM THE CONSTRUCTION AS SHOWN ON THESE PLANS AND SPECIFICATIONS FOR THE PURPOSE OF PROVIDING THE ARCHITECT OF RECORD WITH A BASIS FOR THE PREPARATION OF RECORD DRAWINGS.
8. EXISTING SURVEY MONUMENTS - SHALL BE TIED OUT AND PRECONSTRUCTION CORNER RECORD FILED PRIOR TO ISSUANCE OF CONSTRUCTION PERMIT
9. OFF-SITE GRADING OR OTHER CONSTRUCTION WORK NOT PERMITTED WITHOUT PRIOR PERMISSION OF THE CITY.
10. THE CONTRACTOR SHALL BE RESPONSIBLE DURING CONSTRUCTION FOR CLEANING CITY/STATE STREETS, CURBS, GUTTERS AND SIDEWALKS OF DIRT TRACKED FROM THE SUBJECT SITE. THE FLUSHING OF DIRT AND DEBRIS TO STORM DRAIN OR SANITARY SEWER FACILITIES SHALL NOT BE PERMITTED. THE CLEANING SHALL BE DONE AFTER EACH DAY'S WORK OR AS DIRECTED BY THE PROJECT INSPECTOR.
11. ALL LARGE CONSTRUCTION EQUIPMENT IS TO BE EQUIPPED WITH "CRITICAL" GRADE NOISE MUFFLERS. NOISE LEVEL REDUCTIONS ASSOCIATED WITH THE USE OF "CRITICAL" RATHER THAN "STOCK" GRADE MUFFLERS CAN BE AS HIGH AS 5dBA. ENGINES WILL BE TUNED TO INSURE LOWEST POSSIBLE NOISE LEVELS. BACK UP BEEPERS ARE TO BE TUNED TO INSURE LOWEST POSSIBLE NOISE LEVELS AS ALLOWED BY OSHA.
12. IN THE EVENT THAT GRADING OR OTHER OPERATIONS DO UNCOVER BURIED ARTIFACTS, ALL CONSTRUCTION ACTIVITIES SHALL BE HALTED TO PREVENT FURTHER DISRUPTION OF THE NEWLY DISCOVERED ARCHAEOLOGICAL SITE. A QUALIFIED ARCHAEOLOGIST SHOULD THEN EVALUATE THE DISCOVERY AND RECOMMEND THE APPROPRIATE DISPOSITION OF THE RESOURCES. THE CITY GENERAL SERVICES AGENCY SHALL BE NOTIFIED. ALL STATE AND FEDERAL LAWS SHALL BE COMPLIED WITH.
13. CONTRACTOR SHALL HOLD A PRE-CONSTRUCTION MEETING AT LEAST 7 DAYS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE CITY OF SANTA BARBARA AND THE ARCHITECT OF RECORD 24 HOURS PRIOR TO THE MEETING. THIS MEETING SHALL INCLUDE THE SPECIAL INSPECTION REPORTING REQUIREMENTS, DISCUSSION OF THE EROSION CONTROL, DISABLED ACCESS COMPLIANCE & REPORTS REQUIRED. CALL THE CITY OF SANTA BARBARA FOR INSPECTIONS.
14. CONCRETE CUTTING REQUIRES COMPLETE RECOVERY OF THE SLURRY VIA VACUUM SYSTEM OR OTHER LIKE SYSTEM.
15. WHEN POURING OR PATCHING CONCRETE, WASHOUT IS REQUIRED TO BE USED ONSITE.
16. ISOLATION JOINTS SHALL BE PROVIDED AT ALL STRUCTURES, STEPS, AND WALLS ADJACENT TO PAVING.
17. WHERE NECESSARY TO REPLACE EXISTING SIDEWALK, COLD JOINT SHALL BE PROVIDED AT EXISTING JOINT, OR MIN 1.5" SAWCUT AT NEAREST SCORE MARK.
18. PROVIDE SAMPLES OF ALL LISTED PRODUCTS FOR LANDSCAPE ARCHITECTS REVIEW. SEE NOTES WHERE APPLICABLE.
19. PROVIDE 3" DEEP LAYER OF FIR BARK MULCH IN COLOR LIGHT BROWN OVER MIRAFI WEED FABRIC OR APPROVED EQUAL. STAPLE EDGES OF FABRIC AT 3' ON CENTER. SUBMIT PHYSICAL SAMPLE FOR REVIEW.

SYMBOL LEGEND

SYMBOL	DESCRIPTION
X / Y	DETAIL CALLOUT, WHERE 'X' IS THE DETAIL NUMBER AND 'Y' IS THE PAGE NUMBER
X / Y	SECTION CALLOUT, WHERE 'X' IS THE SECTION NUMBER AND 'Y' IS THE PAGE NUMBER
XX-01	REFERENCE NOTE CALLOUT
	LIMIT OF WORK
	SCORE JOINT - 1.5" DEEP PER CITY OF SB STANDARD. SEE CONSTRUCTION NOTES
	SCORE JOINT - .25" DEEP PER CITY OF SB STANDARD. SEE CONSTRUCTION NOTES
	ENLARGEMENT AREA BOUNDARY
	EXISTING TREE. PROTECT IN PLACE.
	PROPERTY LINE

REGISTERED LANDSCAPE ARCHITECT
JEFFREY C. FERBER NO. 2844
Signature
03/31/00
Renewal Date
Date
STATE OF CALIFORNIA

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
APPROVED: CITY ENGINEER DATE
ORIGINAL SIGNED DATE

DESIGN
DRAWN
CHECKED

NO.	REVISIONS	DATE	APPROVED

PUBLIC IMPROVEMENT PLANS
ORTEGA PARK
CONSTRUCTION LEGEND AND NOTES

03/06/2020
DATE

2019-00678
PBW. NO.

- BID NO. | L1.0 SHT. DES.

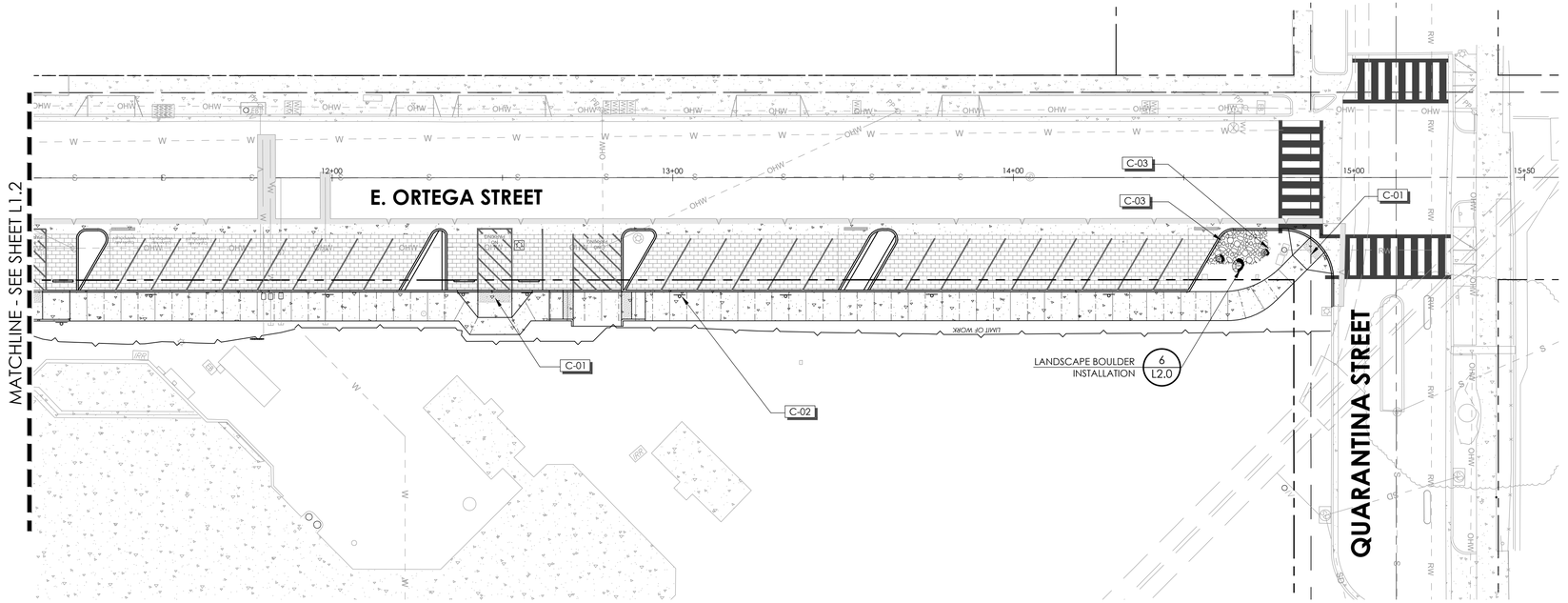
C-1-4879
DWG. NO.

SHT. 12 OF 27

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EAST ORTEGA STREET IMPROVEMENTS

1"=20'-0"



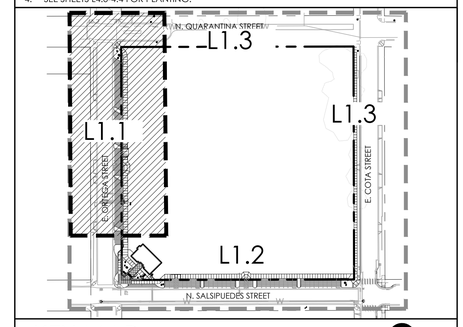
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SCALE: 1" = 20'

CONSTRUCTION NOTES SCHEDULE

SYMBOL	DESCRIPTION
C-01	RAMP AND TRUNCATED DOMES, SEE CIVIL PLANS.
C-02	PARKING SIGN, SEE CIVIL PLANS
C-03	LID COBBLE AREA, SEE CONSTRUCTION SCHEDULE FOR MATERIAL NOTES. SEE CIVIL PLANS FOR DETAIL.
C-04	NEW AC PAVING, SEE CIVIL PLANS.

NOTES:
1. SEE SHEET L1.0 FOR CONSTRUCTION NOTES, LEGENDS, AND SCHEDULE.
2. REFER TO CIVIL PLANS FOR STRIPING, CURB RAMPS, STEPS, GRADING AND DRAINAGE.
3. SEE SHEETS L3.0-3.4 FOR IRRIGATION.
4. SEE SHEETS L4.0-4.4 FOR PLANTING.



KEY MAP NTS

REGISTERED LANDSCAPE ARCHITECT
JEFFREY C. FERBER NO. 2844
Signature
03/31/00
Renewal Date
Date
STATE OF CALIFORNIA

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE

ORIGINAL SIGNED DATE

DESIGN
DRAWN
CHECKED

NO.	REVISIONS	DATE	APPROVED

PUBLIC IMPROVEMENT PLANS
ORTEGA PARK
CONSTRUCTION PLAN

03/06/2020
DATE

2019-00678
PBW. NO.

-	L1.1
BID NO.	SHT. DES.

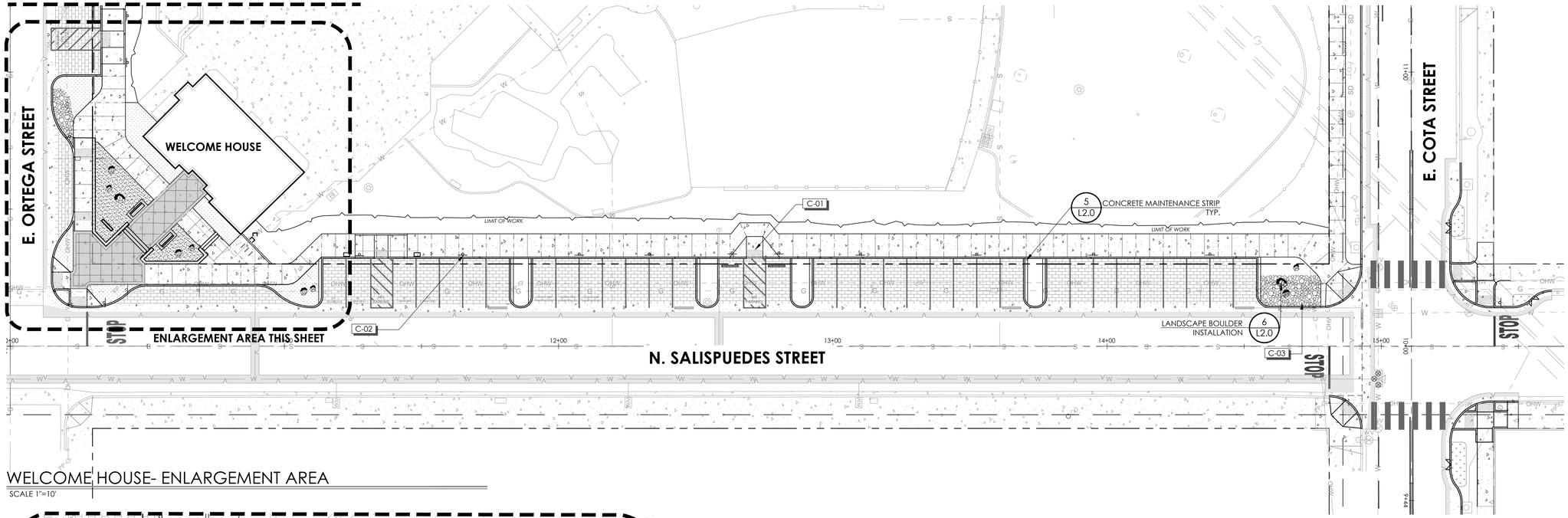
C-1-4879
DWG. NO.

SHT. 13 OF 27

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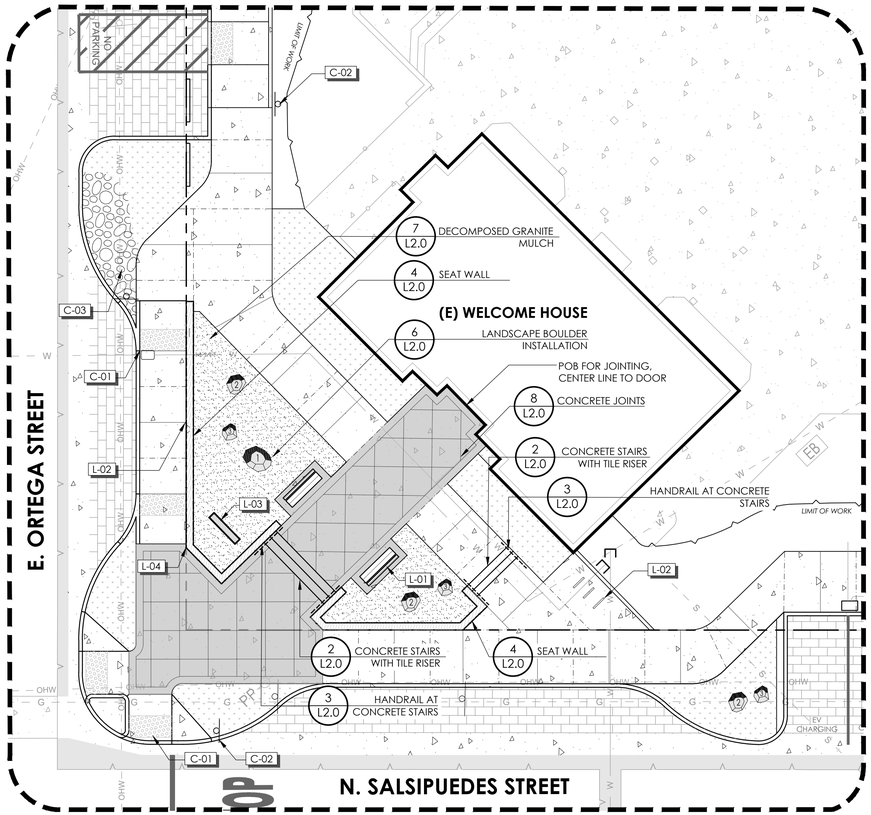
NORTH SALSIPUEDES STREET IMPROVEMENTS

1"=20'-0"



WELCOME HOUSE- ENLARGEMENT AREA

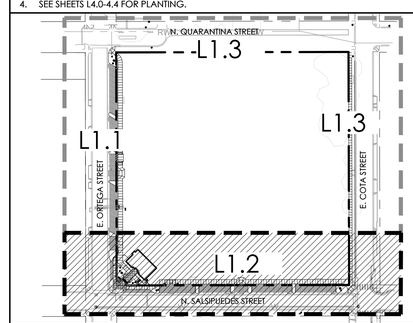
SCALE 1"=10'



CONSTRUCTION NOTES SCHEDULE

SYMBOL	DESCRIPTION
C-01	RAMP AND TRUNCATED DOMES, SEE CIVIL PLANS.
C-02	PARKING SIGN, SEE CIVIL PLANS
C-03	LID COBBLE AREA, SEE CONSTRUCTION SCHEDULE FOR MATERIAL NOTES. SEE CIVIL PLANS FOR DETAIL.
C-04	NEW AC PAVING, SEE CIVIL PLANS.

NOTES:
1. SEE SHEET L1.0 FOR CONSTRUCTION NOTES, LEGENDS, AND SCHEDULE.
2. REFER TO CIVIL PLANS FOR STRIPING, CURB RAMPS, STEPS, GRADING AND DRAINAGE.
3. SEE SHEETS L3.0-3.4 FOR IRRIGATION.
4. SEE SHEETS L4.0-4.4 FOR PLANTING.



KEY MAP NTS

REGISTERED LANDSCAPE ARCHITECT
JEFFREY C. FERBER NO. 2844
Signature
03/31/20
Renewal Date
Date
STATE OF CALIFORNIA

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
APPROVED:
CITY ENGINEER DATE
ORIGINAL SIGNED DATE

DESIGN
DRAWN
CHECKED

DATE APPROVED REVISIONS NO.

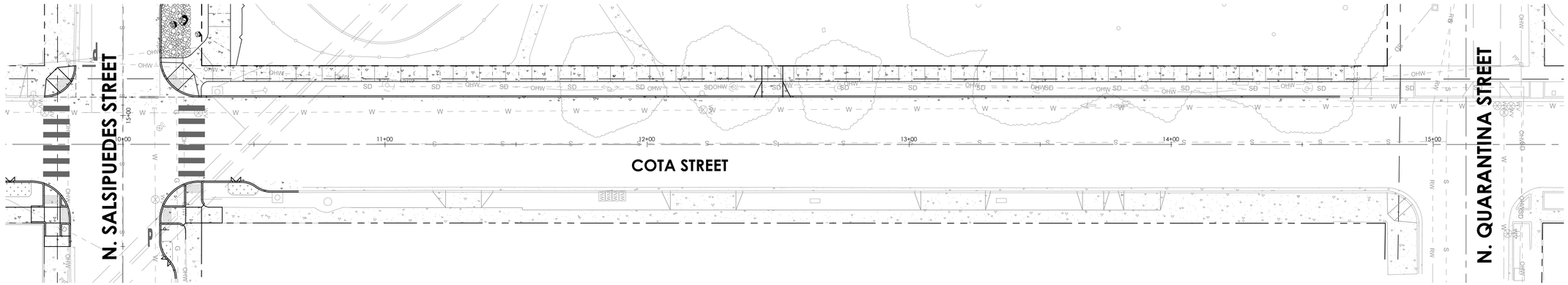
PUBLIC IMPROVEMENT PLANS
ORTEGA PARK
CONSTRUCTION PLAN AND ENLARGEMENT AREA

03/06/2020 DATE
2019-00678 PBW. NO.
- BID NO. | L1.2 SHT. DES.
C-1-4879 DWG. NO.
SHT. 14 OF 27

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COTA STREET IMPROVEMENTS

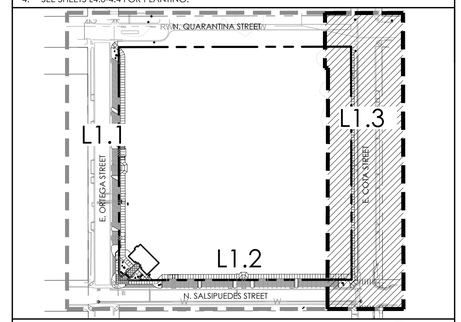
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0 10' 20' 40'

SCALE: 1" = 20'

NOTES:
1. SEE SHEET L1.0 FOR CONSTRUCTION NOTES, LEGENDS, AND SCHEDULE.
2. REFER TO CIVIL PLANS FOR STRIPING, CURB RAMPS, STEPS, GRADING AND DRAINAGE.
3. SEE SHEETS L3.0-3.4 FOR IRRIGATION.
4. SEE SHEETS L4.0-4.4 FOR PLANTING.



KEY MAP NTS

REGISTERED LANDSCAPE ARCHITECT
JEFFREY C. FERBER NO. 7844
Signature
03/31/00
Renewal Date
Date
STATE OF CALIFORNIA

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

APPROVED: DATE

CITY ENGINEER ORIGINAL SIGNED DATE

DESIGN
DRAWN
CHECKED

NO.	REVISIONS	DATE	APPROVED

PUBLIC IMPROVEMENT PLANS
ORTEGA PARK
CONSTRUCTION PLAN

03/06/2020
DATE

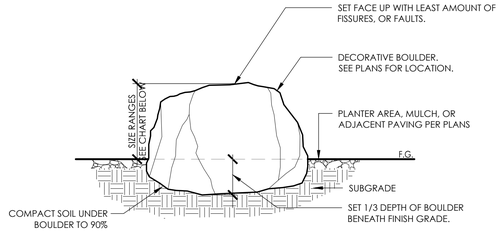
2019-00678
PBW. NO.

- BID NO. | L1.3 SHT. DES.

C-1-4879
DWG. NO.

SHT. 15 OF 27

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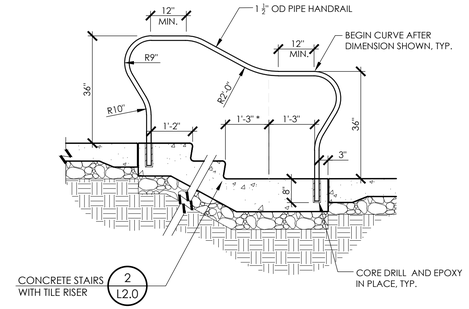


BOULDER SIZING:
PROVIDE QUANTITIES OF BOULDERS PER LOCATIONS SHOWN ON PLANS.
REFER TO CONSTRUCTION LEGEND FOR SIZING PER SYMBOL SHOWN ON PLANS.

NOTES:
1. FINAL PLACEMENT AND DEPTH SHALL BE DETERMINED IN FIELD UNDER DIRECTION OF OWNER AND/OR LANDSCAPE ARCHITECT.
2. SEE CONSTRUCTION LEGEND FOR COLORS AND FINISHES.

6 LANDSCAPE BOULDER INSTALLATION

3/4" = 1'-0" RRM-1144.01-08

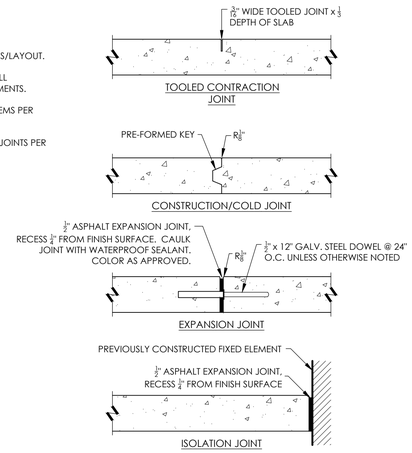


NOTES:
1. PROVIDE SMOOTH POLISHED WELDS BETWEEN ALL COMPONENTS SHOWN.
2. *DIMENSION SHOWN SHALL NOT BE LESS THAN THE DISTANCE OF ONE TREAD WIDTH PER C.B.C.
3. HANDRAIL HEIGHT SHALL BE CONSISTENT AS MEASURED AT EACH STAIR NOSING AND SHALL MATCH HEIGHT SHOWN.
4. SEE CONSTRUCTION LEGEND FOR COLORS AND FINISHES.
5. SUBMIT SHOP DRAWINGS FOR REVIEW.

3 HANDRAIL AT CONCRETE STAIRS

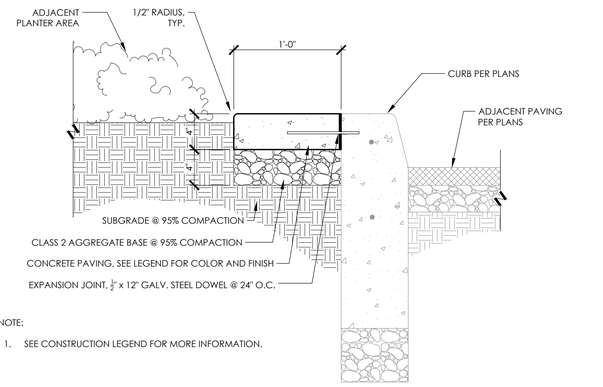
1/2" = 1'-0" RRM-1144.01-07

NOTES:
1. REFER TO PLANS FOR JOINT LOCATIONS/LAYOUT.
2. PROVIDE ISOLATION JOINT AGAINST ALL PREVIOUSLY CONSTRUCTED FIXED ELEMENTS.
3. INSTALL MANUFACTURED DOWEL SYSTEMS PER MANUFACTURER'S INSTRUCTIONS.
4. SEAL ALL ISOLATION AND EXPANSION JOINTS PER MANUFACTURER'S INSTRUCTIONS.



8 CONCRETE JOINTS

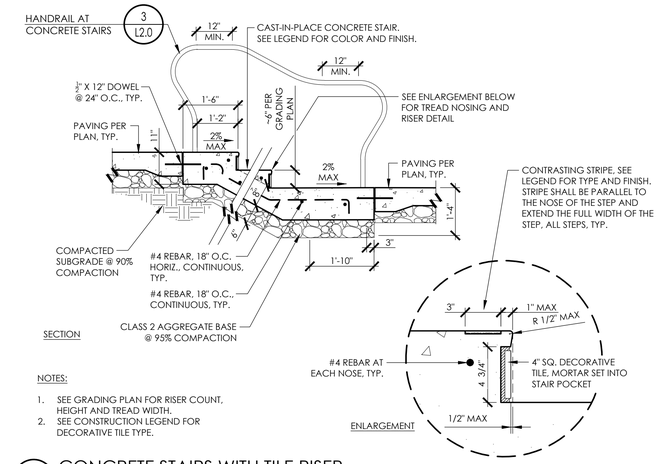
1 1/2" = 1'-0" RRM-1144.01-06



NOTE:
1. SEE CONSTRUCTION LEGEND FOR MORE INFORMATION.

5 CONCRETE MAINTENANCE STRIP

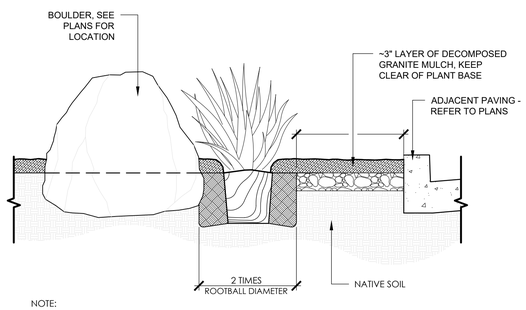
1 1/2" = 1'-0" RRM-1144.01-02



NOTES:
1. SEE GRADING PLAN FOR RISER COUNT, HEIGHT AND TREAD WIDTH.
2. SEE CONSTRUCTION LEGEND FOR DECORATIVE TILE TYPE.

2 CONCRETE STAIRS WITH TILE RISER

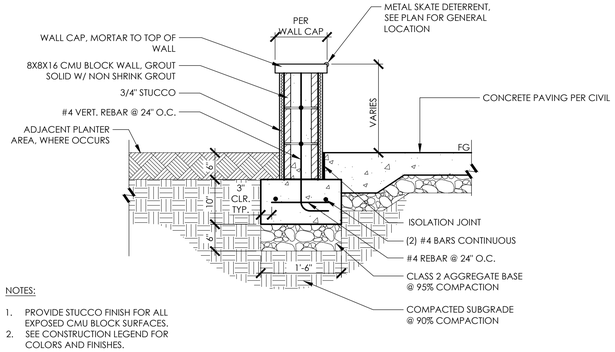
1/2" = 1'-0" RRM-1144.01-05



NOTE:
1. SEE CONSTRUCTION LEGEND FOR ADDITIONAL INFORMATION.

7 DECOMPOSED GRANITE MULCH

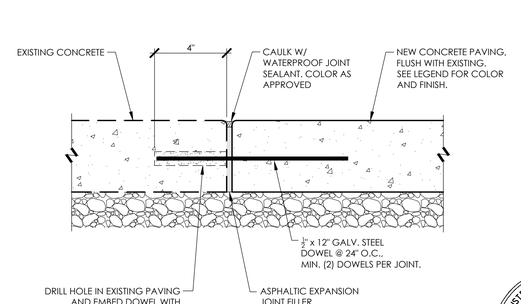
3/4" = 1'-0" DETAIL-FILE



NOTES:
1. PROVIDE STUCCO FINISH FOR ALL EXPOSED CMU BLOCK SURFACES.
2. SEE CONSTRUCTION LEGEND FOR COLORS AND FINISHES.

4 SEAT WALL

3/4" = 1'-0" RRM-1144.01-01



1 CONCRETE PAVING - NEW TO EXISTING

3" = 1'-0" RRM-1144.01-04

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE

ORIGINAL SIGNED DATE —

DESIGN
DRAWN
CHECKED

NO.	REVISIONS	DATE	APPROVED

PUBLIC IMPROVEMENT PLANS
ORTEGA PARK
CONSTRUCTION DETAILS

REGISTERED LANDSCAPE ARCHITECT
JEFFREY C. FERBER NO. 2844
Signature 03/31/00 Renewal Date
Date
STATE OF CALIFORNIA

03/06/2020 DATE	
2019-00678 PBW. NO.	
- BID NO.	L2.0 SHT. DES.
C-1-4879 DWG. NO.	
SHT. 16 OF 27	

N:\1000\1144-02-RC18-Ortega-Park-Dwight-Murphy-Field-Con-Docs\Planning\Task-D.02-Construction Documents\AutoCAD\CP-1144-02.dwg, 3/5/2020 4:53 PM, Schmitz, Anna K

WATER USE CALCULATIONS

WATER EFFICIENT LANDSCAPE WORKSHEET

This worksheet is filled out by the project applicant and it is a required element of the Landscape Document Package

Reference Evapotranspiration (Eto) 40.6

Hydrozone # /Planting Description*	Plant Factor (PF)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (Sq, ft)	ETAF x Area	Estimated Total Water Use (ETWU)
Regular Landscape Areas							
1 - DT Shrubs	0.25	Drip	0.81	0.31	4103	1266.36	31877
5 - DT Trees	0.25	Bubbler	0.81	0.31	300	92.59	2331
				Totals	4403	1358.95	34208
Special Landscape Areas							
	[redacted]			1	724	724	
				1	0	0	
				1	0	0	
				Totals	724	724	
						ETWU Total	**34208**
						Maximum Allowed Water Allowance (MAWA)	**69159**

Hydrozone #/Planting Description	*Irrigation Method*	*Irrigation Efficiency*	*ETWU (Annual Gallons Required)*
E.G.	*overhead spray or drip*	*0.75 for spray head*	*Eto x 0.62 x ETAF x Area*
1.) front lawn		*0.81 for drip*	*where 0.62 is a conversion factor that converts acre inches per acre per year to gallons per square foot per year.*
2.) low water use plantings			
3.) medium water use planting			

*MAWA (Annual Gallons Allowed) = (Eto) (0.62) [(ETAF x LA)] +[(1-ETAF) x SLA)]
where 0.62 is a conversion factor that converts acre-inches per acre per year to gallons per square foot per year. LA is the total landscape area in square feet. SLA is the total special landscape area in square feet, and ETAF is .55 for residential areas and 0.45 for non-residential areas.

ETAF Calculations

Regular Landscape Areas

Total ETAF x Area	(B)
Total Area	(A)
Average ETAF	B / A

Average ETAF for Regular Landscape Areas must be 0.55 or below for residential areas, and 0.45 or below for non-residential areas.

All Landscape Areas

Total ETAF x Area	(B+D)
Total Area	(A+C)
Sitewide ETAF	(B+D) / (A+C)

IRRIGATION NOTES

1. CONTRACTOR SHALL SLEEVE ALL LATERALS AND MAINLINES RUNNING UNDER PAVING.
2. IRRIGATION PLAN IS DIAGRAMMATIC. FINAL LOCATION OF PIPING WILL BE DETERMINED AT THE TIME OF INSTALLATION. MAINLINE AND LATERALS SHALL BE PLACED IN THE SAME TRENCH WHEN POSSIBLE. ALL Q.C. VALVES ARE TO BE LOCATED 12" FROM SIDEWALKS, CURBS, ASPHALT & CONCRETE SURFACES.
3. ALL EQUIPMENT REQUIRED BUT NOT SPECIFIED ON THE DRAWING, TO COMPLETE THE WORK, SHALL BE PROVIDED BY THE IRRIGATION CONTRACTOR.
4. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND/OR SPECIFICATIONS.
5. CONTROLLERS ON SITE ARE EXISTING. CONTRACTOR SHALL CONNECT NEW VALVES TO EXISTING WIRING TO AUTOMATE NEW IRRIGATION SYSTEM.
6. CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE PLANS AND SITE CONDITIONS PRIOR TO BEGINNING WORK. SHOULD CONFLICTING INFORMATION BE FOUND ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE PROJECT LANDSCAPE ARCHITECT BEFORE PROCEEDING WITH THE WORK IN QUESTION.
7. DO NOT WILLFULLY INSTALL THE IRRIGATION SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS, GRADE DIFFERENCES OR DIFFERENCES IN THE AREA DIMENSIONS EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED IN THE ENGINEERING. SUCH OBSTRUCTIONS OR DIFFERENCES SHOULD BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT. IN THE EVENT THIS NOTIFICATION IS NOT PERFORMED, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY AT NO EXPENSE TO THE CITY REPRESENTATIVE.
8. SPLICING OF 24 VOLT WIRES WILL NOT BE PERMITTED EXCEPT IN VALVE BOXES. LEAVE A 24" COIL OF EXCESS WIRE AT EACH SPLICE. LABEL ALL WIRES W/ WATERPROOF MARKERS AT ALL SPLICES AND VALVE MANIFOLDS.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ALL MATERIAL APPEARING ON PLAN.
10. PROVIDE PVC SHUTOFF VALVE FOR EACH VALVE.
11. ALL EXISTING UTILITIES, WATER LINES AND FIRE HYDRANTS SHALL REMAIN CONNECTED AND IN FULL CONTINUOUS OPERATION DURING AND FOLLOWING ALL CONTRACT WORK.
12. CONTRACTOR SHALL MAKE ALL NECESSARY ADJUSTMENTS TO THE IRRIGATION SYSTEM FOLLOWING A PRECIPITATION TEST PER THE CITY. ADJUSTMENTS SHALL INCLUDE BUT WILL NOT BE LIMITED TO: HEAD RELOCATION, CHANGING NOZZLES, AND ADJUSTING ARC PATTERNS TO ATTAIN 65% EFFICIENT UNIFORMITY AS REQUIRED BY THE CITY.
13. CONTRACTOR SHALL SLEEVE ALL PIPE CROSSINGS UNDER HARDSCAPE. ALL SLEEVES UNDER PAVING SHALL RECEIVE IDENTIFYING MARK ON TOP OF HARDSCAPE AT EDGE OF PLANTER TO INDICATE LOCATION OF SLEEVE. EXTEND ALL SLEEVES 18" BEYOND EDGE OF HARDSCAPE, TYP.
14. ALL NEW IRRIGATION BOXES, AND ADDITIONAL BOXES SHALL BE LOCATED IN PLANTING AREAS 18" MIN. AWAY FROM ADJACENT PAVING AND 5' MIN. AWAY FROM IMMEDIATE BUILDING ENTRIES. CONTRACTOR SHALL CONFIRM FINAL LOCATION WITH CITY REPRESENTATIVE PRIOR TO INSTALLATION.
15. FOR ALL DRIP AREAS: CONTRACTOR TO INSTALL AIR RELIEF VALVES, OPERATION INDICATORS AND FLUSH VALVES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
16. CONTRACTOR SHALL NOT INSTALL ANY PLANTING UNTIL THE FOLLOWING ARE COMPLETED: 1. THE IRRIGATION SYSTEM SHALL BE FULLY OPERATIONAL. 2. HYDROSTATIC PRESSURE TESTS SHALL BE PERFORMED ON MAIN AND LATERAL LINES. 3. ALL ZONES SHALL PASS A COVERAGE TEST. 4. CONTROLLERS SHALL BE FULLY OPERATIONAL.
17. IRRIGATION TO BE INSPECTED BY CITY CROSS-CONNECTION SPECIALIST BEFORE BEING BURIED. TAPE IDENTIFYING RECYCLED WATER LINES TO BE BURIED 6 IN-1 FT ABOVE THE WATERLINE. CITY CROSS-CONNECTION SPECIALIST TO PERFORM PRESSURE TEST ON IRRIGATION ONCE IT HAS BEEN INSTALLED. CITY CROSS-CONNECTION SPECIALIST TO PERFORM CROSS-CONNECTION TEST ON SYSTEM ONCE ALL PLUMBING FOR BOTH POTABLE AND IRRIGATION HAS BEEN COMPLETED.
18. CONTRACTOR SHALL CONTACT WATER AGENCY FOR APPROPRIATE WATER PROTECTION NEAR EXISTING WELL. CONTRACTOR SHALL ALSO CONFIRM NEW WELL LOCATION IS NOT IN CONFLICT WITH EXISTING AND PROPOSED IMPROVEMENTS.
19. CONTRACTOR SHALL INSTALL FIVE (5) 'DO NOT DRINK' SIGNS IN PROJECT AREA. COORDINATE LOCATIONS WITH CITY REPRESENTATIVE. SEE DETAIL 3/L3.4 AND LANDSCAPE SPECIFICATION NOTES ON SHEET L/5.1 FOR MORE INFORMATION.
20. CONTROLLER ON SITE IS EXISTING. CONTRACTOR SHALL CONNECT NEW VALVES TO EXISTING WIRING TO AUTOMATE NEW IRRIGATION SYSTEM. COORDINATE WITH CITY REPRESENTATIVE FOR CONNECTION TO CONTROLLER.
21. CONTRACTOR SHALL RELOCATE EXISTING ROTORS, SPRAY HEADS AND SUPPLEMENTAL IRRIGATION EQUIPMENT FOR TURF AREAS WITHIN THE AREAS OF IMPROVEMENTS. CONTRACTOR SHALL CONFIRM NO OVERSPRAY OF IRRIGATION OCCURS ON HARDSCAPE AND SHALL SET IRRIGATION EQUIPMENT TO SPRAY NO MORE THAN 2' FROM EDGE OF BACK OF WALK.
22. CONTRACTOR SHALL REQUEST AS-BUILT DRAWINGS PRIOR TO BID AND CONFIRM SCOPE OF IRRIGATION CONSTRUCTION. AS BUILTS ARE AVAILABLE THROUGH CITY PARK AND RECREATION DEPARTMENT. IF ANY ERRORS AND/OR ISSUES ARE FOUND, CONTRACTOR SHALL REPORT THIS TO CITY REPRESENTATIVE IMMEDIATELY.
23. CONTRACTOR SHALL REPLACE ANY BROKEN OR FAILING IRRIGATION EQUIPMENT IN KIND. IF EQUIPMENT IS FOUND TO BE INADEQUATE OR CAUSES OVERSPRAY, CONTRACTOR SHALL REPLACE OR ADJUST EQUIPMENT AS NEEDED TO PROVIDE ADEQUATE COVERAGE.
24. CONTRACTOR SHALL ACCOUNT FOR A MINIMUM OF THE FOLLOWING MATERIALS TO COVER UNKNOWN SYSTEMS MODIFICATIONS:
    - 24.1. 800 LINEAR FEET OF LATERAL LINE PIPE, MIN. 1-1/2 "
    - 24.2. 200 LINEAR FEET OF MAIN LINE PIPE, MIN. 2"
    - 24.3. 4 HUNTER 1-20 ROTORS
    - 24.4. 18 RAIN BIRD 1800 VAN
    - 24.5. TRENCHING AND BACKFILL MATERIAL (AS REQ'D)
25. ALL EQUIPMENT SHOWN SHALL BE RATED FOR RECYCLED WATER USE WITH APPROPRIATE PURPLE NONPOTABLE IDENTIFICATION.
26. SEE ADDITIONAL SPECIFICATION NOTES ON SHEET L5.1.

MWELO COMPLIANCE NOTES

THE PROJECT PROVIDES A WEATHER-BASED IRRIGATION CONTROLLER WITH A WEATHER STATION/MODULE ALLOWING AUTOMATIC ADJUSTMENTS BASED ON CHANGES IN THE WEATHER AND RAIN SHUTOFF CAPABILITY.

ALL AREAS LESS THAN EIGHT FEET WIDE ARE IRRIGATED ONLY WITH BUBBLERS OR DRIP IRRIGATION.

DRIP IRRIGATION IS PROPOSED ON AT LEAST 25% OF THE LANDSCAPED AREA (4,403 SF TOTAL).
- DRIP AREAS = 4,104 SF (95%)
- TREE BUBBLERS = 300 SF (5%)

CHECK VALVES (IN-LINE OR INTEGRATED) ARE NOT REQUIRED FOR THIS PROJECT DUE TO THE RELATIVELY LEVEL GRADE CHANGE THROUGHOUT THE PROJECT.

PROJECT PROVIDES A DEDICATED PRESSURE REDUCING VALVE ON THE IRRIGATION MAINLINE TO BRING OPERATING PRESSURE DOWN TO PROPER DESIGN RANGES FOR DRIP AND BUBBLER SYSTEMS.

SEE SHEET L4.0 FOR LANDSCAPE COMPLIANCE REQUIREMENTS CHECKLIST.

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	DETAIL
	RAIN BIRD 1806-U-SAM-NP U15 SERIES TURF SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL, 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE, AND NON POTABLE PURPLE CAP.	7/L3.3
	RAIN BIRD RWS-B-C-P-SOCK (TWO PER TREE) ROOT WATERING SYSTEM WITH 4.0" DIAMETER X 36.0" LONG WITH LOCKING GRATE, SEMI-RIGID MESH TUBE. CHECK VALVE, PURPLE GRATE, AND SAND SOCK. RAIN BIRD BUBBLER OPTION AS INDICATED: 1401 0.25 GPM, 1402 0.5 GPM, 1404 1.0 GPM, 1408 2.0 GPM.	8/L3.3

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	DETAIL
	HUNTER I-20-06-SS-PRB-R TURF ROTOR, 6.0" POP-UP. ADJUSTABLE AND FULL CIRCLE. STAINLESS STEEL RISER. DRAIN CHECK VALVE. STANDARD NOZZLE. WITH RECLAIMED WATER PURPLE ID.	7/L3.3

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	DETAIL
	PIPE TRANSITION POINT PIPE TRANSITION POINT FROM PVC LATERAL TO DRIP TUBING	1/L3.4
	AREA TO RECEIVE DRIP EMITTERS RAIN BIRD PCT PRESSURE COMPENSATING THREADED LOW-FLOW BUBBLERS. OFFERED IN 5 GPH, 7 GPH, AND 10 GPH MODELS, WITH 1/2" FPT THREADED INLET. LIGHT BROWN = 5 GPH, VIOLET = 7 GPH, AND GREEN = 10 GPH.	1/L3.4
	AREA TO RECEIVE DRIPLINE TORO RGP-412-NP SUB-SURFACE PRESSURE COMPENSATING LANDSCAPE DRIPLINE WITH ROOTGUARD TECHNOLOGY. 1.00 GPH EMITTERS AT 12" O.C. DRIPLINE LATERALS SPACED AT 12" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. PURPLE TUBING FOR EFFLUENT WATER USE.	1/L3.4

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	DETAIL
	RAIN BIRD PEB-PRS-D-NP-HAN 1", 1-1/2", 2" PLASTIC INDUSTRIAL VALVES. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION. WITH PRESSURE REGULATOR MODULE, AND PURPLE FLOW HANDLE FOR NON-POTABLE WATER USE.	4/L3.3
	RAIN BIRD PESBR-PRS-D 1", 1-1/2", AND 2" DURABLE CHLORINE-RESISTANT VALVES FOR RECLAIMED WATER APPLICATIONS. WITH SCRUBBER MECHANISM TECHNOLOGY. PURPLE FLOW CONTROL HANDLE, AND PRESSURE REGULATOR MODULE.	2/L3.3
	QUICK COUPLER VALVE SIGNATURE-7644 QUICK COUPLING VALVE WITH LAVENDER NON-LOCKING COVER. 1" NPT. "RECLAIMED WATER - DO NOT DRINK": IN ENGLISH AND SPANISH.	9/L3.3
	MATCO-NORCA 759 BRASS SHUT OFF BALL VALVE, 1/2" TO 4". TWO PIECE BODY, BLOW-OUT PROOF STEM, CHROME PLATED SOLID BRASS BALL, THREADED, WITH PTFE SEATS. SAME SIZE AS MAINLINE PIPE.	1/L3.3
M	BUCKNER-SUPERIOR 3100 2" NORMALLY OPEN BRASS MASTER VALVE THAT PROVIDES DIRTY WATER PROTECTION. AVAILABLE IN 3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2" AND 3".	3/L3.3
C	CONTROLLER EXISTING SITE CONTROLLER.	-
FS	TORO TFS 1/2", 3/4", 1", 1-1/2", 2", 3", AND 4" PLASTIC TEE SIZES. EFFECTIVE FLOW MONITORING, EVEN IN FLOWS LESS THAN 5 GPM. COMPATIBLE WITH TORO AND COMPETITIVE CONTROLLERS. IMPELLER-BASED, PVC DESIGN.	6/L3.3
POC	WATER METER 3" EXISTING RECYCLED WATER METER	-
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40-NP	2/L3.4
	IRRIGATION MAINLINE: PVC SCHEDULE 80-NP	2/L3.4
	PIPE SLEEVE: PVC SCHEDULE 80	2/L3.4

Valve Callout
Valve Number
Valve Flow
Valve Size

REGISTERED LANDSCAPE ARCHITECT
JEFFREY C. FERBER NO. 2544
Signature 03/31/00 Renewal Date
Date
STATE OF CALIFORNIA

CITY OF SANTA ANA CALIFORNIA

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
APPROVED: DATE
CITY ENGINEER ORIGINAL SIGNED DATE

DESIGN
DRAWN
CHECKED

NO.	REVISIONS	DATE	APPROVED

PUBLIC IMPROVEMENT PLANS
ORTEGA PARK
IRRIGATION LEGEND AND NOTES

03/06/2020
DATE

2019-00678
PBW. NO.

- BID NO. | L3.0 SHT. DES.

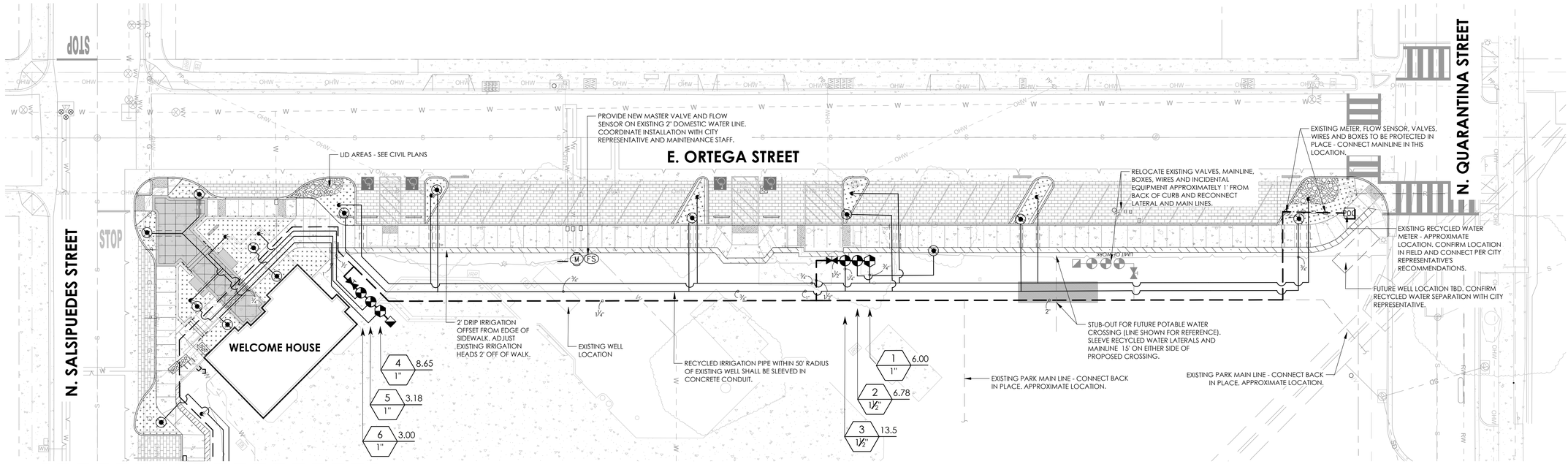
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DWG. NO.

SHT. 17 OF 27

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EAST ORTEGA STREET IMPROVEMENTS

1"=20'-0"



MATCHLINE - SEE SHEET L3.2

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL
	RAIN BIRD RWS-B-C-P-SOCK (TWO PER TREE)

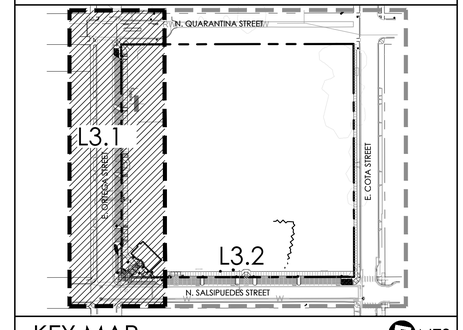
SYMBOL	MANUFACTURER/MODEL
	PIPE TRANSITION POINT
	AREA TO RECEIVE DRIP EMITTERS RAIN BIRD PCT
	AREA TO RECEIVE DRIPLINE TORO RGP-412-NP

SYMBOL	MANUFACTURER/MODEL
	RAIN BIRD PEB-PRS-D-NP-HAN
	RAIN BIRD PESBR-PRS-D
	QUICK COUPLER VALVE
	MATCO-NORCA 759
M	BUCKNER-SUPERIOR 3100 2"
C	CONTROLLER
FS	TORO TFS
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40-NP
	IRRIGATION MAINLINE: PVC SCHEDULE 80-NP
	PIPE SLEEVE: PVC SCHEDULE 80

Valve Callout
— Valve Number
— Valve Flow
#" — Valve Size

0 10' 20' 40'
SCALE: 1" = 20'

NOTES:
1. REFER TO CIVIL PLANS FOR STRIPING, CURB RAMPS, STEPS AND GRADING AND DRAINAGE.
2. SEE SHEET L-1.01 - L-1.04 FOR CONSTRUCTION PLANS, DETAILS, AND NOTES.
4. SEE SHEETS L-3.0 - 3.04 FOR PLANTING LAYOUT, NOTES, AND DETAILS.
5. SEE ELECTRICAL PLANS FOR ALL LIGHTING AND LOCATIONS.



KEY MAP NTS

REGISTERED LANDSCAPE ARCHITECT
JEFFREY C. FERBER NO. 2844
03/31/00 Renewal Date
STATE OF CALIFORNIA

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
APPROVED: CITY ENGINEER DATE
ORIGINAL SIGNED DATE

DESIGN
DRAWN
CHECKED

NO.	REVISIONS	DATE	APPROVED

PUBLIC IMPROVEMENT PLANS
ORTEGA PARK
IRRIGATION PLAN

03/06/2020
DATE

2019-00678
PBW. NO.

- BID NO. | L3.1 SHT. DES.

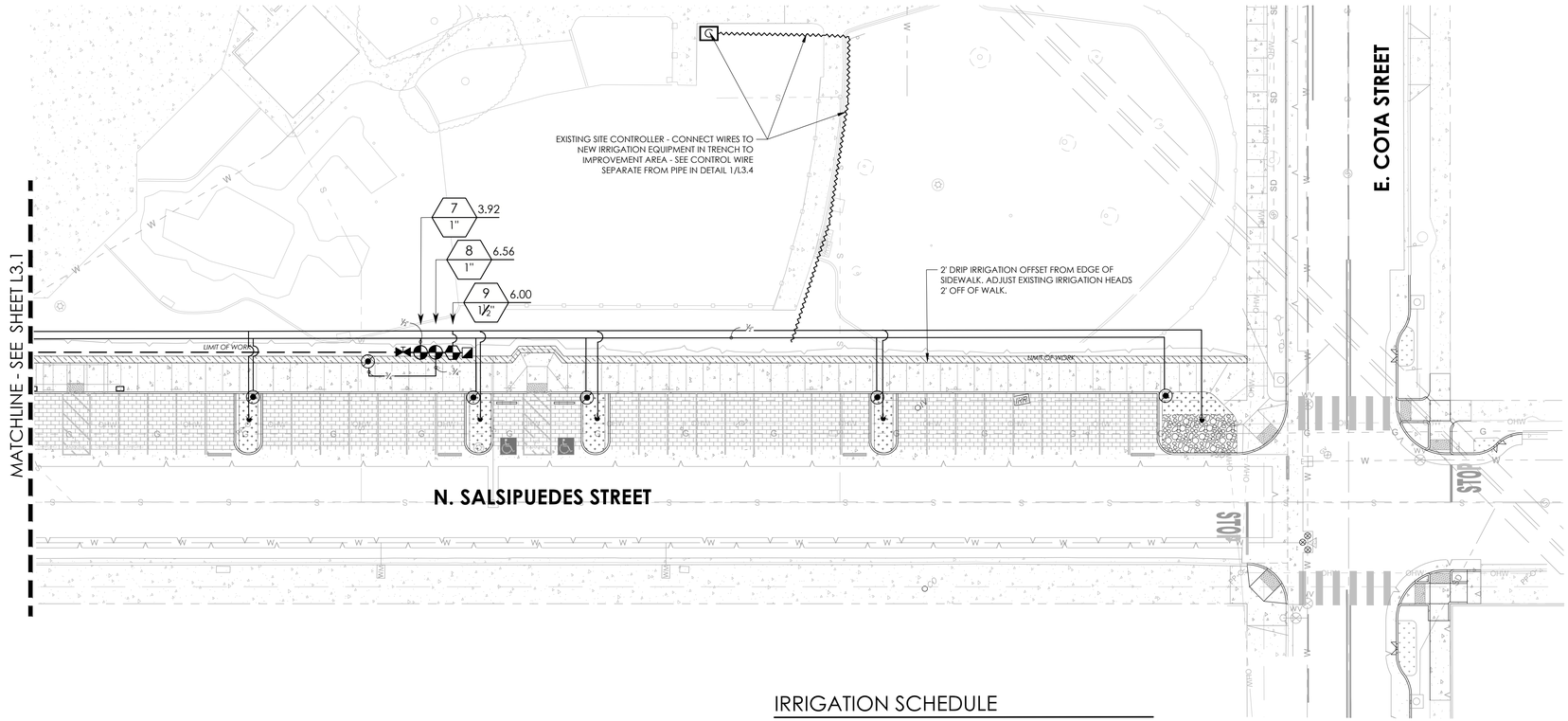
C-1-4879
DWG. NO.

SHT. 18 OF 27

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NORTH SALSIPUEDES STREET IMPROVEMENTS

1"=20'-0"



IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL
	RAIN BIRD RWS-B-C-P-SOCK (TWO PER TREE)

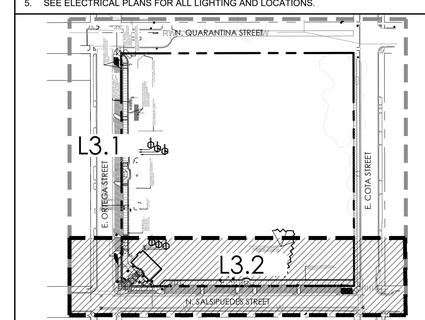
SYMBOL	MANUFACTURER/MODEL
	PIPE TRANSITION POINT
	AREA TO RECEIVE DRIP EMITTERS RAIN BIRD PCT
	AREA TO RECEIVE DRIPLINE TORO RGP-412-NP

SYMBOL	MANUFACTURER/MODEL
	RAIN BIRD PEB-PRS-D-NP-HAN
	RAIN BIRD PESBR-PRS-D
	QUICK COUPLER VALVE
	MATCO-NORCA 759
M	BUCKNER-SUPERIOR 3100 2"
C	CONTROLLER
FS	TORO TFS
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40-NP
	IRRIGATION MAINLINE: PVC SCHEDULE 80-NP
	PIPE SLEEVE: PVC SCHEDULE 80

Valve Callout
Valve Number
Valve Flow
#" Valve Size

0 10' 20' 40'
SCALE: 1" = 20'

NOTES:
1. REFER TO CIVIL PLANS FOR STRIPING, CURB RAMPS, STEPS AND GRADING AND DRAINAGE.
2. SEE SHEET L-1.01 - L-1.04 FOR CONSTRUCTION PLANS, DETAILS, AND NOTES.
4. SEE SHEETS L-3.0 - 3.04 FOR PLANTING LAYOUT, NOTES, AND DETAILS.
5. SEE ELECTRICAL PLANS FOR ALL LIGHTING AND LOCATIONS.



KEY MAP NTS

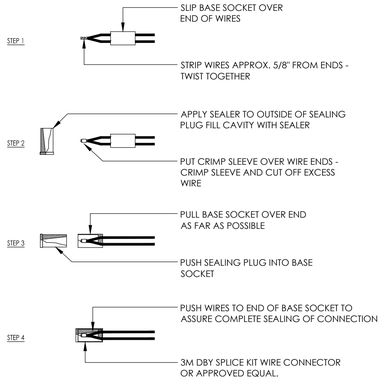
REGISTERED LANDSCAPE ARCHITECT
JEFFREY C. FERBER NO. 2844
Signature 03/31/00 Renewal Date
Date
STATE OF CALIFORNIA

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
APPROVED: CITY ENGINEER DATE
ORIGINAL SIGNED DATE —
DESIGN
DRAWN
CHECKED
DATE APPROVED
REVISIONS
NO.

PUBLIC IMPROVEMENT PLANS
ORTEGA PARK
IRRIGATION PLAN

03/06/2020 DATE
2019-00678 PBW. NO.
- BID NO. | L3.2 SHT. DES.
C-1-4879 DWG. NO.
SHT. 19 OF 27

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12 WIRING CONNECTIONS

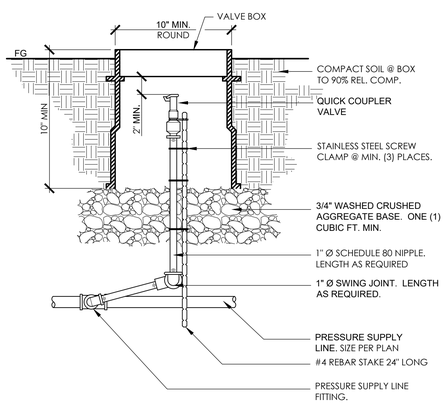
1 1/2" = 1'-0" 328409.79-02

11 DRIPLINE FLUSH VALVE AT GRADE

3" = 1'-0" 328413.49-26

10 DRIP AIR RELIEF VALVE IN BOX

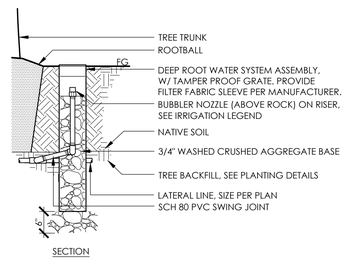
3" = 1'-0" 328413.53-03



NOTE:
PLACE AGGREGATE PRIOR TO INSTALLATION OF VALVE BOX.

9 QUICK COUPLER

1 1/2" = 1'-0" 328406.43-10

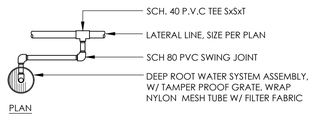


NOTES :

A. USE PIPE TEFLON TAPE ON ALL PIPE THREADS. TIGHTEN THREADS UNTIL MODERATELY SNUG (DO NOT OVERTIGHTEN).

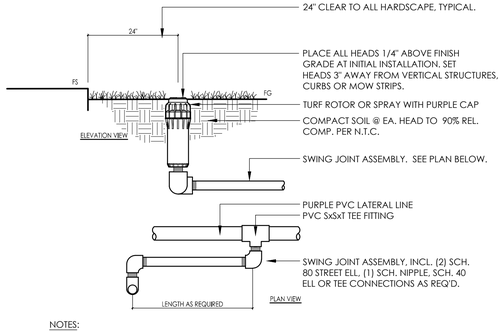
B. LOCATE TREE BUBBLER ON ROOT BALL SIDE OF ROOT CONTROL BARRIERS.

C. WHERE POSSIBLE, LOCATE TREE BUBBLER AWAY FROM ADJACENT HARDSCAPE AREAS TO DISCOURAGE ROOT GROWTH UNDER PAVING.



8 DEEP ROOT TREE BUBBLER

3/4" = 1'-0" 328415-01



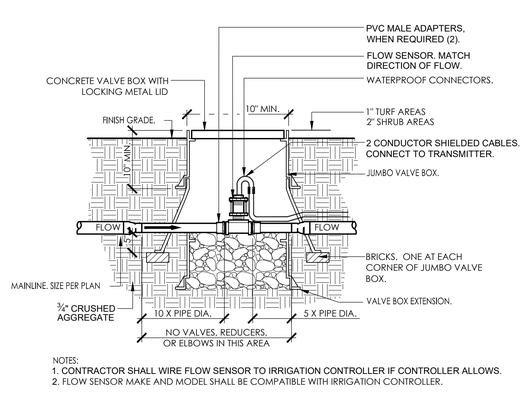
NOTES:

1. ALL PIPE THREADS ON SWING JOINT SHALL BE COATED WITH RECTORSEAL T PLUS 2 TEFLON PIPE COMPOUND OR APPROVED EQUAL BEFORE ASSEMBLY. DO NOT USE PIPE COMPOUND AND TAPE ON SWING JOINT THREADS. TIGHTEN THREADS UNTIL MODERATELY SNUG, DO NOT OVERTIGHTEN THREADS.

2. SIZE THE SWING JOINT USING THE FOLLOWING CRITERIA:
   - USE A 3/4" SIZE FOR A ROTOR WITH FLOWS LESS THAN 8 GPM.
   - USE A 1" SIZE FOR A ROTOR WITH FLOWS BETWEEN 8 - 11 GPM.
   - USE A 1 1/2" SIZE FOR A ROTOR WITH FLOWS GREATER THAN 11 GPM.

7 POP-UP ROTOR (RECLAIMED WATER)

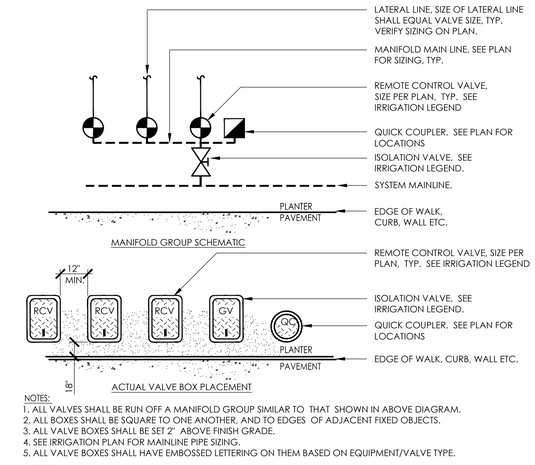
1 1/2" = 1'-0" 328403.16-21



NOTES:
1. CONTRACTOR SHALL WIRE FLOW SENSOR TO IRRIGATION CONTROLLER IF CONTROLLER ALLOWS.
2. FLOW SENSOR MAKE AND MODEL SHALL BE COMPATIBLE WITH IRRIGATION CONTROLLER.

6 FLOW SENSOR

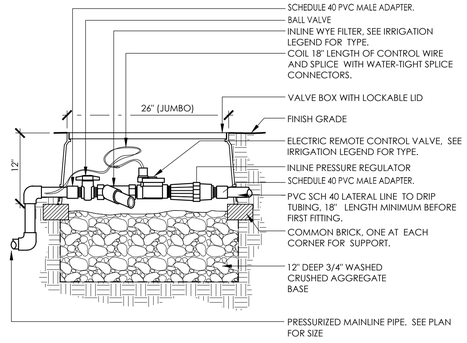
3/4" = 1'-0" 328409.63-02



NOTES:
1. ALL VALVES SHALL BE RUN OFF A MANIFOLD GROUP SIMILAR TO THAT SHOWN IN ABOVE DIAGRAM.
2. ALL BOXES SHALL BE SQUARE TO ONE ANOTHER, AND TO EDGES OF ADJACENT FIXED OBJECTS.
3. ALL VALVE BOXES SHALL BE SET 2" ABOVE FINISH GRADE.
4. SEE IRRIGATION PLAN FOR MAINLINE PIPE SIZING.
5. ALL VALVE BOXES SHALL HAVE EMBOSSED LETTERING ON THEM BASED ON EQUIPMENT/VALVE TYPE.

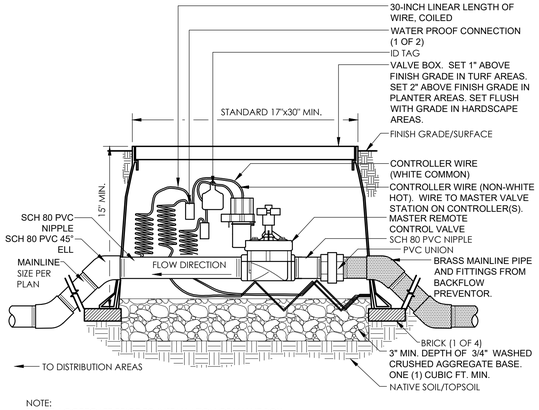
5 VALVE BOX LAYOUT IN PLANTERS

3/8" = 1'-0" 328490-01



4 DRIP ZONE CONTROL VALVE

1/2" = 1'-0" 328413.76-50



NOTE:
PLACE AGGREGATE PRIOR TO INSTALLATION OF VALVE BOX.

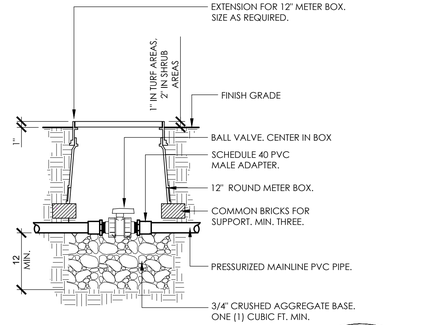
3 MASTER VALVE

3/4" = 1'-0" 328406.23-50

NOTE:
PLACE AGGREGATE PRIOR TO INSTALLATION OF VALVE BOX.

2 REMOTE CONTROL VALVE

1" = 1'-0" 328406.13-08



NOTE:
PLACE AGGREGATE PRIOR TO INSTALLATION OF VALVE BOX.

1 BALL VALVE

1" = 1'-0"

REGISTERED LANDSCAPE ARCHITECT
JEFFREY C. FERBER NO. 2844
Expires
03/31/00
Renewal Date
Date
STATE OF CALIFORNIA

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

APPROVED: — DATE —
CITY ENGINEER — ORIGINAL SIGNED — DATE

DESIGN
DRAWN
CHECKED

DATE APPROVED

REVISIONS
NO.

PUBLIC IMPROVEMENT PLANS
ORTEGA PARK
IRRIGATION DETAILS

03/06/2020
DATE

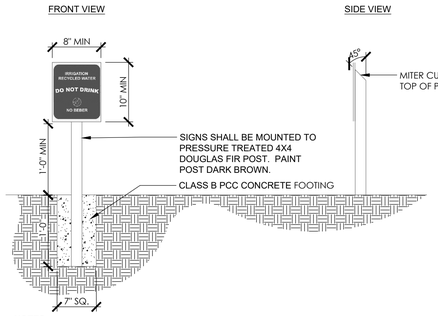
2019-00678
PBW. NO.

- BID NO. | L3.3 SHT. DES.

C-1-4879
DWG. NO.

SHT. 20 OF 27

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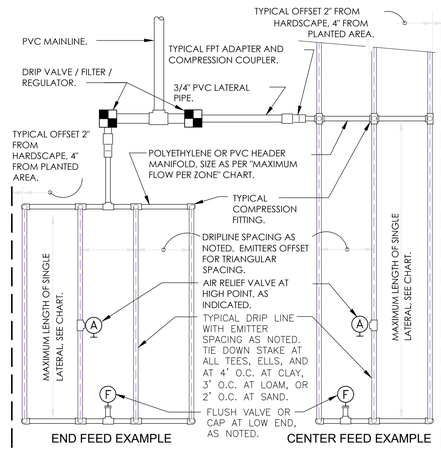


NOTES:

1. ALL SIGNS SHALL BE SIGN GRADE ALUMINUM, .080" THICK, WITH WHITE LETTERS ON A PURPLE BACKGROUND. SIGNS SHALL INCLUDE LANGUAGE STATING THAT "RECYCLED WATER" IS USED FOR IRRIGATION, SHALL CONTAIN THE THE WARNING "DO NOT DRINK", AND SHALL INCLUDE THE INDUSTRY STANDARD SYMBOL: ⊘
2. ALL MOUNTING HARDWARE SHALL BE GALVANIZED STEEL.
3. SIGN LETTERS SHALL BE REFLECTIVE MATERIAL.
4. HEIGHT OF SIGNS WILL DEPEND ON LOCATION AND SURROUNDING LANDSCAPE PLANT TYPES. IN ALL CASES, SIGN SHALL BE VISIBLE TO THE PUBLIC.

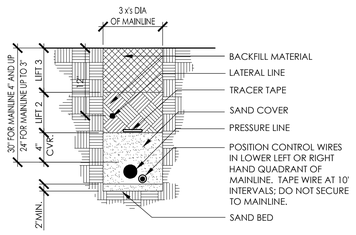
3 RECLAIMED WATER SIGN

1" = 1'-0" 328491-15

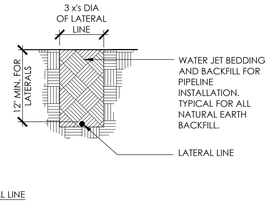


1 TYPICAL RAIN BIRD DRIPLINE REQUIREMENTS

N.T.S.

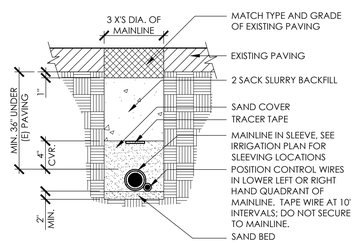


MAINLINE COMBINED WITH LATERAL LINE

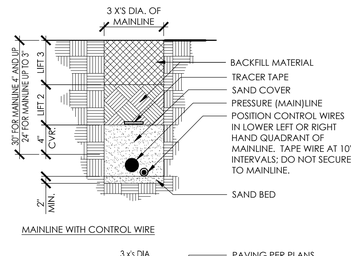


LATERAL LINE

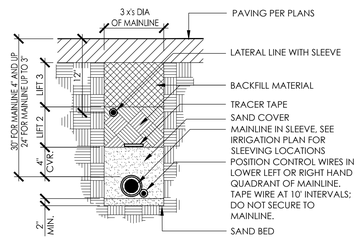
RECLAIMED WATER & POTABLE WATER PIPE



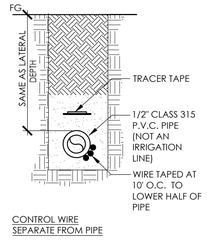
MAINLINE WITH CONTROL WIRE BELOW EXISTING PAVING



MAINLINE WITH CONTROL WIRE



MAINLINE COMBINED WITH LATERAL LINE UNDER PAVEMENT



CONTROL WIRE SEPARATE FROM PIPE

NOTES:

1. PIPE BEDDING AND BACKFILL SHALL BE WATER JETTED TO ACHIEVE PROPER DENSIFICATION.
2. PIPE AND CONTROL WIRE CROSSING VECHICULAR ROADWAY SHALL BE SLEEVED PER PLANS AND THIS DETAIL
3. ELECTRICAL SLEEVE: 3" MIN; LARGER IF REQUIRED BY INSPECTOR.
4. IRRIGATION SLEEVE: TWO PIPE SIZES LARGER THAN WATER PIPE SIZE.
5. SHOW ALIGNMENT OF ALL CONTROL WIRE NOT INSTALLED WITH MAINLINE ON AS-BUILT DRAWINGS.

2 TRENCHING

1" = 1'-0" 328401-01

MAXIMUM LATERAL LENGTH (FEET)

PSI	EMITTER FLOW RATE GPH					
	12" SPACING		18" SPACING		24" SPACING	
	0.6	0.9	0.6	0.9	0.6	0.9
10	125	96	175	135	218	171
20	249	191	350	171	442	340
30	307	236	434	333	550	422
40	350	268	495	380	627	171
50	125	96	175	135	218	171
60	125	96	175	135	218	171

GRID PRECIPITATION RATES (IN/HR)

EMITTER SPACING	LATERAL SPACING	EMITTER FLOW RATE	
		0.6	0.9
12	12	0.96	1.44
18	18	0.69	1.03
24	24	0.28	0.41

LATERAL FLOW PER 100 FT (GPM)

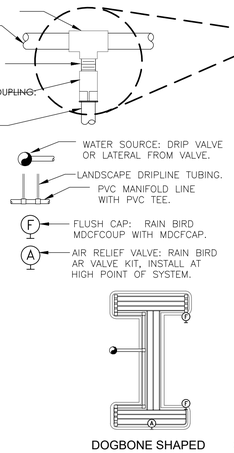
EMITTER FLOW	12" SPACING	18" SPACING	24" SPACING
0.6 GPH	1.0 GPM	0.67 GPM	0.50 GPM
0.9 GPH	1.5 GPM	1.0 GPM	0.75 GPM

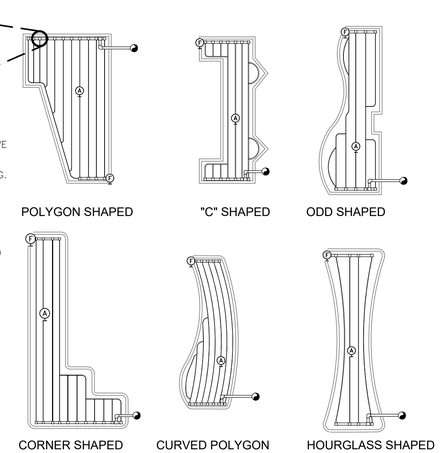
MAXIMUM FLOW PER ZONE

	MAX GPM	PSI LOSS
SCHEDULE 40 PVC HEADER SIZE		
1/2"	4.7 GPM	7.7 PSI
3/4"	8.3 GPM	5.6 PSI
1"	13.5 GPM	4.2 PSI
1-1/2"	33.9 GPM	2.9 PSI
2"	52.4 GPM	1.9 PSI
POLY PIPE HEADER SIZE		
1/2"	4.7 GPM	8.8 PSI
3/4"	8.3 GPM	6.3 PSI
1"	13.5 GPM	4.8 PSI
1-1/2"	31.8 GPM	2.9 PSI
2"	52.4 GPM	2.2 PSI

SLOPED CONDITION NOTE:

1. DRIPLINE LATERALS SHOULD FOLLOW THE CONTOURS OF THE SLOPE WHENEVER POSSIBLE.
2. INSTALL AIR RELIEF VALVE AT HIGHEST POINT.
3. NORMAL SPACING WITHIN THE TOP ⅔ OF SLOPE,
4. INSTALL DRIPLINE AT 25% GREATER SPACING AT THE BOTTOM ⅓ OF THE SLOPE.
5. WHEN ELEVATION CHANGE IS 10 FT OR MORE, ZONE THE BOTTOM ⅓ ON A SEPARATE VALVE.





FX-IR-RB-DRIP-25

REGISTERED LANDSCAPE ARCHITECT
JEFFREY C. FERBER NO. 2844
Signature
03/31/00
Renewal Date
Date
STATE OF CALIFORNIA

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

APPROVED: CITY ENGINEER DATE —

ORIGINAL SIGNED DATE

DESIGN
DRAWN
CHECKED

NO.	REVISIONS	DATE	APPROVED

PUBLIC IMPROVEMENT PLANS
ORTEGA PARK
IRRIGATION DETAILS

03/06/2020
DATE

2019-00678
PBW. NO.

- BID NO. | L3.4 SHT. DES.

C-1-4879
DWG. NO.

SHT. 21 OF 27

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PLANTING NOTES

1. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO FURNISH AND INSTALL PLANT MATERIAL AS SHOWN ON THE DRAWINGS AND AS DESCRIBED IN THE SPECIFICATIONS.
2. PLANT SCHEDULE SHALL BE USED AS A GUIDE ONLY. CONTRACTOR SHALL VERIFY QUANTITIES BY PLAN CHECK. NOTIFY PROJECT LANDSCAPE ARCHITECT OF ANY MAJOR DISCREPANCIES.
3. CONTRACTOR SHALL SUBMIT LABELED PHOTOS OF ALL TREES AND SPECIMEN PLANTS FOR APPROVAL BY LANDSCAPE ARCHITECT. PHOTOS SHALL BE OF THE SPECIFIED CONTAINER SIZE.
4. CONTRACTOR SHALL SUBMIT PHOTOS OF ANY SUBSTITUTED PLANTS.
5. ADJUST PLANT MATERIAL AS NECESSARY AROUND UTILITY LOCATIONS. NOTIFY LANDSCAPE ARCHITECT OF ANY MAJOR CONFLICTS OR NECESSARY ADJUSTMENTS.
6. SOILS SHALL BE PREPARED AND AMENDED PER THE SPECIFICATIONS. SOIL AMENDMENTS AND PREPARATION SHALL CONFORM TO STATE MODEL WATER EFFICIENT LANDSCAPE ORDINANCE AND LOCAL WATER EFFICIENT LANDSCAPE ORDINANCES.
7. ALL WORK ON THE IRRIGATION SYSTEM INCLUDING OPERATIONAL TESTS, AND BACKFILLING OF TRENCHES SHALL BE COMPLETED AHEAD OF PLANTING.
8. LOCATIONS OF ALL PLANT MATERIAL SHALL BE REVIEWED ON SITE BY THE CITY'S AUTHORIZED REPRESENTATIVE PRIOR TO PLANTING. THE REPRESENTATIVE RESERVES THE RIGHT TO MAKE ANY ADJUSTMENTS, SUBSTITUTIONS, ADDITIONS, AND DELETIONS TO THE PLANT LAYOUT AS WORK PROGRESSES.
9. A MINIMUM 3-INCH LAYER OF DECOMPOSED GRANITE MULCH (COLOR AS APPROVED) SHALL BE APPLIED ON ALL EXPOSED SOIL SURFACES IN PLANTER AREAS DELINEATED ON PLAN. ALL OTHER PLANTER AREAS SHALL HAVE A MINIMUM 3-INCH LAYER OF BARK MULCH PER SPECS.
10. UNLESS CONTRADICTED BY THE REQUIRED SOILS TEST, COMPOST AT A RATE OF A MINIMUM OF FOUR CUBIC YARDS PER 1,000 SQUARE FEET OF PERMEABLE AREA SHALL BE INCORPORATED TO A DEPTH OF SIX INCHES INTO THE SOIL.
11. REFER TO ADDITIONAL NOTES ON SHEET L5.0 AND PLANTING DETAILS FOR ADDITIONAL INFORMATION.

Landscape Compliance Requirements

Landscape Design for Water Conservation
Compliance Statement
(Signed copy to be included on L-Sheet)

Mandatory Measures: *(Please note the sheet numbers for these measures)*	**Sheet#**
No turf in parkways, medians, or other areas with any dimension of < 8 feet	L4.0
No turf on >20% slope	L4.0
Residential, mixed-use & institutional projects have ≥80% of the landscaped area designed with water wise plants Commercial projects have 100% of the landscaped area designed with water wise plants	N/A
Plan includes total square footage of landscaped area, as well as percentage breakdowns for 1) water-wise landscaped area and 2) medium and high water using landscape area (including turf)	L3.0
Plant list includes botanical name, common name, and WUCLOS designation	L4.0
Three inches of mulch, specified as required	L4.0
Areas of sprinkler coverage avoids overspray and runoff, including optimum distribution uniformity, head-to-head spacing and setbacks from walkways and pavement	L3.0-L3.4
Sprinklers have matched precipitation rates within each valve and circuit	N/A
Valves separated for individual hydrozones based on plant water needs and sun/shade requirements	L3.0-L3.4
Weather based irrigation controller with a rain shutoff sensor for the entire irrigation system (if including an automatic irrigation system)	N/A
Areas less than 8' wide irrigated only with bubblers, rotating nozzles on pop-ups, sub-surface, or drip	L3.0-L3.4
Drip irrigation system on >25% of irrigated landscaped area	L3.0-L3.4
Check valves (inline or integrated) located to prevent unwanted draining of irrigation lines	L3.0-L3.4
Pressure regulator(s) scheduled for mainline(s) if necessary, inline regulators at each valve	L3.0-L3.4
Grading encourages water retention and infiltration by preserving open space and creating depressed areas/swales. Grading mimics natural, pre-development hydrologic flow paths and maintains and/or increases the width of flow paths in order to decrease flow rates	C4-C7

I state that I am familiar with the Landscape Design Standards for Water Conservation as most recently adopted by the Santa Barbara City Council and that the landscape design for this project complies with those standards.

It is my understanding that verification of compliance will be necessary upon final building inspection. I shall inspect the completed installation and I will submit in writing that the installation substantially conforms to the approved plans and meets or exceeds the minimum requirements of the Landscape Design Standards.

Signature | JEFF FERBER (Name) | 2844 / 03-31-2021 (License # and Exp. Date)

www.SantaBarbaraCA.gov/LandscapeDesignStandards — Revised: 6/28/2018

PLANTING SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	DETAIL	WATER USE
	2	ARCHONTOPHOENIX CUNNINGHAMIANA	KING PALM	12` B.T.	2/L4.4	L
	1	ARCHONTOPHOENIX CUNNINGHAMIANA	MULTI-TRUNK KING PALM	15` B.T.	2/L4.4	L
	7	PINUS CANARIENSIS (DESIGNATED SPECIES PER CITY OF SANTA BARBARA STREET TREE MASTER PLAN.)	CANARY ISLAND PINE	24"BOX	3/L4.4	L
	7	STENOCARPUS SINUATUS (DESIGNATED SPECIES PER CITY OF SANTA BARBARA STREET TREE MASTER PLAN.)	FIREWHEEL TREE	24"BOX	3/L4.4	L

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	CONT	DETAIL	WATER USE
O	6	AEONIUM CANARIENSE	AEONIUM	2 GAL	1/L4.4	L
AG	10	AGAVE ATTENUATA `NOVA`	BLUE CLONE	5 GAL	1/L4.4	L
	28	AGAVE DESMETTIANA `VARIEGATA`	VARIEGATED AGAVE	5 GAL	1/L4.4	L
B	9	AGAVE X `BLUE GLOW`	BLUE GLOW AGAVE	2 GAL	1/L4.4	L
U	26	BULBINE FRUTESCENS	STALKED BULBINE	1 GAL	1/L4.4	L
LEU	2	LEUCADENDRON X `SAFARI GOLD STRIKE`	YELLOW CONEBUSH	15 GAL	1/L4.4	L
L	91	LOMANDRA LONGIFOLIA `LIME TUFF`	LIME TUFF DWARF MAT RUSH	1 GAL	1/L4.4	L
OO	3	OLEA EUROPAEA `LITTLE OLLIE` TM	LITTLE OLLIE OLIVE	5 GAL	1/L4.4	L
ST	7	STRELITZIA REGINAE	BIRD OF PARADISE	5 GAL	1/L4.4	L

GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SPACING	DETAIL	WATER USE
	361	LOMANDRA CONFERTIFOLIA `LITTLE CON` SPECIES SUITABLE FOR LID AREAS.	SMALL MAT RUSH	1 GAL	24" o.c.	4/L4.4	L
	527	SENECIO SERPENS	BLUE CHALKSTICKS	PLUGS	6" o.c.	4/L4.4	L
	7,878 SF	TURF SOD GN-1	HYBRID BERMUDA BLEND	SOD			
		DECOMPOSED GRANITE MULCH					

REGISTERED LANDSCAPE ARCHITECT — JEFFREY C. FERBER NO. 2844 — Signature 03/31/00 Renewal Date — Date — STATE OF CALIFORNIA

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION
APPROVED: CITY ENGINEER — DATE — ORIGINAL SIGNED — DATE
DESIGN
DRAWN
CHECKED
DATE APPROVED
REVISIONS
NO.

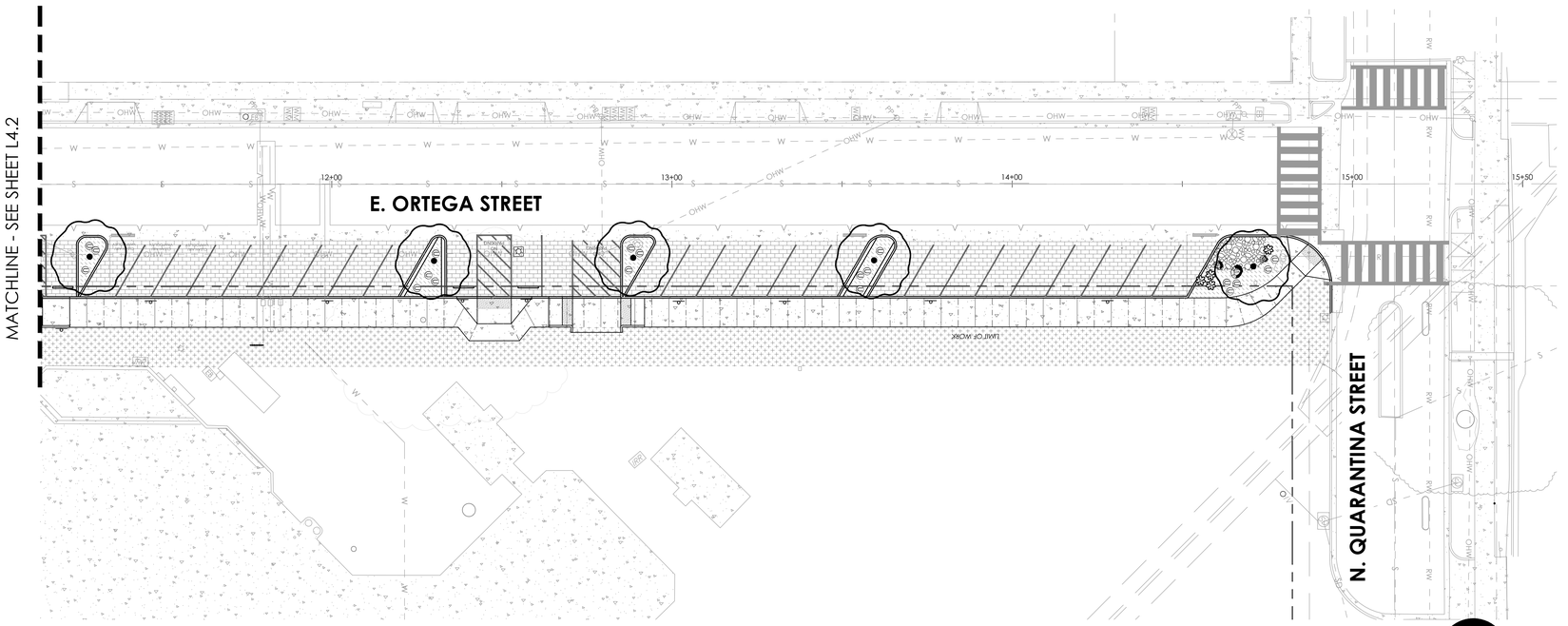
PUBLIC IMPROVEMENT PLANS
ORTEGA PARK
PLANTING SCHEDULE AND NOTES

03/06/2020 DATE
2019-00678 PBW. NO.
- BID NO. | L4.0 SHT. DES.
C-1-4879 DWG. NO.
SHT. 22 OF 27

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EAST ORTEGA STREET IMPROVEMENTS

1"=20'-0"



PLANT SCHEDULE

TREES	BOTANICAL NAME	COMMON NAME
	ARCHONTOPHOENIX CUNNINGHAMIANA	KING PALM
	ARCHONTOPHOENIX CUNNINGHAMIANA	MULTI-TRUNK KING PALM
	PINUS CANARIENSIS (DESIGNATED SPECIES PER CITY OF SANTA BARBARA STREET TREE MASTER PLAN.)	CANARY ISLAND PINE
	STENOCARPUS SINUATUS (DESIGNATED SPECIES PER CITY OF SANTA BARBARA STREET TREE MASTER PLAN.)	FIREWHEEL TREE

SHRUBS	BOTANICAL NAME	COMMON NAME
	AEONIUM CANARIENSE	AEONIUM
AG	AGAVE ATTENUATA `NOVA`	BLUE CLONE
	AGAVE DESMETTIANA `VARIEGATA`	VARIEGATED AGAVE
B	AGAVE X `BLUE GLOW`	BLUE GLOW AGAVE
U	BULBINE FRUTESCENS	STALKED BULBINE
LEU	LEUCADENDRON X `SAFARI GOLD STRIKE`	YELLOW CONEBUSH
L	LOMANDRA LONGIFOLIA `LIME TUFF`	LIME TUFF DWARF MAT RUSH
OL	OLEA EUROPAEA `LITTLE OLLIE` TM	LITTLE OLLIE OLIVE
ST	STRELITZIA REGINAE	BIRD OF PARADISE

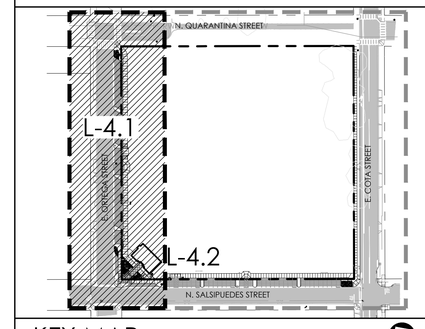
GROUND COVERS	BOTANICAL NAME	COMMON NAME
	LOMANDRA CONFERTIFOLIA `LITTLE CON`	SMALL MAT RUSH
	SENECIO SERPENS	BLUE CHALKSTICKS
	TURF SOD GN-1	HYBRID BERMUDA BLEND

SEE FULL LEGEND ON SHEET L4.0

0 10' 20' 40'

SCALE: 1" = 20'

NOTES:
1. REFER TO CIVIL PLANS FOR STRIPING, CURB RAMPS, GRADING, AND DRAINAGE.
2. REFER TO SHEETS LC-1.0 - LC-2.0 FOR CONSTRUCTION PLANS.
3. REFER TO SHEETS LI-3.0 - LI-3.4 FOR IRRIGATION PLANS.



KEY MAP NTS

REGISTERED LANDSCAPE ARCHITECT
JEFFREY C. FERBER NO. 2844
Signature
03/31/00
Renewal Date
Date
STATE OF CALIFORNIA

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
APPROVED: DATE
CITY ENGINEER ORIGINAL SIGNED DATE

DESIGN
DRAWN
CHECKED

NO.	REVISIONS	DATE	APPROVED

PUBLIC IMPROVEMENT PLANS
ORTEGA PARK
PLANTING PLAN

03/06/2020
DATE

2019-00678
PBW. NO.

- BID NO. | L4.1 SHT. DES.

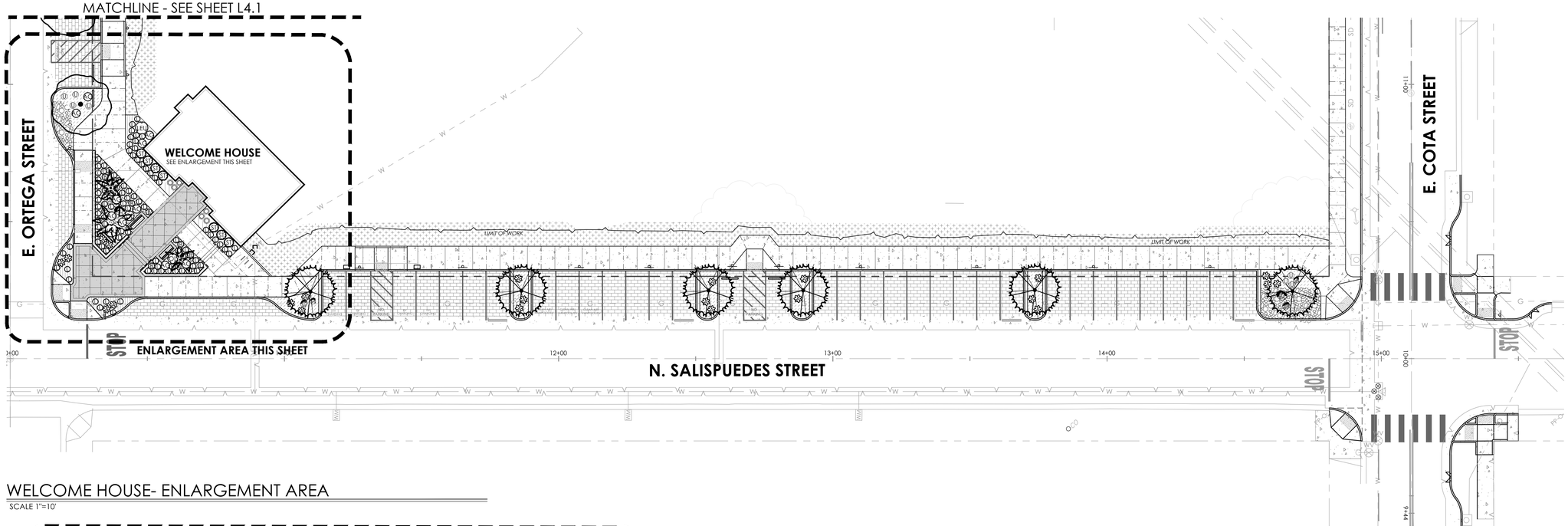
C-1-4879
DWG. NO.

SHT. 23 OF 27

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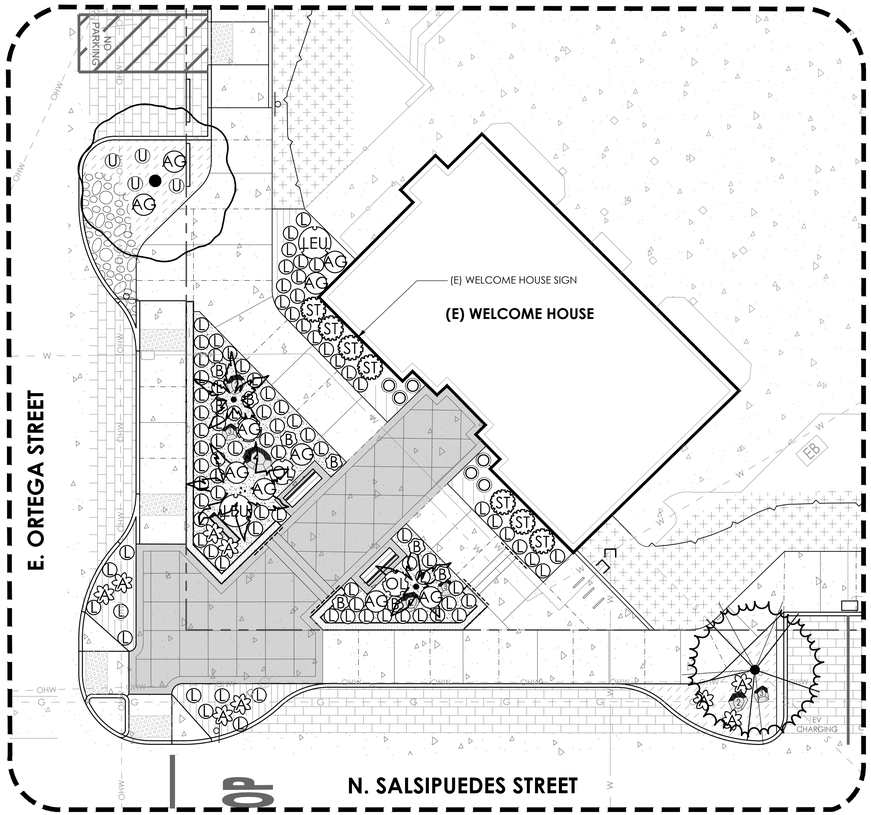
NORTH SALSIPUEDES STREET IMPROVEMENTS

1"=20'-0"



WELCOME HOUSE- ENLARGEMENT AREA

SCALE 1"=10'



0 5' 10' 20'

SCALE: 1" = 10'

PLANT SCHEDULE

TREES	BOTANICAL NAME	COMMON NAME
	ARCHONTOPHOENIX CUNNINGHAMIANA	KING PALM
	ARCHONTOPHOENIX CUNNINGHAMIANA	MULTI-TRUNK KING PALM
	PINUS CANARIENSIS (DESIGNATED SPECIES PER CITY OF SANTA BARBARA STREET TREE MASTER PLAN.)	CANARY ISLAND PINE
	STENOCARPUS SINUATUS (DESIGNATED SPECIES PER CITY OF SANTA BARBARA STREET TREE MASTER PLAN.)	FIREWHEEL TREE

SHRUBS	BOTANICAL NAME	COMMON NAME
O	AEONIUM CANARIENSE	AEONIUM
AG	AGAVE ATTENUATA `NOVA`	BLUE CLONE
	AGAVE DESMETTIANA `VARIEGATA`	VARIEGATED AGAVE
B	AGAVE X `BLUE GLOW`	BLUE GLOW AGAVE
U	BULBINE FRUTESCENS	STALKED BULBINE
LEU	LEUCADENDRON X `SAFARI GOLD STRIKE`	YELLOW CONEBUSH
L	LOMANDRA LONGIFOLIA `LIME TUFF`	LIME TUFF DWARF MAT RUSH
OL	OLEA EUROPAEA `LITTLE OLLIE` TM	LITTLE OLLIE OLIVE
ST	STRELITZIA REGINAE	BIRD OF PARADISE

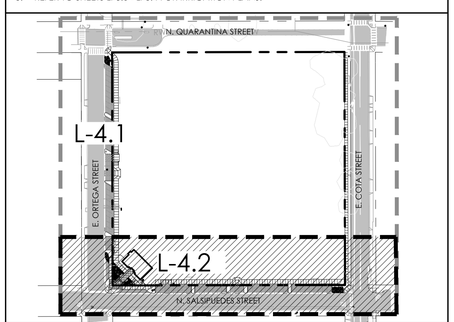
GROUND COVERS	BOTANICAL NAME	COMMON NAME
	LOMANDRA CONFERTIFOLIA `LITTLE CON`	SMALL MAT RUSH
	SENECIO SERPENS	BLUE CHALKSTICKS
	TURF SOD GN-1	HYBRID BERMUDA BLEND

SEE FULL LEGEND ON SHEET L4.0

0 10' 20' 40'

SCALE: 1" = 20'

NOTES:
1. REFER TO CIVIL PLANS FOR STRIPING, CURB RAMPS, GRADING, AND DRAINAGE.
2. REFER TO SHEETS LC-1.0 - LC-2.0 FOR CONSTRUCTION PLANS.
3. REFER TO SHEETS LI-3.0 - LI-3.4 FOR IRRIGATION PLANS.



KEY MAP NTS

REGISTERED LANDSCAPE ARCHITECT JEFFREY C. FERBER NO. 2844 Signature 03/31/00 Renewal Date Date STATE OF CALIFORNIA

PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION
APPROVED: CITY ENGINEER DATE
ORIGINAL SIGNED DATE

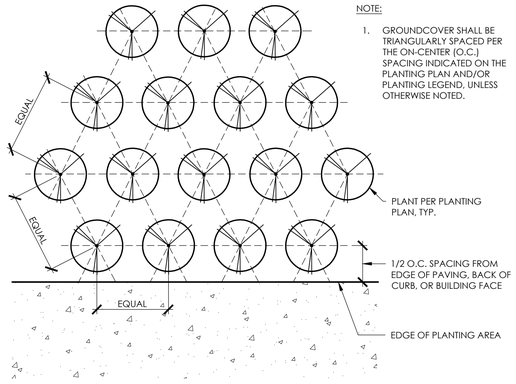
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NO.	REVISIONS	DATE	APPROVED

PUBLIC IMPROVEMENT PLANS
ORTEGA PARK
PLANTING PLAN AND ENLARGEMENT AREA

03/06/2020 DATE
2019-00678 PBW. NO.
- BID NO. | L4.2 SHT. DES.
C-1-4879 DWG. NO.
SHT. 24 OF 27

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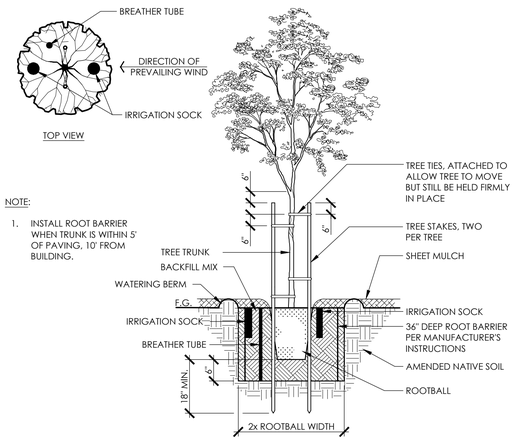


NOTE:

1. GROUNDCOVER SHALL BE TRIANGULARLY SPACED PER THE ON-CENTER (O.C.) SPACING INDICATED ON THE PLANTING PLAN AND/OR PLANTING LEGEND, UNLESS OTHERWISE NOTED.

4 GROUNDCOVER SPACING

1 1/2" = 1'-0" RRM-1144.01-10

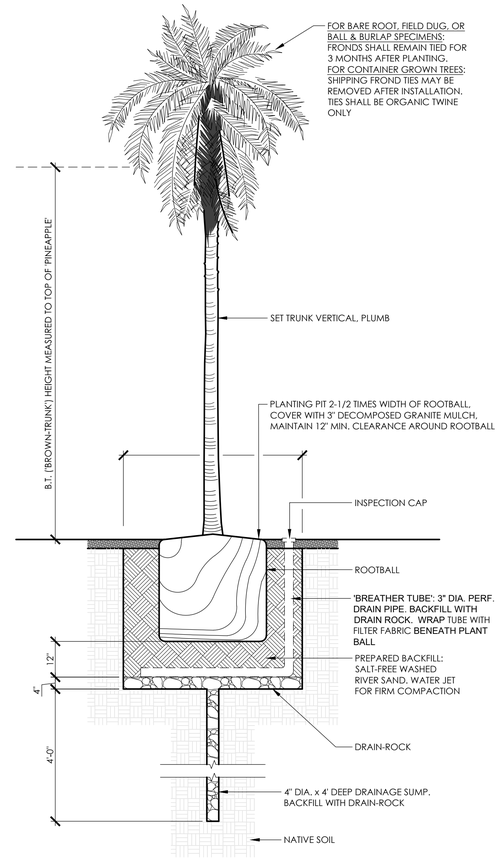


NOTE:

1. INSTALL ROOT BARRIER WHEN TRUNK IS WITHIN 5' OF PAVING, 10' FROM BUILDING.

3 TREE PLANTING WITH WOOD STAKING

1/2" = 1'-0" RRM-1144.01-11

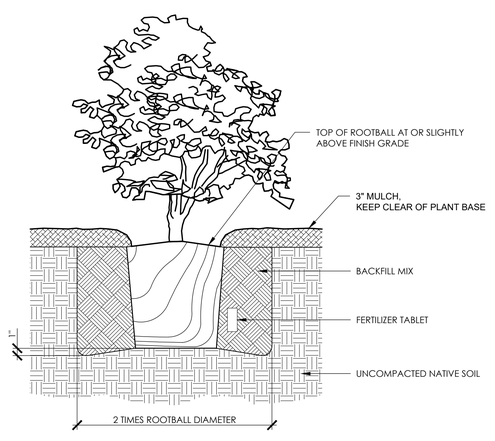


NOTE:

1. CONTRACTOR SHALL STAKE SPECIMEN PALM TREES IN THE EVENT PLANT CANNOT SUPPORT ITSELF.

2 PALM TREE PLANTING

1/2" = 1'-0" RRM-1144.01-09



1 SHRUB PLANTING

1 1/2" = 1'-0" 329333-48

REGISTERED LANDSCAPE ARCHITECT
JEFFREY C. FERBER NO. 2844
Signature
03/31/20
Renewal Date
Date
STATE OF CALIFORNIA

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

APPROVED: CITY ENGINEER ORIGINAL SIGNED DATE —

DESIGN
DRAWN
CHECKED

NO.	DATE	APPROVED

REVISIONS

PUBLIC IMPROVEMENT PLANS
ORTEGA PARK
PLANTING DETAILS

03/06/2020
DATE

2019-00678
PBW. NO.

- BID NO. | L4.3 SHT. DES.

C-1-4879
DWG. NO.

SHT. 25 OF 27

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LANDSCAPE SPECIFICATION NOTES

SECTION 32 9300 PLANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preparation of subsoil and topsoil.

B. Topsoil bedding.

Section 32 9300 Plants

C. New trees, plants, and ground cover.

D. Relocated trees, plants, and ground cover.

E. Mulch and Fertilizer.

F. Plants in pots/containers

G. Warranty Replacement

H. Tree Pruning.

1.02 RELATED REQUIREMENTS

A. Standard Specifications for Public Works Construction "Greenbook".

B. Section 32 8200 - Irrigation

1.03 DEFINITIONS

A. Weeds: Any plant life not specified or scheduled.

B. Plants: Living trees, plants, and ground cover specified in this Section, and described in ANSI Z60.1.

1.04 REFERENCE STANDARDS

A. ANSI/ANLA Z60.1 - American National Standard for Nursery Stock; 2004.

B. ANSI A300 Part 1 - American National Standard for Tree Care Operations -- Tree, Shrub and Other Woody Plant Maintenance -- Standard Practices; 2008.

1.05 SUBMITTALS

A. Submit list of plant life sources.

B. Submit purchase invoices from nurseries for review.

C. Samples: Submit the following to the City for acceptance:

1. Soil Separator: One square foot minimum, accompanied by product data.
2. Drain Rock: One-half cubic foot.
3. Wood Bark Mulch: One-half cubic foot.
4. Root Control Barrier: One square foot sample panel, accompanied by product data.

D. Product Data: Submit the following product information to the City for acceptance:

1. Tree Staking Materials: Manufacturer's literature.
2. Herbicides: Schedule for application of herbicides must be approved by the City.

F. Test Reports: Soil tests shall be performed by a certified soils analyst by the state of California. Provide the following tests and submit the results to the City:

1. Existing Site Soil: Provide two separate tests at distinctly separate on-site locations, for agricultural suitability, fertility, particle size analysis; including recommendations for soil amendment, and fertilization during the maintenance period.
2. Import Soil: Submit test reports of representative sample(s) for approval prior to delivery and for every 100 yards delivered to the site. Test for agricultural suitability, fertility, particle size analysis; including recommendations for soil amendment, and fertilization during the maintenance period.
3. Organic Amendments, Fir Bark: Test for partial organic amendment evaluation.
4. All Other Fertilizers and Amendments: For standard products, submit manufacturer's analysis. For all other products, submit analysis by testing laboratory.

G. Soil Mix: Submit cut-sheets of each accepted planter soil mix component and one-ounce samples of the fertilizers to the Inspector.

1.06 QUALITY ASSURANCE

A. Nursery Qualifications: Company specializing in growing and cultivating the plants with three years documented experience.

B. Installer Qualifications: Company specializing in installing and planting the plants with five years experience.

C. Testing Laboratory: Recognized laboratory for soil and plant disease analysis for ornamental horticulture, approved by the Inspector. Testing laboratory is to perform all work in accordance with the current methods of the Association of Official Agricultural Chemists.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer. Store fertilizers and amendments, bark mulch, soil mixes, and other materials which could stain concrete and similar surfaces in such a manner that staining does not occur.

B. Plants: Maintain all plant material in a healthy growing condition prior to and during planting operations. Protect plants at all times from sun and drying winds. Plants that cannot be planted immediately upon delivery shall be kept in the shade, well protected and watered. Plant material delivered to the site must be planted within 3 days of site delivery. Plants that cannot be installed on this work schedule shall be returned to the grower until installation requirements can be met.

1.08 SUBSTITUTIONS, ADDITIONS, DELETIONS

A. General: Submit proposals for substitutions in accordance with the requirements in the Greenbook. Acceptance by the Inspector is required prior to proceeding with the work under this Section.

B. The Architect reserves the right to substitute plant material of sizes equal to material specified, as the work progresses, at no additional cost to the City.

C. When requesting substitutions for plant material, the Contractor shall provide the Architect with the following:

1. Contact information for nurseries Contractor was unable to obtain plant material. Minimum of three are required.
2. Three (3) alternate plant suggestions as part of the initial request. Provide foliage/flower color, growth habit, and sunset zone of each.
3. Substitution requests which do not include the above requirements will be denied until requirements have been met.

1.09 FIELD CONDITIONS

A. General: Become familiar with the anticipated growing conditions prior to commencement of work. Notify the Inspector immediately in writing of any conditions, which will prevent the proper execution of the warranty responsibilities specified. Failure to so notify the Inspector constitutes acceptance of the growing conditions. Any removal, repair or replacement of plant material required by unsuitable conditions found after work has begun shall be done at no additional cost to the City.

B. Do not install plant life when ambient temperatures may drop below 35 degrees F or rise above 90 degrees F.

C. Do not install plant life when wind velocity exceeds 30 mph.

1.10 WARRANTY

A. Plant Material: Warrant that all trees under this Contract will be vigorous, healthy, free of dead or dying branches and branch tips, bearing foliage of normal density and color, and will otherwise comply with the requirements of this Section, for a period of one year from date of Final Acceptance. Any delay in completion of planting operations which extends the planting into more than one growing season shall extend the warranty period correspondingly.

B. Replacements: Without cost to the City, in a timely manner and as directed by the Inspector, replace all plants not meeting the requirements above throughout the course of the warranty period. Replacements shall closely match adjacent specimens of the same species in size and shall comply with all requirements of this specification.

C. Species: Replace all plant material determined by the City within two years following the final acceptance of the project, to be untrue to the species, clone and/or variety specified, to the equal condition of adjacent plants at the time of replacement, at no additional cost to the City.

PART 2 PRODUCTS

2.01 PLANTS

A. Trees, Plants, and Ground Cover: Species and size identifiable in plant schedule, grown in climatic conditions similar to those in locality of the Work.

1. Size:
   a. Plants shall conform to measurements specified. Measure plants when branches are in their normal position. Height and spread dimensions specified refer to the main body of plant and not branch tip to tip. Take caliper measurements at a point on the trunk 6 inches above natural ground line for trees up to 4 inches in caliper, and at a point 12 inches above the natural ground line for trees over 4 inches in caliper.
   b. The measurements specified are the measurements after pruning, where pruning is required. Plants that meet the measurements specified, but do not possess a normal balance between height, spread, and caliper, shall be rejected.
   c. Plants larger than specified may be used if approved by the City, and if provided at no additional cost to the City. If larger plants are approved, the root ball shall be increased in proportion to the size of the plant; irrigation system shall also be adjusted as required to accommodate larger plants.

B. Acclimatization: The General Contractor is responsible for supplying plant material that has been properly acclimated and conditioned, in accordance with good horticultural practices, for the exposure, wind and humidity levels, soil conditions, etc., encountered at the project site and in the proposed plant location.

C. Coordination: The Contractor shall coordinate his acclimatization schedule with the City as to allow an adequate conditioning period for the plant material prior to the approved date of
planting commencement. Notify the City in writing prior to proceeding with any acclimatization work if approved work schedule allows insufficient time to acclimate the material.

D. Quality: Plants shall be superior in form, compactness and symmetry; sound, healthy and vigorous, well branched and densely foliated when in leaf; free of disease, insect pests, eggs or larvae, and free from physical damage or adverse conditions that would prevent thriving growth.

E. Species: Tag one of each plant prior to delivery to the site; label with genus, species and variety. Any plants not so identified will be subject to rejection by the City. Plants may be cross referenced with nurseries invoice at the discretion of the Architect.

F. Root Ball:

1. Do not supply any bare root or ball and burlapped stock unless approved by the City.
2. Sizes: As specified on the plans. Where no root ball dimensions have been specified, supply material in container sizes specified.
3. Material: Root ball shall consist of a soil or soil mix that is compatible with the soil or soil mix into which the plant will be planted, and that provides for thorough drainage, aeration, and adequate moisture and nutrient retention. Having sufficient density and firmness that when planted, the plant will stand upright and stable without need for additional support.
4. Containers: All plant material shall have been grown in the containers in which delivered for at least six months, but not over two years. Stock appearing to not have been in their containers for this term shall be rejected.
5. Root Pruning: Where root pruning is required to provide material of the specified size, or for planting in the sloped containers, the pruning is to be done under the direction of a Certified Arborist. No root pruning is to be done within one year of installation unless approved by the City.

G. Trunks and Branches: Do not prune plants before delivery. All trunks are to be straight and of uniform taper, larger at the bottom unless otherwise specified. Plants with damaged or crooked leaders, or multiple leaders, unless specified, will be rejected. Plants with abrasions of the bark, sun scalds, disfiguring knots, or fresh cuts of limbs over 3/4 inch, which have not completely callused, will be rejected. Any plant unable to stand upright without support will be rejected.

2.02 SOIL MATERIALS

A. General: All soils to be used in areas to be planted on the project shall be free of rocks over one inch in diameter, and free of foreign debris. Soil shall be free from sub-base/aggregate, refuse, plants or roots, clods, weeds, viable weed seeds, sticks, solvents, petroleum products, concrete, base rock, or other deleterious or extraneous material. Soil shall be free of soil-borne diseases, and capable of sustaining healthy plant life.

B. Imported Topsoil:

1. Topsoil shall be fertile, friable soil of loamy character, containing an amount of organic matter normal to the region. All imported topsoil used on the job shall be from the same source.
   a. Make all arrangements for obtaining and testing imported topsoil. Submit test reports of a representative sample of the proposed supply for approval by the City well in advance of its scheduled delivery to the site. The approved sample will establish the standards to which all imported topsoil used on the job must conform.
   b. Transport imported topsoil directly from source to final position. If stockpiling is required, locations and amounts of stockpiles will be designated by the City.
   c. The City reserves the right to take additional samples of imported topsoil at the site. If subsequent testing proves material to be at variance with the approved sample, remove rejected soil from the site and replace immediately at no additional cost to the City.

C. Imported Planter Pot Soil Mix: For use in planters and planter pots. The following ingredients, thoroughly blended into a homogeneous mix:

Amount	Ingredient
0.5 cubic yards	1/8 inch Fine Fir Bark as Specified
0.5 cubic yards	Fine Sand as Specified
3 pounds	Single Superphosphate 0-20-0
1 pound	Calcium Nitrate 15.5-0-0
1 pound	Iron Sulfate
8 pounds	Kaiser 65 Dolomite Lime

A. Existing On-Site Soils: Existing site soils shall be amended per the recommendations of the approved soils testing laboratory. The following soil amendments and fertilizers are to be used FOR BIDDING PURPOSES ONLY. Contractor shall submit soil samples results for review by Landscape Architect.

1. Site Soil: Top 6 inches of site soil shall be amended with following blend of amendments per 1000 square feet.

Amount	Ingredient
6 cubic yards	Nitrogen Stabilized 0" - 1/4" Fir Bark
15 lbs	12-12-12 Commercial Fertilizer as approved
15 lbs	Soil Sulfur
100 lbs	Agricultural Gypsum

2. Backfill Mix (on-grade locations): Amend site soil as follows per cubic yard.

Amount	Ingredient
3/5 cubic yard	Surface Soil
2/5 cubic yard	Nitrogen Stabilized 0" to 1/4" Fir Bark
1lb	12-12-12 Commercial Fertilizer as Specified
2	lbsIron Sulfate as Specified
10 lbs	Agricultural Gypsum

3. Additional Amendments: Soil amendment recommendations will vary for planting areas if imported topsoil is required to establish finish grade. Provide all additional amendments as may be required by subsequent soil testing of approved imported topsoil and as directed by the Inspector.

2.03 SOIL AMENDMENT MATERIALS

A. Nitrogen Stabilized Fir Bark On-Grade: Meeting the following specifications:

1. Particle Size (dry weight basis):

Sieve Size	Percent Passing
6.35 mm (1/4 inch)	95 - 100
2.38 mm (No. 8, 8 mesh)	50 - 80
500 micron (No. 35, 32 mesh)	0 - 25

2. Organic Content: Determined by ash analysis. Minimum 92% based on dry weight.
3. Nitrogen: Minimum 0.8% nitrogen based on dry weight.
4. Salinity: Maximum saturation extract conductivity 3.5 millimhos per cm at 25 degrees centigrade.
5. Iron: Minimum 0.08% dilute acid soluble Fe based dry weight, if iron treated.
6. Bulk Density: 400 pounds per cubic yard.

B. Fertilizer: Containing fifty percent of the elements derived from organic sources; of proportion necessary to eliminate any deficiencies of topsoil, as indicated in analysis.

1. Fertilizers shall be approved by the Organic Materials Review Institute (OMRI).
2. Contractor shall obtain City's written approval of proposed fertilizer(s) prior to use.

C. Water: Clean, fresh, and free of substances or matter that could inhibit vigorous growth of plants.

D. Pre-Emergent Herbicide: For all on-grade ground cover and shrub areas, provide "Surflan A.S." as manufactured by Elanco Products Co., Indianapolis, IN, with no acceptable substitutions. Apply per manufacturer's instructions.

2.04 MULCH MATERIALS

A. Mulching Material: Fir species wood shavings, free of growth or germination inhibiting ingredients. Mulch shall have been baked to remove unwanted seed growth.

2.05 ACCESSORIES

A. Drain Rock: 3/4" diameter river rock or approved equal.

B. Soil Separator: Soil Separator: "Mirafi 140N", as manufactured by Mirafi, Charlotte, NC, "Trevira Spunbond 1120", as manufactured by Hoechst Fibers Industries, Spartanburg, SC, or approved equal.

C. Stakes: Softwood lumber, pointed end.

1. Lodgepole stakes. Length as required to meet dimensions required per plans.

D. Root Control Barrier: "Deep Root Control Barrier", stock number UB24-2 as manufactured by Deep Root Corp., 15040 Golden West Circle, Westminister, CA 92683 (714) 898-0563, or approved equal.

E. Breather Tube: 3" perforated pipe with Menards SS8x20 or equal filter sock (length as required). Cap with plastic atrium drain grate - Rain Bird DG4RAG or equal. #57 washed gravel.

2.06 SOURCE QUALITY CONTROL

A. Analyze to ascertain percentage of nitrogen, phosphorus, potash, soluble salt and organic matter; pH value and any deficiencies.

B. Submit minimum 10 oz sample of topsoil proposed. Forward sample to testing laboratory in sealed containers to prevent contamination.

C. Testing is not required if recent tests are available for imported topsoil. Submit these test results to the testing laboratory for approval. Indicate, by test results, information necessary to determine suitability.

PART 3 EXECUTION

3.01 ORDERING, REVIEW AND ACCEPTANCE OF PLANT MATERIAL

A. Ordering:

1. Within 30 days after award of contract, submit written certification to the City of the quantity and species of plant material ordered, and the nursery(s) supplying the material.
2. The Contractor is responsible for providing all plant material in the quantities and sizes specified on the drawings, and for making all arrangements in advance that may be
required to obtain these materials. If any material specified will be unavailable at the time of planting, submit written verification to the City along with the bid.

B. Review of Plant Material: Before planting operations begin, all plant materials shall be reviewed for conformance to the design intent of the Contract Documents by the City. Submit written request for review of plant material at least 10 days prior to commencement of planting operations. Review by the City does not waive the right of rejection during planting or any time thereafter.

C. Rejection of Material: The City reserves the right to review and reject plant material at any time, and at the place of growth, for nonconformance to the Specifications. Do not install plant material, which has not been reviewed at the project site by the City.

3.02 EXAMINATION

A. Verify that prepared subsoil and planters are ready to receive work.

B. Saturate soil with water to test drainage.

C. Verify that required underground utilities are available, in proper location, and ready for use.

3.03 GRADING

A. General: All areas to be planted on the project shall be free of rocks over one inch in diameter to a depth of 8" minimum below finish grade, and free of foreign debris, subsoil, refuse, plants or roots, clods, weeds, sticks, solvents, petroleum products, concrete, base rock, or other deleterious or extraneous material. Areas to be planted shall be free of soil-borne diseases and capable of sustaining healthy plant life. Do all work necessary to bring site soil, import soil and planter backfill to compliance with these requirements. Remove from the project site and dispose of in a legal manner any soils and material not meeting these requirements. Subject to acceptance of the City, all soil and material not meeting these requirements shall be the property of the Contractor.

1. Surface Drainage: Contractor is responsible for proper surface drainage of planted areas. Report in writing to the City any discrepancies in the Contract Documents, obstructions on the site, or any other conditions, which the Contractor feels prevent establishing proper drainage, and obtain the Inspector's instructions prior to proceeding with the work affected.
2. Final Contouring:
   a. Handle and place the soil to depths required. Remove all rocks and clods over one inch in diameter. Provide for surface drainage and cut all necessary drain swales.
   b. Work soil sufficiently so that after rolling and after full settlement has occurred, the site will be graded to within ±0.10 of a foot from the lines, grades and elevations shown, and as may be directed by the Inspector. Finished surface shall be smooth and uniform and shall be free of depressions that retain standing water or any surface irregularities that would impede proper drainage. Unless otherwise noted, all soil finish grades shall be 1-1/2 inches below finish grade of adjacent walks, pavements and curbs, and top of wall elevations.
3. Erosion Repair: Repair all erosion damage that occurs until Final Acceptance. Take all measures necessary to prevent erosion occurring during work under this Section. Provide and amend replacement soil in accordance with this Section.

3.04 PREPARATION OF SUBSOIL

A. Amend subsoil as indicated in analysis.

B. Prepare subsoil to eliminate uneven areas. Maintain profiles and contours. Make changes in grade gradual. Blend slopes into level areas.

C. Remove foreign materials, weeds and undesirable plants and their roots. Remove contaminated subsoil.

D. Scarify subsoil to a depth of 3 inches where plants are to be placed. Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has compacted subsoil.

E. Dig plant pits and beds twice the size of the rootball as directed per the drawings.

3.05 PLACING TOPSOIL

A. Spread topsoil to a minimum depth of 6 inches over area to be planted. Rake smooth.

B. Place topsoil during dry weather and on dry unfrozen subgrade.

C. Remove vegetable matter and foreign non-organic material from topsoil while spreading.

D. Grade topsoil to eliminate rough, low or soft areas, and to ensure positive drainage.

E. Install topsoil into pits and beds intended for plant root balls, to a minimum thickness of 6 inches.

F. Place topsoil mix to the depths specified to obtain finish grades shown on the drawings. Soil mix shall be handled in a manner so as to prevent segregation of ingredients. Thoroughly water planter backfill mix after placement to compact and settle mix.

3.06 FERTILIZING

A. Apply fertilizer in accordance with manufacturer's instructions.

B. Apply after initial raking of topsoil.

C. Mix thoroughly into upper 2 inches of topsoil.

D. Lightly water to aid the dissipation of fertilizer.

3.07 EXCAVATION OF PLANTING PITS ON-GRADE

A. General: Excavate plant pits by hand or with a backhoe; use of augers will not be permitted. Prior to planting and backfill, scarify the sides and bottom of the pit as required to eliminate any glazed surfaces. Excavate container-grown tree, shrub, and vine holes to the following dimensions:

1. 1, 5, and 15 gallon containers: Two times the size of the root ball in width and depth.
2. 24-inch boxes and larger: Large enough to allow one foot of space around the ball in all directions.
3. Holes on mounds: Dig plant holes on mounds deeper than normal.
4. Excess Soil: Transport and dispose of off-site in a legal manner any excess excavated soil.
5. Obstructions: If rocks, underground construction work, tree roots or other unknown obstructions are encountered in the excavation of plant holes, alternate locations may be selected by City. Report all such conditions in writing to the City. If a change in the location of the planting pit is unacceptable to the City, the original planting pit shall be over-excavated to remove the obstructions to a minimum dimension of 12" beyond the sides and bottom of the tree pit as typically specified. Obtain the City's instructions prior to proceeding with the work affected.

3.08 DETRIMENTAL SOILS AND DRAINAGE

A. General: Prior to planting, test drain all planting areas as follows:

1. On-Grade Plant Pits: Fill with 12 inches of water. Water should drain completely in 48 hours.
2. Plant Beds: Irrigate until soil is saturated. Saturated condition should not remain after 24 hours.

B. Drainage Chimneys:

1. General: For plant pits failing the initial drainage test, provide drainage chimneys as shown on the drawings and as directed by the City.
2. Neatly auger drainage chimneys to a depth directed by the City. Remove loose soil from hole and plant pit. Locate chimneys at perimeter of plant pit. Repeat test for proper drainage.
3. Once required drainage test has been passed, backfill chimneys with drain rock, flush with bottom of pit. Cover chimneys with soil separator.

C. Failure of Drainage Test: report in writing to the City all areas not passing these tests and all soil conditions that the Contractor considers detrimental to growth of plant material. State condition and proposal and cost estimate for correcting the condition. Obtain the City's instructions prior to proceeding with the work affected. Repeat drainage testing and correction of conditions in this manner as necessary until tests are passed. Failure to perform drainage tests and/or to notify the City in writing of the conditions specified above renders the Contractor responsible for all plant failure that occurs as a result of inadequate drainage or detrimental soil conditions, as determined by the City.

3.09 PLANTING

A. General: Do not plant any material that has not been reviewed by the Inspector upon delivery to the project site or that has been rejected for any reason. Do not plant under unfavorable weather conditions.

B. Place plants for best appearance.

C. Set plants vertical.

D. Remove non-biodegradable root containers. After removing plants from their containers, disentangle any small roots that encircle the container. Do not cut or otherwise disturb the root ball. Inspect all plants for rootbound condition; do not install rootbound plants or plants found to have cracked or broken root balls when taken from the container.

E. Care should be exercised to prevent damage or breakage to limbs, and ropes or other lines should not be allowed to damage bark.

1. Container Stock:
   a. General: Do not lift or handle container plants by tops, stems, or trunks at any time.
   b. Boxed Stock: Remove bottom of box prior to placement of plant in planting pit. Cut bands and remove box sides just prior to backfilling.
   c. Canned Stock: Remove canned stock carefully after cans have been cut on two sides with acceptable cutter. Do not use spade to cut cans.
   d. Ball and Burlap Stock: Dig ball and burlap (B & B) plants with firm balls of earth of diameter not less than that recommended by the American Standard for Nursery Stock, and of sufficient depth to include the fibrous and feeder roots. Plants moved with ball will not be accepted if the ball is cracked or broken before or during planting operations.

F. Set plants in pits or beds, partly filled with prepared plant mix, at a minimum depth of 6 inches under each plant. Remove burlap, ropes, and wires, from the root ball.

G. Place bare root plant materials so roots lie in a natural position. Backfill soil mixture in 6 inch layers. Maintain plant life in vertical position.

H. Saturate soil with water when the pit or bed is half full of topsoil and again when full.

I. Top-dress Fertilizing On-Grade: When plant installation is complete, fertilize all planting areas (excluding lawn areas) with top-dress fertilizer at the rate of 4 lbs. per 100 square feet.

J. Anti-Desiccant: At Contractor's option, spray all evergreen and deciduous plant material in full leaf with anti-desiccant, in accordance with manufacturer's instructions. Apply an adequate film over trunks, branches, twigs and foliage. Take precautions as necessary to prevent damage, particularly from sun scald.

K. Mulching: Mulch all planting areas (excluding lawn areas) with 3 inch layer of wood bark mulch unless otherwise shown. Spread mulch uniformly to form a smooth cover free of bare spots and mounds.

1. Settlement: As shown on the drawings, the crowns of all plants shall be at least 1/2 inch above the surrounding grade after all settlement has occurred.
2. Watering Basins On-Grade: Form a watering basin, an excavated ring around the root ball of the plant for each tree and shrub. Do not form watering basins in lawn areas.

3.10 GROUND COVER PLANTING

A. Pre-emergent herbicide Application On-Grade Only: Apply pre-emergent herbicide, Surflan
A.S. at the rate of 5-1/3 pounds per acre applied in 25 gallons of water to all on-grade locations. Apply before wood bark mulch application.

B. Planting: Plant ground cover plants through wood bark mulch at the specified triangular spacings. Make planting hole with a hand mattock avoiding mixing surface applied herbicide into planting hole.

1. Activation of Herbicide On-Grade Only: After planting, irrigate with at least one inch of water to activate the herbicide. Water areas carefully taking care to avoid erosion. Repair erosion occurring from careless watering immediately. Remove, repair and replace adjacent planting and soil damaged by careless watering and translocation of herbicide.

3.11 LAYOUT OF PLANT MATERIAL

A. General: The City will review for conformance to the design intent of the Contract Documents locations of all plants in the field prior to planting. Notify the City and schedule layout review sufficiently in advance of planting to allow for review and adjustment without disrupting construction schedule.

B. Adjustments: The City reserves the right to make minor adjustments in the layout of all plant material; adjust irrigation system as necessary.

3.12 INSTALLATION OF ACCESSORIES

A. Install trunk protectors on all new trees located in turf areas.

3.13 PLANT SUPPORT

A. General: Complete staking and guying immediately after planting. Perform in accordance with reference standards, unless otherwise shown on the drawings or directed by the City. Securely stake or guy all trees planted on the site using staking or guying type shown on the drawings. The City reserves the right to make modifications to staking and guying procedures as required to accommodate field conditions at no additional cost to the City.

1. Staking: Stake trees with one as shown on the drawings.

3.14 PRUNING

A. Prune plants only at the direction of the City and according to reference standards to preserve the natural character of the plant. Remove all dead wood, suckers and broken or badly bruised branches. Remove sucker basal and lateral growth to prevent resprouting; retain normal side branching. Use only disinfected, sharp tools. Improperly pruned trees will be subject to rejection by the City. Apply tree seal to cuts over one inch diameter in accordance with manufacturer's instructions.

REGISTERED LANDSCAPE ARCHITECT
JEFFREY C. FERBER NO. 2844
Signature
03/31/00
Renewal Date
Date
STATE OF CALIFORNIA

CITY OF SANTA ANA
CALIFORNIA

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

APPROVED: _____ DATE: _____
CITY ENGINEER
ORIGINAL SIGNED DATE

DESIGN
DRAWN
CHECKED

NO.	REVISIONS	DATE	APPROVED

PUBLIC IMPROVEMENT PLANS
ORTEGA PARK
LANDSCAPE NOTES

03/06/2020
DATE

2019-00678
PBW. NO.

- | L5.0
BID NO. | SHT. DES.

C-1-4879
DWG. NO.

SHT. 26 OF 27

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LANDSCAPE SPECIFICATION NOTES

Section 32 8423 - Irrigation System

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Pipe and fittings, and accessories.
B. Automatic valves
C. Manual valves
D. Control system.
E. Drip Irrigation
F. Pop-up rotor systems

1.02 DESCRIPTION

A. Provide all material, labor, equipment transportation, and services necessary for the furnishing and installation of the complete automatic sprinkler irrigation system as shown on the drawings and as specified herein. The work includes, but is not limited to:
   1. Trenching, stockpiling excavation materials and refilling trenches.
   2. Providing a complete system including piping, valves, fittings, backflow prevention device(s), sprinklers, automatic controls, dripline, and emitters and final adjustment of heads to ensure complete coverage.
   3. Line voltage connections to all irrigation controllers; low voltage control wiring from controller to remote control valves.
   4. Electrical service and hookup to automatic controller
   5. Automatic controller assembly and installation.
   6. Thrust Blocking
   7. Submittals, tests, as-built and record drawings.
   8. Erosion control and repair of damage due to over watering and erosion.
   9. Warranty replacement.
   10. Cleanup, inspection and approval.

1.03 RELATED REQUIREMENTS

A. Section 26 0519 - Low-Voltage Electrical Power Conductors and Cables.
B. Section 31 2316 - Excavation: Excavating for irrigation piping.
C. Section 31 2316.13 - Trenching: Excavating and backfilling for irrigation piping.
D. Section 31 2323 - Fill: Backfilling for irrigation piping.
E. Section [] - Exterior Plants.

1.04 REFERENCE STANDARDS

A. ASTM D2241 - Standard Specification for Poly (Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series); 2015.
B. ASTM D2564 - Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems; 2012.
C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2014.

1.05 SUBMITTALS

A. See Section 01 3300 - Submittals, for submittal procedures.
B. Detail Drawings: Submit detailed drawings for Owner approval, for all assemblies not detailed on the drawings.
C. Controller Charts:
   1. The Landscape Architect shall accept Record drawings before controller charts are prepared. Provide one controller chart for each controller supplied. The chart shall show the area controlled by the automatic controller and shall be the maximum size that the controller door will allow.
   2. The chart is to be a reduced drawing of the actual "as-built" system. However, in the event the controller sequence is not legible when the drawing is reduced, it shall be enlarged to a size that will be readable when reduced. The chart shall be a black line or blue line ozalid print and a different color shall be used to indicate the area of coverage for each station. When completed and approved, the chart shall be hermetically sealed between two pieces of plastic, each piece being a minimum of 10 mils. These charts shall be completed by the Contractor and approved by the Landscape Architect prior to final observation of the irrigation system.
D. Operation and Maintenance Data:
   1. Provide instructions for operation and maintenance of system and controls, seasonal activation and shutdown, and manufacturer's parts catalog.
   2. Provide schedule indicating length of time each valve is required to be open to provide a determined amount of water.
E. Maintenance Materials: Provide the following for City's use in maintenance of project.
   1. See Section 01 6000 - Product Requirements, for additional provisions.
   2. Extra Sprinkler/Rotor Heads: One of each type and size.
   3. Extra Valve Keys for Manual Valves: One.
   4. Extra Valve Box Keys: One.
   5. Extra Quick Coupler Keys: One.
   6. Prepare and deliver to the Landscape Architect, within 10 calendar days prior to completion of construction, two hardcover binders with three rings containing the following information:
      a. Index sheet stating Contractor's address and telephone number, list of equipment with name and addresses of local manufacturer's representative.
      b. Catalog and part sheets on every material and equipment installed under this contract.
      c. Contractor's Guarantee statement that all equipment has been installed per plans and specifications.
      d. Complete operating and maintenance instruction on all major equipment.
F. Irrigation Schedule:
   1. Watering schedule shall include watering times and start times for each valve. Schedule shall indicate watering times for each day of the week as applicable. The schedule shall be broken out to include seasonal adjustments.
   2. Submit the Watering Schedule to the Landscape Architect for approval. The amount of water used per the irrigation schedule shall not exceed the projected water usage shown on the irrigation calculations and plans.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Handling of PVC Pipe and Fittings: The Contractor is cautioned to exercise care in handling, loading, unloading, storing and installation of PVC pipe and fittings. All PVC pipe shall be transported in a vehicle that allows the length of pipe to lie flat so as not to subject it to undue bending or concentrated external load at any point. Any section of pipe that has been dented or damaged will be discarded and, if installed, shall be replaced with new piping.

1.07 JOB CONDITIONS

A. The Contractor shall not willfully install the irrigation system as shown on the drawings when it is obvious in the field that obstructions, grade differences or discrepancies in area dimensions exist that might not have been considered in engineering. Such obstructions or differences should be brought to the attention of the Landscape Architect. In the event this notification is not performed, the irrigation Contractor shall assume full responsibility for any revision necessary.

1.08 SUBSTITUTIONS

A. Procedure: Submit information in conformance with the substitution requirements of Division 01, General Provisions.
B. Provide descriptive catalog literature, performance charts and flow charts for each item to be substituted.

1.09 REGULATORY REQUIREMENTS

A. Requirements of Regulatory Agencies: All work and materials shall be in full conformance with the latest rules and regulations of the California Plumbing and Electric codes.
B. Manufacturer's Directions: Manufacturer's directions and detailed drawings shall be followed in all cases where the manufacturers of articles used in this contract furnish directions covering points not shown in the drawings and specifications.
C. Underwriters Laboratories: Electrical wiring, controls, motors, and devices shall be UL listed, and so labeled.

1.10 INSTALLATION MEETINGS

A. Contractor shall be responsible for notifying the Landscape Architect or Designated Representative in advance for the following observation meetings, according to the time indicated: (Certain meetings may be grouped if prior approval is granted).
   1. Coordinate one week prior to commencing work of this Section.
   2. Pressure supply line installation and testing: 48 hours.
   3. Automatic controller location: 48 hours.
   4. Coverage test: 48 hours.
   5. Final site review: 7 days.
B. When observations have been conducted by other than the Landscape Architect or Designated Representative, show evidence in writing of when and by whom these observations were made.
   1. Final Observation:
      a. The Contractor shall operate each system in its entirety for the Landscape Architect or Designated Representative at time of final observation. Any items deemed not acceptable by the Landscape Architect or Designated Representative, or not in compliance with these specifications and drawings, shall be reworked to the complete satisfaction of the Landscape Architect or Designated Representative.
      b. The Contractor shall show evidence to the Landscape Architect or Designated Representative that the City has received all accessories, charts, record drawings, and equipment as required before final observation can occur.

1.11 COORDINATION

A. Coordinate the work with site backfilling, landscape grading and delivery of plant life.

1.12 WARRANTY

A. The warranty for the sprinkler irrigation system shall be made in accordance with the following form.
B. A copy of the warranty form shall be included in the operations and maintenance manual.
C. The warranty form shall be retyped onto the Contractor's letterhead and contain the following information
D. WARRANTY FOR SPRINKLER IRRIGATION SYSTEM
   1. We hereby warrant that the sprinkler irrigation system we have furnished and installed is free from defects in materials and work quality, and the work has been completed in accordance with the drawings and specification. We agree to repair or replace any defects in material or work quality that may develop during the period of one year from the date of acceptance, except those that may be caused by ordinary wear and tear, unusual abuse or neglect. We also agree to repair or replace any damage resulting from the repairing or replacing of such defects at no additional cost to the City. We shall make such repairs or replacements within a reasonable time, as determined by the City, after receipt of written notice. In the event of our failure to make such repairs or replacements within a reasonable time after receipt of written notice from City, we authorize the City to proceed to have said repairs or replacements made at our expense, and we will pay the costs and charges therefore upon demand.
   2. PROJECT:_____
   3. CONTRACTOR:_____PHONE NO.:_____
   4. ADDRESS:_____BY:_____
   5. _____
   6. DATE OF ACCEPTANCE:_____BY:_____

PART 2 PRODUCTS

2.01 IRRIGATION SYSTEM

A. Manufacturers:
   1. As shown on plans.
   2. Rain Bird Sales, Inc; ____: www.rainbird.com/#sle.
B. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PIPE MATERIALS

A. PVC Pipe (Sizes up through 3"): ASTM D 2241; 200 psi pressure rated upstream from controls, 160 psi downstream; solvent welded sockets.
B. PVC Pipe (3" - 6" sizes): ASTM D 2241; 200 psi (1.38 MPa) pressure rated upstream from controls, 160 psi (1.10 MPa) downstream; rubber gasketed joints.
C. Pressure and Non-Pressure Main Line Piping and Fittings: Sizes 2 1/2 inches and smaller shall be Schedule 80 PVC.
D. Non-pressure lines (buried): Shall be PVC Schedule 40.
E. Fittings: Type and style of connection to match pipe and shall meet the requirements for service at an operating pressure of 150 pounds per square inch, unless otherwise specified.
F. Pipe Risers at Valves: 160 psi PVC pipe.
G. Solvent Cement: ASTM D2564 for PVC pipe and fittings.
H. Sleeve Material: PVC Material per plan.
I. PVC nipples: Schedule 80 with molded threads.
J. All PVC pipe must bear the following markings:
   1. Manufacturer's name.
   2. Nominal pipe size.
   3. Schedule or class.
   4. Pressure rating in AST (not required on drip tubing).
   5. NSF (National Sanitation Foundation) approval (not required on drip tubing).
   6. Date of extrusion.
   7. Colored Purple (Pantone #522) and embossed or integrally stamped/marked continuously on two sides with the words "CAUTION: RECYCLED WATER - DO NOT DRINK" and identified in accordance with AWWA Guidelines for the Distribution of Non-Potable Water.

2.03 OUTLETS

A. Manufacturer:
   1. As indicated on the drawings.
   2. Substitutions: See Division 01, General Provisions
B. Emitter: Non-clogging, self-cleaning per the model numbers shown on the drawings.
C. Tree Bubbler: Fixed outlet capable of watering deep root systems directly.
D. Quick Coupler: Two piece body with purple cover .
E. All outlets used shall have an exposed surface colored purple to associate them with recycled water use. The exposed surface may be colored purple through the use of weatherproof paint, or dyed plastic/rubber.
F. Where possible, the exposed surface shall have the following warnings molded or hot-stamped upon it: (1)"DO NOT DRINK" in English and Spanish, and (2) the international "DO NOT DRINK" warning symbol. Sprinklers unable to meet these specifications shall be identified with purple bilingual recycled water warning tags.

2.04 VALVES

A. Manufacturers:
   1. As indicated on the drawings
   2. Substitutions: See Division 01, General Provisions
B. Ball Valves: Brass construction with locking lever..
C. Backflow Preventers: Bronze body construction, reduced pressure zone type.
D. Backflow Enclosure: Vvandal and weather resistant nature manufactured entirely of marine grade aluminum alloy 5052-H32. The mounting base shall be manufactured entirely of stainless steel. The length of the enclosure shall be expandable to allow for site adjustment. The enclosure shall have a mounting lip on one end and a locking mechanism on the other end. The handle controlling the locking mechanism shall be concealed within the surface of the enclosure and provide for a padlock.
E. Quick Coupling Valves: Two-piece brass body construction, 150-pound class, with 1-inch female threads opening at base permitting operation with a special connecting device (coupler) designed for this purpose.
   1. Coupler threads: Lug type.
   2. Hinge cover: Provide with rubber-like locking and non-potable (purple) vinyl cover.
   3. The words "NON-POTABLE" or "RECYCLED WATER" and "DO NOT DRINK" marked in English and Spanish with the International "DO NOT DRINK" warning symbol located on the cover.
F. Master Valves
   1. Valve Type: Spring loaded, packless diaphragm activated, normally closed type with brass body, equipped with flow control and pressure regulation capabilities where noted.
   2. Valve Solenoid: 24 volt AC, 4.5 watt maximum, 500 milli-amp maximum surge, corrosion-proof, stainless steel construction, epoxy encapsulated to form a single integral unit unless otherwise noted on plans.
   3. Provide bleeder valve to permit operation in the field without power at the controller.
G. Remote Control Valves
   1. Valve Type: Spring loaded, packless diaphragm activated, normally closed type with brass body, equipped with flow control and pressure regulation capabilities where noted.
   2. Valve Solenoid: 24 volt AC, 4.5 watt maximum, 500 milli-amp maximum surge, corrosion-proof, stainless steel construction, epoxy encapsulated to form a single integral unit unless otherwise noted on plans.
   3. Provide bleeder valve to permit operation in the field without power at the controller.
H. Valve Boxes
   1. Remote control Valves: 14" x 19" of concrete material with locking cover.
   2. Gate valves, ball valves and quick couplers: 10" round of concrete material with locking cover.
   3. Valve box extensions shall be by the same manufacturer as the valve box.
   4. Emboss, letters on valve boxes to indicate contents of valve box. (ie. GV = Gate Valve, QC = Quick Coupler, RC = Remote Control Valve, MV = Master Valve, BV = Ball Valve)
   5. Valve boxes shall be of purple color (Pantone #522) with warning labels permanently molded into or affixed onto the lid. Warning labels shall be constructed of a purple weatherproof material with the warning permanently stamped or molded into the label. The warning shall contain the following information:
      a. "NON-POTABLE" or "RECYCLED WATER"
      b. "DO NOT DRINK" in English and Spanish
      c. The international "DO NOT DRINK" warning symbol such as a glass of water with a slash through it.
I. Station Decoders
   1. Shall match manufacturer of controller.
   2. Provide minimum one (1) decoder per valve. The station decoder shall be a 2-station decoder and shall be able to operate up to 2-solenoids using unique colored wires for each. Utilizing decorder to support multiple valves is acceptable in accordance with manufacturer's instructions.
   3. Include POC decorders for master valve and flow sensor per manufacturer's instructions.
   4. Provide grounding rods or plates per manufacturer's instructions.

2.05 CONTROLS

A. Manufacturers:
   1. Calsense or approved equal. City maintenance approval required for substitutions.
   2. Substitutions: See Division 01, General Provisions.
B. Flow Sensor
   1. Shall match manufacturer of controller.
   2. The flow sensor shall be wired back to the irrigation controller using two #14 AWG wires, one red, and one black in 1" PVC conduit to connect to the irrigation controller. The maximum wire run between flow meter and controller shall be 2000 ft. The flow meter shall send low voltage digital pulses back to the controller and therefore all electrical connections must be waterproof and be resistant to any moisture entry.
   3. Housing to be a Sch 80 polyvinyl chloride tee or bronze tee.

2.06 ELECTRICAL (LOW VOLTAGE)

A. Connections between controller and remote control valves shall be made with direct burial AWG-UH, 600-volt wire, insulation thickness 3/64 inch, utilizing low-density high molecular weight polyethylene insulation.
B. Splices, where permitted, shall be waterproofed using Rain Bird, Pen-Tite Connectors or fusible heat shrinking tubing, and housed in a box. Boxes for other irrigation use may be utilized for this purpose.
C. Wire sizing shall be minimum of #14 "UF" 600 volt underground wiring, unless a shielded cable is used in which case #16 wire may be used. Common wires to be #12 and white in color. Each "hot" valve wire shall have a distinct and unique color other than white with no repetition of colors.
D. All electrical connections must be waterproof and moisture-resistant and shall be done with 3M™ Scotchcast™ 3570G Connector Sealing Packs.

2.07 ACCESSORIES

A. Do Not Drink Signage
   1. Aluminum 8"x8" sign shall read "RECYCLED WATER IN USE DO NOT DRINK. WASH HANDS AFTER CONTACTING. NO TOME EL AGUA LAVESE LAS MANOS DESPUÉS DE HACER CONTACTO CON EL AGUA"
   2. Quantity five (5) signs.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify location of existing utilities.
B. Verify that required utilities are available, in proper location, and ready for use.

3.02 PREPARATION

A. Drawings are generally diagrammatic and indicative of the work to be installed. Due to the scale of drawings, it is not possible to indicate all offsets, fittings, sleeves, etc., which may be required. The Contractor shall carefully investigate the structural and finished conditions affecting all of his work and plan accordingly, furnishing such fittings, etc., as may be required.
B. All scaled dimensions are approximate. The Contractor shall check and verify all size dimensions and receive Landscape Architect or Designated Representative's approval prior to proceeding with work under this section.
C. Coordinate installation of irrigation system, including pipe, so there will be NO interference with utilities or other construction or difficulty in planting trees, shrubs, and ground covers. The Contractor shall carefully check all grades to satisfy him/her that he may safely proceed before starting work on the irrigation system.
D. All piping or equipment shown diagrammatically on drawings outside planting areas shall be installed inside planting areas whenever possible.
E. Layout and stake locations of system components.
F. Review layout requirements with other affected work. Coordinate locations of sleeves under paving to accommodate system.

3.03 TRENCHING

A. Trench and backfill in accordance with Greenbook and City of Santa Barbara standards.
B. Excavate trenches to required depths. Follow approved layout for each system.
C. Trench bottom shall be flat to ensure piping is supported continuously on an even grade.
D. Where lines occur under paved areas, consider dimension to be below the subgrade.
E. Trench Size:
   1. As indicated on the drawings.
F. Trench to accommodate grade changes and slope to drains.
G. Maintain trenches free of debris, material, or obstructions that may damage pipe.

3.04 INSTALLATION

A. Assemblies:
   1. Install pipe, valves, controls, and outlets in accordance with manufacturer's instructions.
   2. Line Clearance: All lines shall have a minimum clearance of 6 inches from each other and from lines of other trades. Parallel lines shall not be installed directly over one another.
   3. Connect to utilities.
   4. Install all assemblies specified herein in accordance with respective detail. In absence of detail drawings or specification pertaining to specific items required to complete work, perform such work in accordance with best standard practice, with prior approval from Landscape Architect or Designated Representative.
   5. PVC pipe and fittings shall be thoroughly cleaned of dirt, dust and moisture before installation. Installation and solvent welding methods shall be as recommended by the pipe and fitting manufacturer.
   6. On PVC to metal connections, the Contractor shall work the metal connections first. Teflon tape or approved equal shall be used on all threaded PVC to PVC, and on all threaded PVC to metal joints. Light wrench pressure is all that is required. Where threaded PVC connections are required, use threaded PVC adapters into which the pipe may be welded.
   7. Quick Coupling Valves: Unless otherwise indicated, locate valves within 12 inches of hardscape.
   8. Set outlets and box covers 1 inch above finish grade in turf areas and 2 inches above finish grade in shrub planters.
   9. Provide for thermal movement of components in system.
   10. Use threaded nipples for risers to each outlet.
B. Mechanical Joints:
   1. Use for pipe sizes 4" and larger.
C. Thrust Blocks:
   1. For 4" pipe and larger install thrust blocks at fittings.
D. Electrical Supply:
   1. Low voltage wiring shall be placed in the same ditch and taped on bottom side of main lines unless otherwise approved.
   2. Wire is to be taped a maximum 12 feet on center.
   3. Provide a minimum 12-inch expansion loop at each connection and directional change.
   4. Use a continuous wire between controller and remote control valves. Except as otherwise approved, do not splice wire at any point. All approved splices shall be enclosed in an acceptable box.
   5. Each controller shall be provided with separate 2-wire path.
E. Automatic Controller:
   1. Contractor shall coordinate controller location and connection with City.
F. Flow Sensor:
   1. Flow sensor tee assembly shall be installed with minimum required length of unobstructed straight pipe run per manufacturer's instructions.
   2. Install flow sensor wiring from flow sensor to controller. Connect wiring to flow sensor terminal at controller.
G. Mark valves with neoprene valve markers containing locking device. Set valve markers in pipe risers extending from top of valve to finish grade.
H. System Flush: After piping is installed, but before outlets are installed and backfilling commences, open valves and flush system with full head of water.
I. Sprinkler Heads:
   1. Install the sprinkler heads as designated on the drawings and in accordance with their respective detail.
   2. Spacing of heads shall not exceed the maximum indicated on the drawings. In no case shall the spacing exceed the maximum recommended by the manufacturer.
J. Valve Boxes:
   1. All buried valves and equipment shall be installed with a proper box as specified in part 2 - products.
   2. Fill area under box with a minimum of 1 cubic feet of pea gravel before box is installed.
      a. Identification tags shall be attached to each remote control valve, showing number that corresponds with controller sequence. Tags shall be manufactured of polyurethane Behr Desopaid, yellow in color with black letters 2-3/4 inches by 2-1/4 inches.
      b. All boxes shall be permanently marked on top, designating type of equipment installed as noted in drawing.

3.05 FIELD QUALITY CONTROL

A. Prior to backfilling, test system for leakage at main piping to maintain 100 psi pressure for two hours.
B. System is acceptable if no leakage or loss of pressure occurs and system self drains during test period.
C. Testing of pressure main lines shall occur prior to installation of electrical control valves, quick couplers or any other equipment that might prevent a proper test from being performed.
D. All piping under paved areas shall be tested under hydrostatic pressure of 150 pounds per square inch, and proved watertight, prior to paving.
E. If leaks develop, replace joints and repeat test until entire system is proven watertight.
F. All hydrostatic tests shall be made only in the presence of the Landscape Architect or Designated Representative of the City. No pipe shall be completely backfilled until it has been inspected, tested and approved in writing.
G. Furnish necessary force pump and all other test equipment.
H. Upon completion of each phase of work, entire system shall be tested and adjusted to meet site requirements.
I. Low voltage wire under paving shall be tested for continuity, prior to paving.

3.06 BACKFILLING

A. Backfill trench and compact to specified subgrade elevation. Protect piping from displacement.
B. Buried pipe in trenches shall be center loaded only until all required tests are performed. Trenches shall be carefully backfilled with the excavated materials approved for backfilling, consisting of earth, loam, sandy clay, sand or other approved materials, free from large clods of earth or stones. Backfill shall be mechanically compacted in landscaped areas to a dry density equal to adjacent undisturbed soil in planting areas. Backfill will conform to adjacent grades without dips, sunken areas, humps or other surface irregularities.
C. A fine granular material backfill will be initially placed on all lines. No foreign matter larger than 1/2 inch in size will be permitted in the initial backfill.
D. Flooding of trenches will be permitted only with approval of the Landscape Architect or Designated Representative.
E. If settlement occurs and subsequent adjustments in pipe, valves, sprinkler heads, lawn or planting, or other construction are necessary, the Contractor shall make all required adjustments without cost to the City.

3.07 TEMPORARY REPAIRS

A. The City reserves the right to make temporary repairs as necessary to keep the sprinkler system equipment in operating condition. The exercise of this right by the City shall not relieve the Contractor of his responsibilities under the terms of the warranty as herein specified.

3.08 SYSTEM STARTUP

A. Prepare and start system in accordance with manufacturer's instructions.
B. Adjust control system to achieve time cycles required.

3.09 MAINTENANCE

A. The entire sprinkler irrigation system shall be under full automatic operation for a period of seven days prior to any planting.
B. The Landscape Architect or Designated Representative reserves the right to waive or shorten the operation period.

3.10 CLEANUP

A. Cleanup shall be performed as each portion of the work progresses. Refuse and excess dirt shall be removed from the site, all walks and paving shall be broomed or washed down, and any damage sustained to the work of others shall be repaired and work returned to its original condition.

3.11 OPERATING INSTRUCTIONS

A. The Contractor shall be required to train City's maintenance personnel in proper operation of all major equipment. Provide written evidence of the person or persons so trained to the Landscape Architect or Designated Representative.

3.12 CLOSEOUT ACTIVITIES

A. Instruct City's personnel in operation and maintenance of system. Use operation and maintenance material as basis for demonstration.
B. Irrigation Schedule: See Submittal Requirements above.
C. Irrigation Audit: Shall be performed by a third party representative hired by the City. Contractor shall coordinate keys to controllers and valve boxes for use by the auditor.

3.13 MAINTENANCE

A. Provide a separate maintenance contract for specified maintenance service.

End of Section

PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
APPROVED: _____ DATE: _____
CITY ENGINEER
ORIGINAL SIGNED DATE

DESIGN
DRAWN
CHECKED

NO.	REVISIONS	DATE	APPROVED

REGISTERED LANDSCAPE ARCHITECT
JEFFREY C. FERBER NO. 2844
Signature
03/31/00
Renewal Date
Date
STATE OF CALIFORNIA

PUBLIC IMPROVEMENT PLANS
ORTEGA PARK
LANDSCAPE NOTES

03/06/2020
DATE

2019-00678
PBW. NO.

- | L5.1
BID NO. | SHT. DES.

C-1-4879
DWG. NO.

SHT. 27 OF 27

N:\10001\1144-02-RC18-Ortega-Park-Dwight-Murphy-Field-Con-Docs\Planning\Task-D.02-Construction Documents\AutoCAD\SPECS-1144-02.dwg; 3/5/2020 5:23 PM; Schmitz, Anna K.

Aesthetics

A. **Design Review.** The project, including public improvements, is subject to the review and approval of the Architectural Board of Review (ABR). The ABR shall not grant project design approval until the following Planning Commission land use conditions have been satisfied.

1. **Tree Protection Measures.** The landscape plan and grading plan shall include the following tree protection measures:

   a. **Tree Protection.** All trees not indicated for removal on the approved site plan / landscape plan shall be preserved, protected, and maintained, in accordance with the Tree Protection Plan, if required, and/or any related Conditions of Approval.

   b. **Landscaping Under Trees.** Landscaping under the trees shall be compatible with the preservation of the trees, as determined by the ABR.

   c. **During Construction.**

      i. All trees within 25 feet of proposed construction activity shall be fenced three feet outside the dripline for protection.

      ii. No grading shall occur within three feet of the driplines of the existing trees.

      iii. A qualified Arborist shall be present during any excavation beneath the driplines of the trees which are required to be protected. All excavation within the driplines of the trees shall be minimized and shall be done with hand tools.

      iv. Any roots encountered shall be cleanly cut and sealed with a tree-seal compound.

      v. Any root pruning and trimming shall be done under the direction of a qualified Arborist.

      vi. No heavy equipment, storage of materials or parking shall take place under the dripline of any tree(s), or within five (5) feet of the dripline of any oak tree.

      vii. Oak seedlings and saplings less than four inches (4") at four feet (4') above the ground that are removed during construction shall be transplanted where feasible. If transplantation is not feasible, replacement trees shall be planted at a minimum one to one (1:1) ratio. Replacement trees shall be a minimum of one (1) gallon size derived from South Coastal Santa Barbara County stock.

2. **Screened Backflow Device.** The backflow devices for fire sprinklers, pools, spas and/or irrigation systems shall be provided in a location screened from public view or included in the exterior wall of the building, as approved by the ABR.

3. **Location of Dry Utilities.** Dry utilities (e.g. above-ground cabinets) shall be placed on private property unless deemed infeasible for engineering reasons. If dry utilities must be placed in the public right-of-way, they shall painted "Malaga Green," and if feasible, they shall be screened as approved by ABR.

4. **Trash Enclosure Provision.** A trash enclosure with adequate area for recycling containers (an area that allows for a minimum of 50 percent of the total capacity for recycling containers) shall be provided on the Real Property and screened from view from surrounding properties and the street.

   Dumpsters and containers with a capacity of 1.5 cubic yards or more shall not be placed within five (5) feet of combustible walls, openings, or roofs, unless protected with fire sprinklers.

Air Quality

B. **Air Quality and Dust Control.** The following measures shall be shown on grading and building plans and shall be adhered to throughout grading, hauling, and construction activities:

   a. During construction, use water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this should include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency should be required whenever the wind speed exceeds 15 mph. Reclaimed water should be used whenever possible. However, reclaimed water should not be used in or around crops for human consumption.

   b. Minimize amount of disturbed area and reduce on site vehicle speeds to 15 miles per hour or less.

   c. If importation, exportation and stockpiling of fill material is involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting fill material to and from the site shall be tarped from the point of origin.

   d. Gravel pads shall be installed at all access points to prevent tracking of mud onto public roads.

   e. After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, or revegetating, or by spreading soil binders until the area is paved or otherwise developed so that dust generation will not occur.

   f. The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holiday and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the Air Pollution Control District prior to land use clearance for map recordation and land use clearance for finish grading of the structure.

   g. All portable diesel-powered construction equipment shall be registered with the state's portable equipment registration program OR shall obtain an APCD permit.

   h. Fleet owners of mobile construction equipment are subject to the California Air Resource Board (CARB) Regulation for In-use Off-road Diesel Vehicles (Title 13 California Code of Regulations, Chapter 9, § 2449), the purpose of which is to reduce diesel particulate matter (PM) and criteria pollutant emissions from in-use (existing) off-road diesel-fueled

vehicles. For more information, please refer to the CARB website at www.arb.ca.gov/msprog/ordiesel/ordiesel.htm.

i. All commercial diesel vehicles are subject to Title 13, § 2485 of the California Code of Regulations, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading shall be limited to five minutes; electric auxiliary power units should be used whenever possible.

j. Diesel construction equipment meeting the California Air Resources Board (CARB) Tier 1 emission standards for off-road heavy-duty diesel engines shall be used. Equipment meeting CARB Tier 2 or higher emission standards should be used to the maximum extent feasible.

k. Diesel powered equipment should be replaced by electric equipment whenever feasible.

l. If feasible, diesel construction equipment shall be equipped with selective catalytic reduction systems, diesel oxidation catalysts and diesel particulate filters as certified and/or verified by EPA or California.

m. Catalytic converters shall be installed on gasoline-powered equipment, if feasible.

n. All construction equipment shall be maintained in tune per the manufacturer's specifications.

o. The engine size of construction equipment shall be the minimum practical size.

p. The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time. Construction worker trips should be minimized by requiring carpooling and by providing for lunch onsite.

Biological Resources

C. Design Review. The project, including public improvements, is subject to the review and approval of the Architectural Board of Review (ABR). The ABR shall not grant project design approval until the following Planning Commission land use conditions have been satisfied.

1. **Tree Protection Measures.** The landscape plan and grading plan shall include the following tree protection measures:

   a. **Tree Protection.** All trees not indicated for removal on the approved site plan / landscape plan shall be preserved, protected, and maintained, in accordance with the Tree Protection Plan, if required, and/or any related Conditions of Approval.

   b. **Landscaping Under Trees.** Landscaping under the trees shall be compatible with the preservation of the trees, as determined by the ABR.

   c. **During Construction.**

      i. All trees within 25 feet of proposed construction activity shall be fenced three feet outside the dripline for protection.

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iii. A qualified Arborist shall be present during any excavation beneath the driplines of the trees which are required to be protected. All excavation within the driplines of the trees shall be minimized and shall be done with hand tools.

iv. Any roots encountered shall be cleanly cut and sealed with a tree-seal compound.

v. Any root pruning and trimming shall be done under the direction of a qualified Arborist.

vi. No heavy equipment, storage of materials or parking shall take place under the dripline of any tree(s), or within five (5) feet of the dripline of any oak tree.

vii. Oak seedlings and saplings less than four inches (4") at four feet (4') above the ground that are removed during construction shall be transplanted where feasible. If transplantation is not feasible, replacement trees shall be planted at a minimum one to one (1:1) ratio. Replacement trees shall be a minimum of one (1) gallon size derived from South Coastal Santa Barbara County stock.

Cultural Resources

D. **Unanticipated Archaeological Resources Contractor Notification.** Standard discovery measures shall be implemented per the City master Environmental Assessment throughout grading and construction: Prior to the start of any vegetation or paving removal, demolition, trenching or grading, contractors and construction personnel shall be alerted to the possibility of uncovering unanticipated subsurface archaeological features or artifacts. If such archaeological resources are encountered or suspected, work shall be halted immediately, the City Environmental Analyst shall be notified and the Owner shall retain an archaeologist from the most current City Qualified Archaeologists List. The latter shall be employed to assess the nature, extent and significance of any discoveries and to develop appropriate management recommendations for archaeological resource treatment, which may include, but are not limited to, redirection of grading and/or excavation activities, consultation and/or monitoring with a Barbareño Chumash representative from the most current City qualified Barbareño Chumash Site Monitors List, etc.

If the discovery consists of possible human remains, the Santa Barbara County Coroner shall be contacted immediately. If the Coroner determines that the remains are Native American, the Coroner shall contact the California Native American Heritage Commission. A Barbareño Chumash representative from the most current City Qualified Barbareño Chumash Site Monitors List shall be retained to monitor all further subsurface disturbance in the area of the find. Work in the area may only proceed after the Environmental Analyst grants authorization.

If the discovery consists of possible prehistoric or Native American artifacts or materials, a Barbareño Chumash representative from the most current City Qualified Barbareño Chumash Site Monitors List shall be retained to monitor all further subsurface disturbance

in the area of the find. Work in the area may only proceed after the Environmental Analyst grants authorization.

A final report on the results of the archaeological monitoring shall be submitted by the City-approved archaeologist to the Environmental Analyst within 180 days of completion of the monitoring and prior to any certificate of occupancy for the project.

Geology and Soils

E. **Unanticipated Archaeological Resources Contractor Notification.** Standard discovery measures shall be implemented per the City master Environmental Assessment throughout grading and construction: Prior to the start of any vegetation or paving removal, demolition, trenching or grading, contractors and construction personnel shall be alerted to the possibility of uncovering unanticipated subsurface archaeological features or artifacts. If such archaeological resources are encountered or suspected, work shall be halted immediately, the City Environmental Analyst shall be notified and the Owner shall retain an archaeologist from the most current City Qualified Archaeologists List. The latter shall be employed to assess the nature, extent and significance of any discoveries and to develop appropriate management recommendations for archaeological resource treatment, which may include, but are not limited to, redirection of grading and/or excavation activities, consultation and/or monitoring with a Barbareño Chumash representative from the most current City qualified Barbareño Chumash Site Monitors List, etc.

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A final report on the results of the archaeological monitoring shall be submitted by the City-approved archaeologist to the Environmental Analyst within 180 days of completion of the monitoring and prior to any certificate of occupancy for the project.

Noise

F. **Pre-Construction Conference.** Not less than 10 days or more than 20 days prior to commencement of construction, a conference to review site conditions, construction schedule, construction conditions, and environmental monitoring requirements, shall be held by the General Contractor. The conference shall include representatives from the Public Works Department Engineering and Transportation Divisions, Community Development Department Building and Planning Divisions, (Architect, Arborist,

Landscape Architect, Geotechnical Engineer/material testing laboratory, Project Engineer, City's Construction Manager, Mitigation Monitors), Contractor and each Subcontractor.

G. **Neighborhood Notification Prior to Construction.** At least twenty (20) days prior to commencement of construction, the contractor shall provide written notice to all property owners, businesses, and residents within 300 feet of the project area. The notice shall contain a description of the project, the construction schedule, including days and hours of construction, the name and phone number of the (Project Environmental Coordinator (PEC) and) Contractor(s), site rules and Conditions of Approval pertaining to construction activities, and any additional information that would assist the Building Inspectors, Police Officers and the public in addressing problems that may arise during construction.

H. **Construction Hours.** Construction (including preparation for construction work) shall only be permitted Monday through Friday between the hours of 7:00 a.m. and 5:00 p.m., and Saturdays between the hours of 9:00 a.m. and 4:00 p.m., excluding the following holidays: New Year's Day (January 1st); Martin Luther King Jr Day (3rd Monday in January); President's Day (3rd Monday in February); Memorial Day (Last Monday in May); Independence Day (July 4th); Labor Day (1st Monday in September); Thanksgiving Day (4th Thursday in November); Day Following Thanksgiving Day (Friday following Thanksgiving); Christmas Day (December 25th). *When a holiday falls on a Saturday or Sunday, the preceding Friday or following Monday respectively shall be observed as a legal holiday.

When, based on required construction type or other appropriate reasons, it is necessary to do work outside the allowed construction hours, contractor shall contact the City to request a waiver from the above construction hours, using the procedure outlined in Santa Barbara Municipal Code §9.16.015 Construction Work at Night. Contractor shall notify all residents within 300 feet of the parcel of intent to carry out said construction a minimum of 48 hours prior to said construction. Said notification shall include what the work includes, the reason for the work, the duration of the proposed work and a contact number.

Transportation and Circulation

I. **Construction Storage/Staging.** Construction vehicle/ equipment/ materials storage and staging shall be done on-site. No parking or storage shall be permitted within the public right-of-way, unless specifically permitted by the Public Works Director with a Public Works permit. It is anticipated that during construction of the public improvements there will be some staging on Salsipuedes Street and Ortega Street.

J. **Construction-Related Truck Trips**. Construction-related truck trips for trucks with a gross vehicle weight rating of three tons or more shall not be scheduled during peak hours (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.) in order to help reduce truck traffic on adjacent streets and roadways.

K. **Haul Routes Require Separate Permit.** Apply for a Public Works permit to establish the haul routes for all construction-related trucks with a gross vehicle weight rating of three tons or more entering or exiting the site.

Water Quality and Hydrology

L. **Storm Water Pollution Control and Drainage Systems Maintenance.** Owner shall maintain the drainage system and storm water pollution control devices in a functioning state and in accordance with the Storm Water BMP Guidance Manual and Operations and Maintenance Procedure Plan approved by the Creeks Division. Should any of the project's surface or subsurface drainage structures or storm water pollution control methods fail to capture, infiltrate, and/or treat water, or result in increased erosion, the Owner shall be responsible for any necessary repairs to the system and restoration of the eroded area. Should repairs or restoration become necessary, prior to the commencement of such repair or restoration work, the Owner shall submit a repair and restoration plan to the Community Development Director to determine if an amendment or a new Building Permit is required to authorize such work. The Owner is responsible for the adequacy of any project-related drainage facilities and for the continued maintenance thereof in a manner that will preclude any hazard to life, health, or damage to the Real Property or any adjoining property.

M. **Drainage and Water Quality.** The project is required to comply with Tier 3 of the Storm Water BMP Guidance Manual, pursuant to Santa Barbara Municipal Code Chapter 22.87 treatment, rate and volume. The Owner shall submit a hydrology report prepared by a registered civil engineer or licensed architect demonstrating that the new development will comply with the City's Storm Water BMP Guidance Manual. Project plans for grading, drainage, stormwater facilities and treatment methods, and project development, shall be subject to review and approval by the City Building Division and Public Works Department. Sufficient engineered design and adequate measures shall be employed to ensure that no unpermitted construction-related or long-term effects from increased runoff, erosion and sedimentation, urban water pollutants (including, but not limited to trash, hydrocarbons, fertilizers, bacteria, etc.), or groundwater pollutants would result from the project.

For any proprietary treatment devices that are proposed as part of the project's final Storm Water Management Plan, the Owner shall provide an Operations and Maintenance Procedure Plan consistent with the manufacturer's specifications (describing schedules and estimated annual maintenance costs for pollution absorbing filter media replacement, sediment removal, etc.). The Plan shall be reviewed and approved by the Creeks Division for consistency with the Storm Water BMP Guidance Manual and the manufacturer's specifications.

After certificate of occupancy is granted, any proprietary treatment devices installed will be subject to water quality testing by City Staff to ensure they are performing as designed and are operating in compliance with the City's Storm Water MS4 Permit.

City of Santa Barbara

Parks and Recreation Department

www.sbparksandrecreation.com
www.SantaBarbaraCA.gov

Administration
Tel: 805.564.5431
Fax: 805.564.5480

Parks Division Office
Tel: 805.564.5433
Fax: 805.897.2524

Recreation Division Office
Tel: 805.564.5418
Fax: 805.564.5480

Creeks Division Office
Tel: 805.897.2658
Fax: 805.897.2626

620 Laguna St.
PO Box 1990
Santa Barbara, CA
93102-1990

Golf Course
Tel: 805.564.5547
Fax: 805.897.2644
3500 McCaw Ave.
PO Box 1990
Santa Barbara, CA
93102-1990

Neighborhood and Outreach Services
Tele: 805.897.2560
Fax: 805.963.7569
423 W. Victoria St.
P.O. Box 1990
Santa Barbara, CA
93102-1990

August 19, 2020

Deborah Schwartz, Chair
Planning Commission
City of Santa Barbara
630 Garden Street
Santa Barbara, CA 93101

SUBJECT: Ortega Park Master Plan (604 East Ortega Street, APN 031-172-002) PLN2018-00508, PRE2019-00523, PLN2019-00425, & PBW2019-00678

Dear Chair Schwartz and Commissioners:

The City of Santa Barbara Parks and Recreation Department (Department) requests Planning Commission approval of the proposed Ortega Park Master Plan (Project) to ensure consistency with Municipal Code Section 30.40.030, and a modification to allow street parking in the front set back along Salsipuedes Street and Ortega Street.

The Project will complete a full scale rehabilitation of the 5.46 acre Ortega Park with a synthetic turf field, new year-round pool that provides for instruction, lap swimming, aqua programs and children's slide and splash play features, new park restroom facilities, enhanced community building, new playground and family picnic area, and a multi-generational activity zone with a skate park, basketball, bocce ball, corn hole, and other amenities. The project includes site access and circulation improvements with pedestrian pathways surrounding and through the park, accessible entries and expanded street parking. Ortega Park is a prime location due to its proximity to Santa Barbara Junior High School, various youth serving agencies, and the ability to meet the needs for existing and future residential development in the neighborhood.

Background

A City park since 1930, Ortega Park suffers from numerous deficiencies including an outdated pool facility, limited sports turf, lack of field and park lighting, outdated playground, undersized restroom, lack of picnic and family gathering areas, limited recreation amenities, and poor pedestrian circulation around and through the park due to the lack of sidewalks and pathways. The current park layout and amenities date from the early 1950s and last received limited enhancements in 1975.

Although the turf area is popular for youth soccer and baseball, most of the park goes underused by the neighboring residents, and misuse issues abound. The outdated pool facility has limited use for youth swim instruction since it is only open during the summer season.

It does not have the size, capacity or facilities to support year-round use. A former splash play area was abandoned 20 years ago due to code and structural issues. The Department cannot make minor improvements without triggering a range of code and access upgrades. The playground is outdated and the picnic area was removed due to blighted conditions. The restroom facility needs updating. The over use of the turf area requires regular field closures for rehabilitation and loss of critical field space in limited supply in Santa Barbara. Despite being in a prime location, Ortega Park's outdated facilities severely limit the full potential of the park. In addition, development of the park amenities, which occurred over a 60 year period, resulted in dysfunctional use of space. Existing pathways, gathering areas, and park entry points contribute to poor circulation, do not create welcoming public spaces, and do not meet today's accessibility standards. Given the current dilapidated and blighted conditions of the park, it does not provide much needed recreation amenities to serve as a neighborhood park for residents and their families.

Ortega Park Master Plan Development

Initiated in 2018, development of the Master Plan for Ortega Park included extensive community engagement through meetings, community workshops and on-site forums, an online survey, and presentations to the Parks and Recreation Commission, Neighborhood Advisory Committee, and Architectural Board of Review. The Department used a variety of methods to provide advance notice of the meetings and encourage participation, including direct mailers and emails, on-site park and storefront posters, advertisements in local newspapers, and radio advertisements. Notifications were made in both English and Spanish, and Spanish language translation was made available at the workshops. More than 450 community members participated in the development of the Master Plan, via the following outreach efforts:

Stakeholder Interviews: Interviews with park user groups and neighboring residents and businesses identified recreational needs, key safety concerns, and other issues such as parking and circulation. These meetings included discussion of existing park use by nearby youth-serving organizations, suggested improvements for recreation and site safety, potential new or expanded facilities, and pedestrian and vehicle access within the neighborhood. Over twenty youth serving community organizations and athletic associations frequent the park including Girls Inc. of Greater Santa Barbara, Santa Barbara Boys and Girls Club, Santa Barbara Soccer Club, Santa Barbara Pony Baseball, Haley Street YMCA, Santa Barbara Junior High School, Special Olympics, and AYSO Soccer, among others.

Community Workshops and Meetings: Two community workshops engaged several hundred participants through interactive exercises to identify new park amenities and a preferred alternative plan for Ortega Park. At the first workshop, participants identified a broad vision for the park's character and ambiance, as well as specific features they would like to see in the redevelopment of the site. At the second workshop, participants considered the two conceptual plans illustrating potential park amenities and overall park character. Two additional community meetings held on-site focused on how the park improvements could better serve youth soccer and other field sports, and the significance of maintaining cultural spaces for neighborhood and family gatherings.

Community Online Survey: Following the second workshop, an internet-based survey gathered further input regarding community interest and support in the various park elements. The results generally reinforced the input provided at the community workshops, with overall support for the preferred concept plan included in the Master Plan and specific support for the recreational swimming pool, artificial lighting for the sports field, and the multi-generational sport area.

Public Hearings: A special joint meeting of the Parks and Recreation Commission (Commission) and Neighborhood Advisory Council (NAC) was held on August 22, 2018. The Architectural Board of Review (ABR) evaluated the Master Plan design on October 22, 2018, September 9, 2019, and May 4, 2020. On November 14, 2018 and September 25, 2019, the Parks and Recreation Commission reviewed the Master Plan and recommended advancing the preliminary design of the proposed park improvements. The City Council approved the Master Plan and authorized the next phase of Project development on January 8, 2019.

Project Description

The Project will complete a full scale rehabilitation of the 5.46 acre Ortega Park with a synthetic turf field, new year-round pool that provides for instruction, lap swimming, aqua programs and children's slide and splash play features, new park restroom facilities, enhanced community building, new playground and family picnic area, and a multi-generational activity zone with a skate park, basketball, bocce ball, corn hole, and other amenities. The project includes site access and circulation improvements with pedestrian pathways surrounding and through the park, accessible entries and expanded street parking.

Synthetic Turf Field: The current grass field is only suitable for limited use due to its configuration, surface, and lack of lighting. It is utilized by youth organized soccer on Saturdays, and for soccer practices during the weekdays for two hours in the evening. The softball field is used currently by Santa Barbara PONY baseball and Special Olympics on Saturdays, and two hours in the evenings during the weekdays. High turf use results in up to four field closures per year for rehabilitation and the loss of field use for four months.

The construction of a synthetic turf field with lighting in the northern portion of the park will allow for both youth and adult soccer, youth baseball, rugby, lacrosse, ultimate Frisbee, as well as drop-in play. The use of synthetic turf allows for year-round use, reduces water requirements, and requires a less intensive maintenance program than a natural grass field. The 360-feet-long and 180-feet-wide field will be maximized to allow the greatest playable surface while preserving mature trees on the eastern portion of the park.

Aquatic Facility: The proposed aquatic facility will address a significant unmet need for a community pool. An Aquatics Complex Feasibility Study completed in 2003 revealed a shortage of local aquatic facilities to adequately serve the public's demand for youth and adult swim lessons, therapeutic instruction, recreation and many other free and fee based aquatic activities and programs for residents. Public outreach meetings identified a long list of aquatics programs that a new pool at Ortega Park could provide, including Learn to Swim, Introduction to Water, and Mommy and Me Classes, Life Safety, Health, Wellness & Fitness, and Lap Swimming.

The proposed facility includes a 26,870 square foot multi-purpose pool area featuring three distinct zones to accommodate year-round activities simultaneously. The pool area will include: wet play/wading pool; non-competitive lap pool; pool slide/play feature; pool facility building with restrooms, and showers. The existing Ortega Welcome House will be incorporated into the aquatic facility area, Constructed in 1952, the 1,650 square foot existing community building will be upgraded to provide access to the pool areas as well as serve as a community gathering location.

Multi-Generational Recreation Zone and Skate Park: The Multi-Generational Activity Zone will be located at the southern corner of Ortega Park. The area will serve as a key day-to-day activator for the park and provide activities for various age ranges throughout the year. Most notably, this allows the incorporation of amenities that were selected and highly supported by the community through the public input process. These include a skate park, basketball court, bocce ball, ping pong, corn hole, shaded seating, and bike racks.

The area balances the various active uses by placing the more intensive uses (such as the skate park and basketball court) further from the edge of the street and placing the less intensive areas (i.e., corn hole, bocce ball, and ping pong) near the perimeter. To help reduce the heat-island effect of surface areas, the proposed design incorporates new shade trees with year-round interest. Site furnishings such as benches, trash and recycling receptacles and bike racks will complement the overall circulation and design of the space.

The proposed skate park was developed by a professional skate park designer in collaboration with the local skating community during two workshops. During the first workshop, participants developed three dimensional conceptual designs using play clay materials. The second workshop included the presentation and refinement of the proposed design options.

Playground and Family Picnic Area: The Project includes an 11,370 square foot playground adjacent to a 2,300 square foot family picnic and plaza area. Located in the center of the park, the new area will serve as an activator for the park, providing recreation for children and families that may also be participating in other park activities. The location will provide additional protection from vehicular and pedestrian traffic outside of the park, allowing parents to be able to keep a watchful eye on play areas.

Park Use

The purpose of the project is to renovate a dilapidated City park that has not seen reinvestment since 1975, including a pool facility is almost 70 years old. Although a popular location for youth soccer and baseball, the fields, buildings, pool and playground are in poor condition. Park safety concerns limited neighborhood use along with lack of parking, park pathways, and valued park amenities and activities. At the same time, residential density has increased and the area is slated for further infill development with multi-family housing. Limited park space make the renewal of Ortega Park even more critical. Through renovation, the park will see increased use by area residents as well as Santa Barbara families for youth team sports, year-round aquatics, skate boarding, court sports, and community gatherings. The proposed amenities were identified and prioritized during a yearlong community based master plan process.

With current annual use numbers (by permit) of 70,000, for the natural turf fields, it is anticipated that the synthetic sports field use could double as a result of increased field availability and reduced seasonal closures for turf maintenance. Although there are no use numbers for the skate park that existed onsite from 1998-2005, the addition of a new skate park could bring 200-350 users each week for an average of 15,000 per year, and the aquatics facility, designed to serve as a recreational pool amenity for all ages will increase use from 4,000 youth in the summer to 40,000 of all ages over the entire year. These estimates are based on a review of similar public facilities in other California cities. The current pool facility is severely undersized and therefore is only used for summer learn to swim programs for youth. A wading pool was removed 25 years ago due to health code restrictions. It is anticipated that access to the park will include families travelling by car, families walking and biking, organized transportation and area youth organizations accessing the park by walking. The Parks and Recreation Department has a long history of collaborating with Santa Barbara Junior High School which includes, when needed, additional parking to support youth sports activities.

Tree Removals and Planting

The Project proposes the removal of 40 trees, retention of 18 trees, and planting 108 new trees. Once complete, the park will have 126 trees. Of the 40 trees proposed for removal, two are street trees, one is a setback tree, and 37 are park trees. None of the trees on the project site, including the 18 trees to be retained, are designated Specimen Trees, as defined by Santa Barbara Municipal Code 15.20.020(J). Proposed tree replacement ratios exceed a 2:1 ratio. Once complete, the project site will have 126 trees versus 58. The City's Urban Forest Superintendent determined the proposed 2:1 mitigation is more

than satisfactory when analyzing comparative biomass loss. The proposed species used for planting and their mature size mitigates the loss of the trees removed and exceeds the existing biomass on site. It is expected that the same biomass will be achieved within a 10 year period or less. The retention of trees on site, combined with the proposed plantings results in a net positive gain in habitat and biomass. The proposed tree removals were reviewed by the Street Tree Advisory Committee on September 18, 2019 and approved by the Parks and Recreation Commission on September 24, 2019.

Gates and Fencing

The Project includes entry gates and a perimeter fence around Ortega Park to allow the park to be secured after-hours when the park is closed. Special recreation activities would be allowed in the park by permit only, if consistent with City policies and regulations.

Bicycle Parking

The Project will include long-term and short-tern parking. Twenty-four (24) spaces will be installed for short-term park visitors and two long-term spaces (like lockers) will be provided for park employees.

Trash and Recycling

The project includes a trash enclosure for trash and recycling located mid-block along Ortega Street against the multi-sports field fence. A four cubic yard dumpster will store trash and a four cubic yard dumpster will hold recycling. A green waste dumpster is not proposed, as the Department's standard procedure is to collect and remove all green waste from the site on the day it is generated.

Water Use and Conservation

Water conservation will be achieved through the use of recycled and recirculated water where applicable. A pool cover, limitations on seasonal use of splash pad and water slide, and drought tolerant landscaping will also further reduce water use and promote conservation practices. Recycled water is proposed for irrigation only. Recirculated water is proposed for use in the splash pad only. Proposed potable water demand from amenities is estimated at approximately 654,763 gallons per year compared to an existing pre-drought demand of approximately 621,630 gallons per year. Recycled water demand for irrigation is estimated at approximately 1,143,438 gallons per year compared to existing pre-drought demand of approximately 1,567,920 gallons per year.

Lighting

The Project proposes new lighting in the public right of way and on-site. All lighting will conform to the City of Santa Barbara's Outdoor Lighting Ordinance (SBMC 22.75) and adhere to the Outdoor Lighting Design Guidelines set forth in 2009. On May 4, 2020, Architecture Board of Review found the project in compliance with the Outdoor Lighting

Design Guidelines. Photometric studies of the proposed lighting conclude the proposed lighting would not spill over to adjacent properties.

*Street Lighting Existing and Proposed***:** The existing street lights surrounding the park are located at the corners and one mid-block, except for Salsipuedes Street. The project proposes to add one B-16 Slim Line Street Light mid-block on Salsipuedes Street. The project will also replace one street light mid-block on Ortega Street with a B-16 Slim Line Street Light per Public Works and City standards to provide safety and uniformity but avoid glare, light trespass, and over-lighting. Title 24 lighting standards are met or exceeded with these fixtures.

Security Lighting Existing: There are currently 5 tall pole lights on site with two or three fixtures on each pole. They are approximately 40 in height and are illuminated all night for security purposes. Fewer pole lights are currently needed because there are multiple fixtures on each pole and the taller the pole, the greater the light spread. However, the taller security lighting creates a greater impact on neighboring residential units as they do not shield the glare. Existing security lighting will be removed and replaced.

*Security Lighting Proposed***:** On site security lighting will be provided by fifteen 14-foot pedestrian pole lights, is a standard fixture in City parks. A photometric analysis was prepared for the project site. This analysis provides a point by point foot-candle plot on the site plan showing the illuminance to 20' beyond the property line. Minimum, average, and maximum foot-candles with uniformity ratios are provided in the illumination summary tables. These calculations demonstrate there is no impact to the adjacent residential uses. On Ortega Street, the illuminance does not exceed the maximum 0.1 foot candle per Lighting Design Guidelines. Areas adjacent to commercial uses, such as Salsipuedes Street, do not exceed 0.2 foot candle at 10' beyond the property line. As a result, the illumination levels provided in the current design are compatible with the adjacent residential use and light trespass/glare levels are far below the maximum allowable output. Park lighting shall be reduced after park hours.

*Field Lighting Existing and Proposed***:** Field and court pole lighting were installed on site as early as 1965. In 2004, four 60-foot pole lights and two 40-foot pole lights illuminated the ballfield, however, they were removed due to different maintenance issues. The Project proposes field lighting for the artificial turf fields to allow for evening play. The synthetic turf field will be illuminated by three 70 foot pole lights and three 60 foot pole lights. The six pole lights may not all be illuminated at once as some are only for the ballfield portion of the synthetic turf field. The basketball court will be illuminated by two 40 foot pole lights. Field lighting will be operated by special permit only and shall not be on past 10:00 pm.

Street Right-of-Way and Parking

The Project Street Right-of Way Improvements were designed in conjunction with Public Works Transportation staff and include additional parking, loading areas, sidewalks, and

street lighting. The Project proposes to maximize available on-street parking by creating 90-degree nose-in parking on Salsipuedes Street (33 regular stalls and 2 ADA stalls) and reverse angle parking on Ortega Street (26 regular stalls and 4 ADA stalls), as well as three pick-up/drop-off zones in front of the Welcome House. Sidewalks will be installed within the park and adjacent to Ortega Street and Salsipuedes Street. Existing street lights will be retained and one additional light will be located mid-block on Salsipuedes Street to illuminate the new sidewalk.

Modification to Allow Parking in Front Setback
The request to allow parking in the front setback on Ortega and Salsipuedes Streets is required to improve off-site parking and passenger loading in the right-of-way. Currently, there are approximately 40 parallel parking spaces total on Ortega Street and Salsipuedes Street adjacent to the park and no passenger loading areas. The modification is required to meet minimum street widths, while provide 90-degree and angled parking. The modification will allow the vehicles to overhang into the Park property and increasing parking from 40 spaces to 63 spaces with three new loading areas. Approval of the modification will accomplish increased parking, a key priority of community members during the development of master plan. As recommended by the Transportation Division, the Department will defer application of any restricted timed parking signage until after completion of the project. Once the park is operational for a period of time, it may be determined if there are any issues related to unrestricted parking, and the signage could be installed at that time.

Technical Studies

Noise Analysis: The current and past recreational amenities are very similar to the proposed amenities that include a multi-use artificial turf field, basketball court, bocce ball and corn hole court, ping pong table, aquatics building and pool, splash pad, playground, restrooms, and skate park. No amplified noise such as music or a PA system will be permitted. The park will be fenced and locked after designated operating hours (8 am to ½ hour after sunset) to limit noise at night. Any after-hours use of the park will be by special permit only issued by the Parks and Recreation Department.

A noise analysis of the proposed skate park studied potential impacts on sensitive receptor locations (housing) close to the site. The study used typical noise levels from similar skate parks and determined the below grade concrete design with very smooth hand trowel finish, the assessment of existing ambient noise at the site, the distance from surrounding uses, and the hours of operation (8 am to a ½ hour after sunset), all mitigate the proposed skate parks potential noise impacts to less than significant.

Hydrology Calculations & Storm Water Management Plan: Stormwater quality reports are provided for both onsite and offsite improvements. Based on the findings of the reports, the Project meets the applicable standards and requirements for the City of Santa Barbara. The proposed drainage plan is consistent with the City's Storm Water Management Program design criteria for development. In summary, the proposed design

treats the runoff from the site for the 1-inch 24-hour storm event for the offsite improvements. For the onsite improvements, the Project reduces the post-development peak flow of runoff to below the pre-development rate of the 2- through 25-year storm events; reduces the post-development volume of runoff to below the pre-development rate for the 2- through 25-year storm events; and treats the runoff from the site for the 1-inch 24-hour storm event.

Historical Significance of the Ortega Welcome House: On August 12, 2019, City Historian Nicole Hernandez determined the Welcome House does not represent an intact, unique or particular style that is important to the heritage of the City nor forms an integral component of a thematic complex or district and does not qualify as a historic resource.

Archaeological Resources: An archaeological resources investigation by David Stone, Wood Environmental, determined there are no archaeological resources at Ortega Park. Based on the absence of prehistoric cultural remains, the proposed project is not considered to have the potential to impact intact, significant or important historic or prehistoric cultural remains as defined in the City MEA, or to provide unique information capable of meeting the criteria for listing on the California Register of Historical Resources (Pub. Res. Code §§5024.1, Title 14 CCR, Section 4852; California Environmental Quality Act Guidelines 15064.5[3]), as follows:

> (A) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage:
> (B) Is associated with the lives of persons important in our past;
> (C) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
> (D) Has yielded, or may be likely to yield, information important in history.

As a result, no further measures are recommended. The standard City condition would apply.

Contaminated Soils: Part of the site was used as a municipal waste dump from as least 1902 until 1927. A Phase II Environmental Site Assessment determined the following contaminates onsite in concentrations exceeding state standards: volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), benzo (a) pyrene (BaP), polycyclic aromatic hydrocarbons (PAHs), arsenic, barium, chromium, lead, mercury, thallium and zinc. A Soils Management Plan (SMP) was reviewed and approved by Santa Barbara County Environmental Health Services. This plan presents methodology and protocols to properly handle, store, transport, and dispose of impacted soil that is encountered during grading. Contaminated soils disturbed as part of this project will be removed from the site following the required method in the SMP.

Project Construction

The Project will be constructed in three phases. Phase 1 (4 months) including Street Right-of-Way Improvements, Phase 2 (8 months), includes demolition grading and sports field development, and Phase 3 (14 months) includes construction of pool facility, all buildings, skate park and courts. The Department developed a comprehensive approach to minimize construction impacts and stage from the project site (sheet D-2 provides a summary and graphic of the proposed improvement area.) Details include areas proposed for construction vehicle parking, construction staging, where fencing will occur, reduction measures for construction noise, and an estimated construction duration period. Limitations on construction activity and locations of construction fencing and gates are shown. Gates will be located away from housing when possible. Demolition, grading, and the removal of contaminated soils in Phase 2 will take place during the summer, when the adjacent Santa Barbara Junior High School is not operating. As Phase 1 will generate noise in closest proximity to adjacent residences, a 6 foot tall construction fence with sound reduction blankets or plywood will be installed along the 480 foot length of property along Ortega Street to mitigate acoustical impacts. Acoustifence (or equal) will be used as the sound reduction blanket with an STC of 28 which gives you a transmission loss of 28 dB through the material.

Site Grading

The 5.46 acre site requires grading to create amenities like the multi-sport field, aquatics facility, skate park, court area, and right of way improvements. These amenities must be accessible, creating additional grading requirements. The estimated cut is 10,600 cubic yards (CY) and estimated fill is 480 CY for a net 10,120 CY of cut that would be hauled off site. There is also a requirement from the Soils Management Plan to remove soil to groundwater depth below the storm water infiltration areas. The breakdown of the 10,120 CY total export is approximately 1,870 CY export of clean soil, 8,250 CY export of contaminated soil, and no import.

Design Review:

The Architectural Board of Review (ABR) reviewed the Project on October 22, 2018, September 9, 2019, and May 4, 2020. On May 4, 2020, the ABR found that the Project met the Compatibility Analysis Criteria per SBMC 22.68.045.B.

Summary

The renovation of Ortega Park will provide area residents and community members with a dynamic recreation area that serves a broad cross section of youth, adults and families. Designed to serve multi-generations, Ortega Park will provide much needed upgraded outdoor recreation and community gathering spaces as the City fosters increased residential densities and a mix of housing in the downtown.

The Department looks forward to the favorable consideration of this Project. Please contact Justin Van Mullem, at jvanmullem@santabarbaraca.gov or 805-897-1972, or Jill Zachary at jzachary@santabarbaraca.gov, or 805-564-5430.

Sincerely,



Justin Van Mullem
Project Planner

cc: Jill E. Zachary, Parks and Recreation Director

City of Santa Barbara
Parks and Recreation Department

Memorandum

DATE: 7.24.20

TO: Justin Van Mullem, Project Planner

FROM: Nathan Slack, Urban Forest Superintendent NRS

SUBJECT: Ortega Park Trees – DART Application Supplemental Info

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This memo is to acknowledge that the following items have been reviewed and approved by the City's Urban Forest Superintendent for proposed removals at Ortega Park.

> Ortega Park Biomass Response: As shown on sheet L-9, the project includes the planting of 108 new trees. Sheet L-9 provides proposed tree species, locations, quantities, and container sizes as listed (24", 36", 48" box). Proposed tree replacement ratios exceed a 2:1 ratio. Once complete, the project site will have 126 trees versus 58.
>
> The City's Urban Forest Superintendent, and certified arborist, determined the proposed 2:1 mitigation is more than satisfactory when analyzing comparative biomass loss. The proposed species used for planting and their mature size mitigates the loss of the trees removed and exceeds the existing biomass on site. While the rate of tree growth and maturity as it relates to biomass cannot be easily calculated due to variation in environmental conditions, it is expected that the same biomass will be achieved within a 10-year period or less. Additionally, the 4 largest trees on site, initially proposed for removal are now being retained, further reducing the loss of overall biomass on site. The retention of trees on site, combined with the proposed plantings results in a net positive gain in habitat and biomass on site.

I have reviewed this project, specifically the proposed removals, the replacement species, and replacement ratio. After extensive review, I have determined that the proposed replacement ratio far exceeds minimum requirements for long-term preservation of biomass on site.

As defined in the City's Municipal Code 15.20, a Specimen Tree is defined as a tree which has been found by the Parks and Recreation Commission to be of high value because of its type and/or age and which has been designated by resolution of the City Council as a "specimen tree"

No trees located within the Ortega Park site are considered to be specimen trees as defined in SBMC 15.20.

APPLICATION REVIEW

1. 604 E ORTEGA ST **P-R Zone**

(3:15)

Assessor's Parcel Number: 031-172-002
Application Number: MST2018-00508
Owner: City of Santa Barbara
Applicant: George Thomson

(This is a one-time Pre-Application Consultation: Proposal for renovations for Ortega Park. Project consists of a new playing field, expanded pool, waterslide, basketball court, skate park, bocce ball courts, cornhole courts, splash pad, shade structures, and two play structures. Also proposed are head-in parking spaces, reconfigured walkways, new pedestrian lighting, and new fencing and gates. This project will require Planning Commission review and has not been reviewed for compliance with the Santa Barbara Municipal Code, Title 30.)

(Comments Only.)

RECUSAL: To avoid any actual or perceived conflict of interest, Board Members Cunningham recused himself from hearing this item.

Actual time: 3:08 p.m.

Present: Jeff Ferber, ASLA, Principal Architect, RRM Design Group; George Thomson, Parks Capital Projects Supervisor; and Rich Hanna, Assistant Parks and Recreation Director, Parks and Recreation Department, City of Santa Barbara

Public comment opened at 3:22 p.m.

Jeremy Grey discussed concerns regarding night parking density issues and requested either no over-night parking allowed or instituting evening permit parking in the area of the park in consideration of local neighborhood residents. He was also concerned about homelessness issues of congregating in the area of the park.

Public comment closed at 3:23 p.m.

Board comments:

Board Member Wittausch:
- Appreciated the transformative park planned for the neighborhood.
- Study providing thematic colored and/or textured walkway surfaces.
- Study providing more 90-degree parking spaces to maximize available parking.
- Study re-allocating dedicated space for games and activities, and include areas for passive recreation.

Board Member Moore:
- Study limiting the number of activities to improve the overall experience in the park.
- Integrate smaller activity areas and redistribute space for larger activity sports.
- Add more shade canopy trees in lieu of palms.

Board Member Six:
- Study peak use amounts to determine needed parking and impacts neighborhood parking.
- Study southwest entry.
- Provide high quality fencing throughout the perimeter of the park to adequately provide security and yet feel open during the day.
- Add more shade canopy trees in lieu of palms.
- Study undergrounding all overheard utilities.
- Provide sound mitigation for mechanical pool equipment building.

Board Member Watkins:
- Restudy access areas and realign proportions of activity areas for usability and functionality.
- Study providing more park amenities such as picnic benches, barbeques, used-charcoal refuse bins, etc.
- Provide further shaded spectator areas.
- Study providing more walkways and pathways in proximity to kids' activities.
- Study providing some programming for passive tree grove at southern border.
- Study providing art murals.

Chair Tripp:
- Concurred with most Board Member comments.
- Provide more revitalization and simplification of pathways and materials.
- Study ratio of paved areas to landscaping for more opportunities for decomposed granite (DG) and planting areas rather than concrete.
- Study spacing between activity areas and provide more areas for passive recreation.
- Provide more meandering pathways and shading.
- Study incorporating plantings in conjunction with the proposed fencing for the appearance of openness; see Alice Keck Park Memorial Gardens for reference.
- Study parking circulation at night in the neighborhood.
- Study restricted parking for park visitors during the day.
- Provide sound mitigation for mechanical pool equipment building.

(3:15PM) NEW ITEM: CONCEPT REVIEW

1. 604 E ORTEGA ST

Assessor's Parcel Number:	031-172-002
Zone:	P-R
Application Number:	PLN2018-00508
Owner:	City of Santa Barbara
Agent:	Santos Escobar
Applicant:	George Thomson

(Proposal for renovations for Ortega Park. Project entails a new playing field, expanded pool, water slide, basketball court, skatepark, bocce ball courts, cornhole courts, splash pad, shade structures, and two play structures. Also proposed are head-in parking spaces, reconfigured walkways, new pedestrian lighting, and new fencing and gates. This project will require Planning Commission review.)

No final appealable decision will be made at this hearing. Project requires compliance with the Project Compatibility Analysis and the following guidelines: Urban Design Guidelines, Outdoor Lighting Design Guidelines. Project received a Pre-Application Consultation on October 22, 2018.

RECUSAL: To avoid any actual or perceived conflict of interest, Board Member Cunningham recused himself from hearing this item due to prior contract work with the City.

Actual time: 3:08 p.m.

Present: George Thomson, Parks Capital Projects Supervisor, City of Santa Barbara; Jeff Ferber, Landscape Architect, RRM Design Group; Elijah Pierce, Architect, RRM Design Group; and Anna Schmitz, RRM Design Group

Staff comments: Mr. Ozilymaz stated that the public comment format has changed. Members of the public are asked to speak at the podium unless they are requested by the Chair or Board members to approach the plans.

Public comment opened at 3:31 p.m.

The following individuals spoke:

1. Jose Arturo Gallegos, in support
2. Aaron Goldschmidt

Written correspondence from Richard Rosenwald was acknowledged.

Public comment closed at 3:36 p.m.

Motion: Continue indefinitely with comments:

1. The Board finds that the project is a huge improvement and appreciates that the Applicant has listened to suggestions from the Board and the community for making this project better.
2. The majority of the Board's access concerns are satisfied, but the soccer field still needs a second or third viable entry.
3. The scale of the proposed structures is acceptable.
4. The style of the architectural structures is acceptable.
5. Detailing throughout the project could be minimized and the architecture simplified.
6. The small details, for instance the doors depicted with classic Santa Barbara style elements is appreciated. The Board would like to see these elements remain.
7. The south access shall be continuous to the center shade structure area, and shall primarily be a pedestrian pathway. Any skateboard park elements shall be secondary.
8. The attention to possible mural locations is appreciated. Study providing more organic and less structured mural locations.
9. Provide lighting studies, particularly for the ball field. Provide photometric studies showing that light levels will be acceptable.
10. Provide lighting specifications and locations for the remainder of the site.
11. Study the possibility of providing a true wrought iron gate at the major entry locations. Transition to a less expensive material around the ball field, etc.
12. Study possible color alternatives to the rubber playground underlayment.
13. Consider more locations for public art, and possibly temporary locations by invitation to surrounding public.
14. Attempt to minimize the standard grey concrete.
15. The Board requests additional input either from the Historic Landmarks Commission Landscape Architect or from an alternative review body.
16. Explore adding arcades and full shade cover at the pool areas and buildings.

Action: Six/Wittausch, 6/0/0. (Cunningham absent.) Motion carried.

Individual comments: Board Member Six stated that he would like to see more real turf used throughout the project rather than synthetic turf.

(3:15PM) CONTINUED ITEM: CONCEPT REVIEW

1. **604 E ORTEGA ST**

Assessor's Parcel Number:	031-172-002
Zone:	P-R
Application Number:	PLN2019-00425
Owner:	City of Santa Barbara
Applicant:	George Thompson

(Proposal for renovations to Ortega Park. The project consists of the Ortega Park Master Plan, including a new swimming pool, wading pool, water slide, skate park, splash pad, sports courts, shade sails, sports field with synthetic turf, ping pong tables, cornhole, and buildings for restrooms and maintenance. Site improvements such as fencing, parking, landscaping, dumpsters and related enclosures, and walkways are also proposed. The park is considered a Community Park (except the ballfields and related facilities), a Sports Facility (for the ballfields and related facilities only), and a Community Building (the Welcome House) per City Council Resolution 17-074.)

No final appealable decision will be made at this hearing. Project requires compliance with the Project Compatibility Analysis and the following guidelines: Urban Design Guidelines, Outdoor Lighting Design Guidelines. Project was last reviewed on September 9, 2019 under planning case PLN2018-00508.

RECUSAL: To avoid any actual or perceived conflict of interest, Board Member Cunningham recused himself from hearing this item due to prior contract work with the City.

Actual time: 3:12 p.m.

Present: Jill Zachary, Parks and Recreation Director, City of Santa Barbara; Anna Schmitz, Associate Designer, RRM Design Group; Elijah Pierce, RRM Design Group; and Jeff Ferber, RRM Design Group

Public comment opened at 3:29 p.m., and as no one wished to speak, it closed.

The following individual(s) spoke:

1. Rubayi Estes

Written correspondence from Eric Jensen, George Nagai, Mark Moses was acknowledged.

Public comment closed at 3:34 p.m.

Motion: Continue to the Planning Commission with comments:

1. The Board appreciates the design of the project and feels that the project will be a tremendous asset to the community and neighborhood.
2. The general design of the structures and landscape is commendable. The general massing of new structures is acceptable.
3. Study the trellis locations to further detail the purlins versus the major beams.
4. The colored wainscot is not necessary to carry over the doorways.
5. The landscape should be kept simple and low maintenance. Trees will be the most important element in the design to create shade. Palm trees should be used as accents and less frequently.
6. Study a flat roof or parapet roof on portions of the building.
7. Make entryways to the park stronger with a different paving material that signifies an entry point.
8. The project could meet the Project Compatibility Analysis but requires further detailing to receive approval.
9. The Board finds that the Compatibility Analysis Criteria generally have been met (per SBMC 22.68.045.B.) as follows:
    a. The project fully complies with all applicable City Charter and Municipal Code requirements. The project's design is consistent with design guidelines applicable to its location within the City.
    b. The design of the project is compatible with desirable architectural qualities and characteristics that are distinctive of Santa Barbara and of the particular neighborhood surrounding the project.
    c. The size, mass, bulk, height, and scale of the project are appropriate for its location and neighborhood.
    d. There are no adjacent Landmarks or other nearby designated historic resources or natural features.
    e. There are no established scenic public vistas.
    f. The project includes an appropriate amount of open space and landscaping.

Action: Moore/Six, 5/0/0. (Watkins and Cunningham absent.) Motion carried.

Ortega Park

Santa Barbara-South of Santa Ynez Range County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	4.71	Acre	4.71	205,167.60	0
Other Non-Asphalt Surfaces	0.96	Acre	0.96	41,817.60	0
Recreational Swimming Pool	11.91	1000sqft	0.27	11,912.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	37
Climate Zone	8			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Based on approximate schedule provided by applicant

Grading -

Demolition -

Water And Wastewater -

Sequestration -

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Ortega Park - Santa Barbara-South of Santa Ynez Range County, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	NumDays	10.00	70.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	NumDays	20.00	70.00
tblConstructionPhase	NumDays	20.00	40.00
tblConstructionPhase	NumDays	20.00	260.00
tblGrading	MaterialExported	0.00	10,120.00
tblGrading	MaterialImported	0.00	480.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblSequestration	NumberOfNewTrees	0.00	68.00
tblTripsAndVMT	HaulingTripNumber	3.00	0.00
tblTripsAndVMT	HaulingTripNumber	1,325.00	0.00
tblTripsAndVMT	HaulingTripNumber	148.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	42.00
tblTripsAndVMT	WorkerTripNumber	30.00	109.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1597	1.5998	1.2150	2.1500e-003	0.1385	0.0787	0.2172	0.0592	0.0728	0.1320	0.0000	188.5596	188.5596	0.0553	0.0000	189.9419
2022	0.2875	2.8648	2.4962	4.7500e-003	0.8070	0.1338	0.9408	0.4237	0.1237	0.5473	0.0000	419.9386	419.9386	0.1135	0.0000	422.7756
2023	0.0774	0.5788	0.8460	1.3500e-003	7.7200e-003	0.0290	0.0367	2.0500e-003	0.0268	0.0289	0.0000	118.9062	118.9062	0.0354	0.0000	119.7920
Maximum	**0.2875**	**2.8648**	**2.4962**	**4.7500e-003**	**0.8070**	**0.1338**	**0.9408**	**0.4237**	**0.1237**	**0.5473**	**0.0000**	**419.9386**	**419.9386**	**0.1135**	**0.0000**	**422.7756**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1597	1.5998	1.2150	2.1500e-003	0.1385	0.0787	0.2172	0.0592	0.0728	0.1320	0.0000	188.5594	188.5594	0.0553	0.0000	189.9417
2022	0.2875	2.8648	2.4962	4.7500e-003	0.8070	0.1338	0.9408	0.4237	0.1237	0.5473	0.0000	419.9382	419.9382	0.1135	0.0000	422.7751
2023	0.0774	0.5788	0.8460	1.3500e-003	7.7200e-003	0.0290	0.0367	2.0500e-003	0.0268	0.0289	0.0000	118.9061	118.9061	0.0354	0.0000	119.7919
Maximum	**0.2875**	**2.8648**	**2.4962**	**4.7500e-003**	**0.8070**	**0.1338**	**0.9408**	**0.4237**	**0.1237**	**0.5473**	**0.0000**	**419.9382**	**419.9382**	**0.1135**	**0.0000**	**422.7751**

Ortega Park - Santa Barbara-South of Santa Ynez Range County, Annual

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

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**7-1-2021**	**9-30-2021**	0.8769	0.8769
2	**10-1-2021**	**12-31-2021**	0.8748	0.8748
3	**1-1-2022**	**3-31-2022**	1.0959	1.0959
4	**4-1-2022**	**6-30-2022**	1.2534	1.2534
5	**7-1-2022**	**9-30-2022**	0.4040	0.4040
6	**10-1-2022**	**12-31-2022**	0.4044	0.4044
7	**1-1-2023**	**3-31-2023**	0.3631	0.3631
8	**4-1-2023**	**6-30-2023**	0.2707	0.2707
9	**7-1-2023**	**9-30-2023**	0.0215	0.0215
		Highest	1.2534	1.2534

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	6.1000e-003	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.1000e-004	3.1000e-004	0.0000	0.0000	3.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0841	0.2847	0.7546	1.9700e-003	0.1883	1.7500e-003	0.1900	0.0505	1.6300e-003	0.0522	0.0000	181.8805	181.8805	9.2900e-003	0.0000	182.1127
Waste						0.0000	0.0000		0.0000	0.0000	14.1834	0.0000	14.1834	0.7033	0.0000	31.7662
Water						0.0000	0.0000		0.0000	0.0000	0.2492	7.9541	8.2033	1.1900e-003	6.1000e-004	8.4147
Total	**0.0902**	**0.2847**	**0.7548**	**1.9700e-003**	**0.1883**	**1.7500e-003**	**0.1900**	**0.0505**	**1.6300e-003**	**0.0522**	**14.4326**	**189.8349**	**204.2675**	**0.7138**	**6.1000e-004**	**222.2939**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	6.1000e-003	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.1000e-004	3.1000e-004	0.0000	0.0000	3.3000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0804	0.2607	0.6654	1.6200e-003	0.1506	1.4700e-003	0.1521	0.0404	1.3700e-003	0.0418	0.0000	149.3359	149.3359	8.0700e-003	0.0000	149.5378
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.2492	6.3905	6.6397	1.1200e-003	6.0000e-004	6.8455
Total	**0.0865**	**0.2607**	**0.6656**	**1.6200e-003**	**0.1506**	**1.4700e-003**	**0.1521**	**0.0404**	**1.3700e-003**	**0.0418**	**0.2492**	**155.7267**	**155.9759**	**9.1900e-003**	**6.0000e-004**	**156.3836**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**4.09**	**8.44**	**11.82**	**17.77**	**19.98**	**16.00**	**19.93**	**19.98**	**15.95**	**19.86**	**98.27**	**17.97**	**23.64**	**98.71**	**1.64**	**29.65**

2.3 Vegetation

Vegetation

	CO2e
Category	MT
New Trees	48.1440
Total	**48.1440**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Phase 2 - Total Demo	Demolition	10/21/2021	11/17/2021	5	20	Phase 2 Total Demo
2	Phase 1 - Demo	Demolition	7/1/2021	8/25/2021	5	40	Phase 1 Demo of Street
3	Phase 1 - Paving	Paving	8/26/2021	10/20/2021	5	40	Phase 1 - Parking Install
4	Phase 2 - Total Grading	Grading	11/18/2021	2/23/2022	5	70	Phase 2 Total Grading
5	Phase 2 - Turf Installation	Site Preparation	2/24/2022	6/1/2022	5	70	Phase 2 Turf Installation
6	Phase 3 - Construction	Paving	6/2/2022	5/31/2023	5	260	
7	Phase 3 - Painting	Architectural Coating	6/1/2023	7/26/2023	5	40	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.96

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 2,509 (Architectural Coating – sqft)

OffRoad Equipment

Ortega Park - Santa Barbara-South of Santa Ynez Range County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Phase 3 - Painting	Air Compressors	1	6.00	78	0.48
Phase 1 - Demo	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 2 - Total Demo	Concrete/Industrial Saws	1	8.00	81	0.73
Phase 2 - Total Grading	Excavators	1	8.00	158	0.38
Phase 2 - Turf Installation	Cranes	1	7.00	231	0.29
Phase 2 - Turf Installation	Forklifts	3	8.00	89	0.20
Phase 2 - Turf Installation	Generator Sets	1	8.00	84	0.74
Phase 3 - Construction	Pavers	2	8.00	130	0.42
Phase 3 - Construction	Rollers	2	8.00	80	0.38
Phase 1 - Demo	Excavators	3	8.00	158	0.38
Phase 2 - Total Grading	Rubber Tired Dozers	1	8.00	247	0.40
Phase 2 - Turf Installation	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Phase 2 - Total Grading	Graders	1	8.00	187	0.41
Phase 2 - Total Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Phase 3 - Construction	Paving Equipment	2	8.00	132	0.36
Phase 2 - Total Demo	Excavators	3	8.00	158	0.38
Phase 1 - Paving	Pavers	2	8.00	130	0.42
Phase 2 - Turf Installation	Welders	1	8.00	46	0.45
Phase 1 - Paving	Paving Equipment	2	8.00	132	0.36
Phase 1 - Paving	Rollers	2	8.00	80	0.38
Phase 1 - Demo	Rubber Tired Dozers	2	8.00	247	0.40
Phase 2 - Total Demo	Rubber Tired Dozers	2	8.00	247	0.40
Phase 2 - Turf Installation	Rubber Tired Dozers	3	8.00	247	0.40

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
Phase 3 - Painting	1	22.00	0.00	0.00	8.30	6.40	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 - Turf Installation	12	109.00	42.00	0.00	8.30	6.40	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 - Demo	6	15.00	0.00	0.00	8.30	6.40	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 - Total Grading	6	15.00	0.00	0.00	8.30	6.40	20.00	LD_Mix	HDT_Mix	HHDT
Phase 3 - Construction	6	15.00	0.00	0.00	8.30	6.40	20.00	LD_Mix	HDT_Mix	HHDT
Phase 1 - Paving	6	15.00	0.00	0.00	8.30	6.40	20.00	LD_Mix	HDT_Mix	HHDT
Phase 2 - Total Demo	6	15.00	0.00	0.00	8.30	6.40	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Phase 2 - Total Demo - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0163	0.0000	0.0163	2.4700e-003	0.0000	2.4700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0008	34.0008	9.5700e-003	0.0000	34.2400
Total	**0.0317**	**0.3144**	**0.2157**	**3.9000e-004**	**0.0163**	**0.0155**	**0.0318**	**2.4700e-003**	**0.0144**	**0.0169**	**0.0000**	**34.0008**	**34.0008**	**9.5700e-003**	**0.0000**	**34.2400**

3.2 Phase 2 - Total Demo - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	3.6000e-004	3.2200e-003	1.0000e-005	9.3000e-004	1.0000e-005	9.3000e-004	2.5000e-004	1.0000e-005	2.5000e-004	0.0000	0.7310	0.7310	2.0000e-005	0.0000	0.7315
Total	**4.5000e-004**	**3.6000e-004**	**3.2200e-003**	**1.0000e-005**	**9.3000e-004**	**1.0000e-005**	**9.3000e-004**	**2.5000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.7310**	**0.7310**	**2.0000e-005**	**0.0000**	**0.7315**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0163	0.0000	0.0163	2.4700e-003	0.0000	2.4700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0317	0.3144	0.2157	3.9000e-004		0.0155	0.0155		0.0144	0.0144	0.0000	34.0007	34.0007	9.5700e-003	0.0000	34.2400
Total	**0.0317**	**0.3144**	**0.2157**	**3.9000e-004**	**0.0163**	**0.0155**	**0.0318**	**2.4700e-003**	**0.0144**	**0.0169**	**0.0000**	**34.0007**	**34.0007**	**9.5700e-003**	**0.0000**	**34.2400**

3.2 Phase 2 - Total Demo - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	3.6000e-004	3.2200e-003	1.0000e-005	9.3000e-004	1.0000e-005	9.3000e-004	2.5000e-004	1.0000e-005	2.5000e-004	0.0000	0.7310	0.7310	2.0000e-005	0.0000	0.7315
Total	**4.5000e-004**	**3.6000e-004**	**3.2200e-003**	**1.0000e-005**	**9.3000e-004**	**1.0000e-005**	**9.3000e-004**	**2.5000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**0.7310**	**0.7310**	**2.0000e-005**	**0.0000**	**0.7315**

3.3 Phase 1 - Demo - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.6000e-004	0.0000	3.6000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0633	0.6288	0.4313	7.8000e-004		0.0310	0.0310		0.0288	0.0288	0.0000	68.0016	68.0016	0.0191	0.0000	68.4801
Total	**0.0633**	**0.6288**	**0.4313**	**7.8000e-004**	**3.6000e-004**	**0.0310**	**0.0314**	**6.0000e-005**	**0.0288**	**0.0289**	**0.0000**	**68.0016**	**68.0016**	**0.0191**	**0.0000**	**68.4801**

3.3 Phase 1 - Demo - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	7.2000e-004	6.4400e-003	2.0000e-005	1.8500e-003	1.0000e-005	1.8600e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.4619	1.4619	5.0000e-005	0.0000	1.4631
Total	**8.9000e-004**	**7.2000e-004**	**6.4400e-003**	**2.0000e-005**	**1.8500e-003**	**1.0000e-005**	**1.8600e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.4619**	**1.4619**	**5.0000e-005**	**0.0000**	**1.4631**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.6000e-004	0.0000	3.6000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0633	0.6288	0.4313	7.8000e-004		0.0310	0.0310		0.0288	0.0288	0.0000	68.0015	68.0015	0.0191	0.0000	68.4800
Total	**0.0633**	**0.6288**	**0.4313**	**7.8000e-004**	**3.6000e-004**	**0.0310**	**0.0314**	**6.0000e-005**	**0.0288**	**0.0289**	**0.0000**	**68.0015**	**68.0015**	**0.0191**	**0.0000**	**68.4800**

3.3 Phase 1 - Demo - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	7.2000e-004	6.4400e-003	2.0000e-005	1.8500e-003	1.0000e-005	1.8600e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.4619	1.4619	5.0000e-005	0.0000	1.4631
Total	**8.9000e-004**	**7.2000e-004**	**6.4400e-003**	**2.0000e-005**	**1.8500e-003**	**1.0000e-005**	**1.8600e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.4619**	**1.4619**	**5.0000e-005**	**0.0000**	**1.4631**

3.4 Phase 1 - Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0251	0.2584	0.2931	4.6000e-004		0.0136	0.0136		0.0125	0.0125	0.0000	40.0470	40.0470	0.0130	0.0000	40.3708
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0251**	**0.2584**	**0.2931**	**4.6000e-004**		**0.0136**	**0.0136**		**0.0125**	**0.0125**	**0.0000**	**40.0470**	**40.0470**	**0.0130**	**0.0000**	**40.3708**

3.4 Phase 1 - Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	7.2000e-004	6.4400e-003	2.0000e-005	1.8500e-003	1.0000e-005	1.8600e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.4619	1.4619	5.0000e-005	0.0000	1.4631
Total	**8.9000e-004**	**7.2000e-004**	**6.4400e-003**	**2.0000e-005**	**1.8500e-003**	**1.0000e-005**	**1.8600e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.4619**	**1.4619**	**5.0000e-005**	**0.0000**	**1.4631**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0251	0.2584	0.2931	4.6000e-004		0.0136	0.0136		0.0125	0.0125	0.0000	40.0469	40.0469	0.0130	0.0000	40.3707
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0251**	**0.2584**	**0.2931**	**4.6000e-004**		**0.0136**	**0.0136**		**0.0125**	**0.0125**	**0.0000**	**40.0469**	**40.0469**	**0.0130**	**0.0000**	**40.3707**

3.4 Phase 1 - Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.9000e-004	7.2000e-004	6.4400e-003	2.0000e-005	1.8500e-003	1.0000e-005	1.8600e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.4619	1.4619	5.0000e-005	0.0000	1.4631
Total	**8.9000e-004**	**7.2000e-004**	**6.4400e-003**	**2.0000e-005**	**1.8500e-003**	**1.0000e-005**	**1.8600e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.4619**	**1.4619**	**5.0000e-005**	**0.0000**	**1.4631**

3.5 Phase 2 - Total Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1157	0.0000	0.1157	0.0551	0.0000	0.0551	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0367	0.3958	0.2537	4.7000e-004		0.0186	0.0186		0.0171	0.0171	0.0000	41.6859	41.6859	0.0135	0.0000	42.0230
Total	**0.0367**	**0.3958**	**0.2537**	**4.7000e-004**	**0.1157**	**0.0186**	**0.1343**	**0.0551**	**0.0171**	**0.0722**	**0.0000**	**41.6859**	**41.6859**	**0.0135**	**0.0000**	**42.0230**

3.5 Phase 2 - Total Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1000e-004	5.8000e-004	5.1500e-003	1.0000e-005	1.4800e-003	1.0000e-005	1.4900e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.1695	1.1695	4.0000e-005	0.0000	1.1705
Total	**7.1000e-004**	**5.8000e-004**	**5.1500e-003**	**1.0000e-005**	**1.4800e-003**	**1.0000e-005**	**1.4900e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.1695**	**1.1695**	**4.0000e-005**	**0.0000**	**1.1705**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1157	0.0000	0.1157	0.0551	0.0000	0.0551	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0367	0.3958	0.2537	4.7000e-004		0.0186	0.0186		0.0171	0.0171	0.0000	41.6859	41.6859	0.0135	0.0000	42.0229
Total	**0.0367**	**0.3958**	**0.2537**	**4.7000e-004**	**0.1157**	**0.0186**	**0.1343**	**0.0551**	**0.0171**	**0.0722**	**0.0000**	**41.6859**	**41.6859**	**0.0135**	**0.0000**	**42.0229**

3.5 Phase 2 - Total Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1000e-004	5.8000e-004	5.1500e-003	1.0000e-005	1.4800e-003	1.0000e-005	1.4900e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.1695	1.1695	4.0000e-005	0.0000	1.1705
Total	**7.1000e-004**	**5.8000e-004**	**5.1500e-003**	**1.0000e-005**	**1.4800e-003**	**1.0000e-005**	**1.4900e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.1695**	**1.1695**	**4.0000e-005**	**0.0000**	**1.1705**

3.5 Phase 2 - Total Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1338	0.0000	0.1338	0.0650	0.0000	0.0650	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0370	0.3963	0.2902	5.6000e-004		0.0179	0.0179		0.0165	0.0165	0.0000	49.5041	49.5041	0.0160	0.0000	49.9043
Total	**0.0370**	**0.3963**	**0.2902**	**5.6000e-004**	**0.1338**	**0.0179**	**0.1516**	**0.0650**	**0.0165**	**0.0815**	**0.0000**	**49.5041**	**49.5041**	**0.0160**	**0.0000**	**49.9043**

3.5 Phase 2 - Total Grading - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	6.2000e-004	5.5700e-003	1.0000e-005	1.7600e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.3393	1.3393	4.0000e-005	0.0000	1.3403
Total	**7.9000e-004**	**6.2000e-004**	**5.5700e-003**	**1.0000e-005**	**1.7600e-003**	**1.0000e-005**	**1.7700e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.3393**	**1.3393**	**4.0000e-005**	**0.0000**	**1.3403**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1338	0.0000	0.1338	0.0650	0.0000	0.0650	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0370	0.3963	0.2902	5.6000e-004		0.0179	0.0179		0.0165	0.0165	0.0000	49.5040	49.5040	0.0160	0.0000	49.9043
Total	**0.0370**	**0.3963**	**0.2902**	**5.6000e-004**	**0.1338**	**0.0179**	**0.1516**	**0.0650**	**0.0165**	**0.0815**	**0.0000**	**49.5040**	**49.5040**	**0.0160**	**0.0000**	**49.9043**

3.5 Phase 2 - Total Grading - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	6.2000e-004	5.5700e-003	1.0000e-005	1.7600e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.3393	1.3393	4.0000e-005	0.0000	1.3403
Total	**7.9000e-004**	**6.2000e-004**	**5.5700e-003**	**1.0000e-005**	**1.7600e-003**	**1.0000e-005**	**1.7700e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.3393**	**1.3393**	**4.0000e-005**	**0.0000**	**1.3403**

3.6 Phase 2 - Turf Installation - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6323	0.0000	0.6323	0.3476	0.0000	0.3476	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1476	1.4699	0.9488	1.8400e-003		0.0721	0.0721		0.0670	0.0670	0.0000	159.8826	159.8826	0.0449	0.0000	161.0053
Total	**0.1476**	**1.4699**	**0.9488**	**1.8400e-003**	**0.6323**	**0.0721**	**0.7045**	**0.3476**	**0.0670**	**0.4145**	**0.0000**	**159.8826**	**159.8826**	**0.0449**	**0.0000**	**161.0053**

3.6 Phase 2 - Turf Installation - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.5000e-003	0.1418	0.0468	3.4000e-004	8.5500e-003	3.9000e-004	8.9400e-003	2.4700e-003	3.7000e-004	2.8400e-003	0.0000	33.7183	33.7183	2.6200e-003	0.0000	33.7838
Worker	0.0106	8.2300e-003	0.0745	2.0000e-004	0.0236	1.4000e-004	0.0237	6.2600e-003	1.3000e-004	6.3900e-003	0.0000	17.9278	17.9278	5.2000e-004	0.0000	17.9407
Total	**0.0151**	**0.1501**	**0.1213**	**5.4000e-004**	**0.0321**	**5.3000e-004**	**0.0327**	**8.7300e-003**	**5.0000e-004**	**9.2300e-003**	**0.0000**	**51.6460**	**51.6460**	**3.1400e-003**	**0.0000**	**51.7245**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.6323	0.0000	0.6323	0.3476	0.0000	0.3476	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1476	1.4699	0.9488	1.8400e-003		0.0721	0.0721		0.0670	0.0670	0.0000	159.8824	159.8824	0.0449	0.0000	161.0051
Total	**0.1476**	**1.4699**	**0.9488**	**1.8400e-003**	**0.6323**	**0.0721**	**0.7045**	**0.3476**	**0.0670**	**0.4145**	**0.0000**	**159.8824**	**159.8824**	**0.0449**	**0.0000**	**161.0051**

3.6 Phase 2 - Turf Installation - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.5000e-003	0.1418	0.0468	3.4000e-004	8.5500e-003	3.9000e-004	8.9400e-003	2.4700e-003	3.7000e-004	2.8400e-003	0.0000	33.7183	33.7183	2.6200e-003	0.0000	33.7838
Worker	0.0106	8.2300e-003	0.0745	2.0000e-004	0.0236	1.4000e-004	0.0237	6.2600e-003	1.3000e-004	6.3900e-003	0.0000	17.9278	17.9278	5.2000e-004	0.0000	17.9407
Total	**0.0151**	**0.1501**	**0.1213**	**5.4000e-004**	**0.0321**	**5.3000e-004**	**0.0327**	**8.7300e-003**	**5.0000e-004**	**9.2300e-003**	**0.0000**	**51.6460**	**51.6460**	**3.1400e-003**	**0.0000**	**51.7245**

3.7 Phase 3 - Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0838	0.8455	1.1081	1.7300e-003		0.0432	0.0432		0.0397	0.0397	0.0000	152.2094	152.2094	0.0492	0.0000	153.4401
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0838**	**0.8455**	**1.1081**	**1.7300e-003**		**0.0432**	**0.0432**		**0.0397**	**0.0397**	**0.0000**	**152.2094**	**152.2094**	**0.0492**	**0.0000**	**153.4401**

3.7 Phase 3 - Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1600e-003	2.4600e-003	0.0223	6.0000e-005	7.0400e-003	4.0000e-005	7.0800e-003	1.8700e-003	4.0000e-005	1.9100e-003	0.0000	5.3572	5.3572	1.5000e-004	0.0000	5.3610
Total	**3.1600e-003**	**2.4600e-003**	**0.0223**	**6.0000e-005**	**7.0400e-003**	**4.0000e-005**	**7.0800e-003**	**1.8700e-003**	**4.0000e-005**	**1.9100e-003**	**0.0000**	**5.3572**	**5.3572**	**1.5000e-004**	**0.0000**	**5.3610**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0838	0.8455	1.1081	1.7300e-003		0.0432	0.0432		0.0397	0.0397	0.0000	152.2093	152.2093	0.0492	0.0000	153.4399
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0838**	**0.8455**	**1.1081**	**1.7300e-003**		**0.0432**	**0.0432**		**0.0397**	**0.0397**	**0.0000**	**152.2093**	**152.2093**	**0.0492**	**0.0000**	**153.4399**

3.7 Phase 3 - Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.1600e-003	2.4600e-003	0.0223	6.0000e-005	7.0400e-003	4.0000e-005	7.0800e-003	1.8700e-003	4.0000e-005	1.9100e-003	0.0000	5.3572	5.3572	1.5000e-004	0.0000	5.3610
Total	**3.1600e-003**	**2.4600e-003**	**0.0223**	**6.0000e-005**	**7.0400e-003**	**4.0000e-005**	**7.0800e-003**	**1.8700e-003**	**4.0000e-005**	**1.9100e-003**	**0.0000**	**5.3572**	**5.3572**	**1.5000e-004**	**0.0000**	**5.3610**

3.7 Phase 3 - Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0558	0.5504	0.7876	1.2300e-003		0.0276	0.0276		0.0254	0.0254	0.0000	108.1451	108.1451	0.0350	0.0000	109.0195
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0558**	**0.5504**	**0.7876**	**1.2300e-003**		**0.0276**	**0.0276**		**0.0254**	**0.0254**	**0.0000**	**108.1451**	**108.1451**	**0.0350**	**0.0000**	**109.0195**

3.7 Phase 3 - Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-003	1.5700e-003	0.0144	4.0000e-005	5.0000e-003	3.0000e-005	5.0300e-003	1.3300e-003	3.0000e-005	1.3600e-003	0.0000	3.6642	3.6642	1.0000e-004	0.0000	3.6666
Total	**2.1000e-003**	**1.5700e-003**	**0.0144**	**4.0000e-005**	**5.0000e-003**	**3.0000e-005**	**5.0300e-003**	**1.3300e-003**	**3.0000e-005**	**1.3600e-003**	**0.0000**	**3.6642**	**3.6642**	**1.0000e-004**	**0.0000**	**3.6666**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0558	0.5504	0.7876	1.2300e-003		0.0276	0.0276		0.0254	0.0254	0.0000	108.1450	108.1450	0.0350	0.0000	109.0194
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0558**	**0.5504**	**0.7876**	**1.2300e-003**		**0.0276**	**0.0276**		**0.0254**	**0.0254**	**0.0000**	**108.1450**	**108.1450**	**0.0350**	**0.0000**	**109.0194**

3.7 Phase 3 - Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-003	1.5700e-003	0.0144	4.0000e-005	5.0000e-003	3.0000e-005	5.0300e-003	1.3300e-003	3.0000e-005	1.3600e-003	0.0000	3.6642	3.6642	1.0000e-004	0.0000	3.6666
Total	**2.1000e-003**	**1.5700e-003**	**0.0144**	**4.0000e-005**	**5.0000e-003**	**3.0000e-005**	**5.0300e-003**	**1.3300e-003**	**3.0000e-005**	**1.3600e-003**	**0.0000**	**3.6642**	**3.6642**	**1.0000e-004**	**0.0000**	**3.6666**

3.8 Phase 3 - Painting - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0145					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8300e-003	0.0261	0.0362	6.0000e-005		1.4200e-003	1.4200e-003		1.4200e-003	1.4200e-003	0.0000	5.1065	5.1065	3.1000e-004	0.0000	5.1142
Total	**0.0184**	**0.0261**	**0.0362**	**6.0000e-005**		**1.4200e-003**	**1.4200e-003**		**1.4200e-003**	**1.4200e-003**	**0.0000**	**5.1065**	**5.1065**	**3.1000e-004**	**0.0000**	**5.1142**

3.8 Phase 3 - Painting - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1400e-003	8.5000e-004	7.8400e-003	2.0000e-005	2.7200e-003	2.0000e-005	2.7300e-003	7.2000e-004	1.0000e-005	7.4000e-004	0.0000	1.9904	1.9904	5.0000e-005	0.0000	1.9918
Total	**1.1400e-003**	**8.5000e-004**	**7.8400e-003**	**2.0000e-005**	**2.7200e-003**	**2.0000e-005**	**2.7300e-003**	**7.2000e-004**	**1.0000e-005**	**7.4000e-004**	**0.0000**	**1.9904**	**1.9904**	**5.0000e-005**	**0.0000**	**1.9918**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0145					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8300e-003	0.0261	0.0362	6.0000e-005		1.4200e-003	1.4200e-003		1.4200e-003	1.4200e-003	0.0000	5.1065	5.1065	3.1000e-004	0.0000	5.1141
Total	**0.0184**	**0.0261**	**0.0362**	**6.0000e-005**		**1.4200e-003**	**1.4200e-003**		**1.4200e-003**	**1.4200e-003**	**0.0000**	**5.1065**	**5.1065**	**3.1000e-004**	**0.0000**	**5.1141**

3.8 Phase 3 - Painting - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1400e-003	8.5000e-004	7.8400e-003	2.0000e-005	2.7200e-003	2.0000e-005	2.7300e-003	7.2000e-004	1.0000e-005	7.4000e-004	0.0000	1.9904	1.9904	5.0000e-005	0.0000	1.9918
Total	**1.1400e-003**	**8.5000e-004**	**7.8400e-003**	**2.0000e-005**	**2.7200e-003**	**2.0000e-005**	**2.7300e-003**	**7.2000e-004**	**1.0000e-005**	**7.4000e-004**	**0.0000**	**1.9904**	**1.9904**	**5.0000e-005**	**0.0000**	**1.9918**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0804	0.2607	0.6654	1.6200e-003	0.1506	1.4700e-003	0.1521	0.0404	1.3700e-003	0.0418	0.0000	149.3359	149.3359	8.0700e-003	0.0000	149.5378
Unmitigated	0.0841	0.2847	0.7546	1.9700e-003	0.1883	1.7500e-003	0.1900	0.0505	1.6300e-003	0.0522	0.0000	181.8805	181.8805	9.2900e-003	0.0000	182.1127

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	8.90	107.15	78.85	52,870	42,309
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Recreational Swimming Pool	402.86	108.40	162.00	443,738	355,101
Total	411.77	215.55	240.85	496,608	397,410

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
City Park	6.60	5.50	6.40	33.00	48.00	19.00	66	28	6
Other Non-Asphalt Surfaces	6.60	5.50	6.40	0.00	0.00	0.00	0	0	0
Recreational Swimming Pool	6.60	5.50	6.40	33.00	48.00	19.00	52	39	9

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.572071	0.027190	0.206810	0.117824	0.018361	0.005136	0.017629	0.020081	0.002790	0.002084	0.006580	0.002569	0.000873
Other Non-Asphalt Surfaces	0.572071	0.027190	0.206810	0.117824	0.018361	0.005136	0.017629	0.020081	0.002790	0.002084	0.006580	0.002569	0.000873
Recreational Swimming Pool	0.572071	0.027190	0.206810	0.117824	0.018361	0.005136	0.017629	0.020081	0.002790	0.002084	0.006580	0.002569	0.000873

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

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

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	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
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
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	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
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
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	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

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	6.1000e-003	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.1000e-004	3.1000e-004	0.0000	0.0000	3.3000e-004
Unmitigated	6.1000e-003	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.1000e-004	3.1000e-004	0.0000	0.0000	3.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.4500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.6300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.1000e-004	3.1000e-004	0.0000	0.0000	3.3000e-004
Total	**6.0900e-003**	**0.0000**	**1.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.1000e-004**	**3.1000e-004**	**0.0000**	**0.0000**	**3.3000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.4500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	4.6300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	1.6000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	3.1000e-004	3.1000e-004	0.0000	0.0000	3.3000e-004
Total	**6.0900e-003**	**0.0000**	**1.6000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3.1000e-004**	**3.1000e-004**	**0.0000**	**0.0000**	**3.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

Use Reclaimed Water

Turf Reduction

Use Water Efficient Landscaping

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	6.6397	1.1200e-003	6.0000e-004	6.8455
Unmitigated	8.2033	1.1900e-003	6.1000e-004	8.4147

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 5.61188	6.2582	2.6000e-004	5.0000e-005	6.2806
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0.704395 / 0.431726	1.9451	9.3000e-004	5.6000e-004	2.1341
Total		**8.2033**	**1.1900e-003**	**6.1000e-004**	**8.4147**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 4.30992	4.8063	2.0000e-004	4.0000e-005	4.8235
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	0.704395 / 0.331565	1.8334	9.2000e-004	5.6000e-004	2.0220
Total		**6.6397**	**1.1200e-003**	**6.0000e-004**	**6.8455**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	14.1834	0.7033	0.0000	31.7662

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.41	0.0851	4.2200e-003	0.0000	0.1907
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool	67.89	14.0983	0.6991	0.0000	31.5755
Total		**14.1834**	**0.7033**	**0.0000**	**31.7662**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park		0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces		0.0000	0.0000	0.0000	0.0000
Recreational Swimming Pool		0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

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

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

	Total CO2	CH4	N2O	CO2e
Category	MT			
Unmitigated	48.1440	0.0000	0.0000	48.1440

11.2 Net New Trees

Species Class

	Number of Trees	Total CO2	CH4	N2O	CO2e
		MT			
Miscellaneous	68	48.1440	0.0000	0.0000	48.1440
Total		**48.1440**	**0.0000**	**0.0000**	**48.1440**



Phase II Environmental Site Assessment Report

Ortega Park

604 East Ortega Street

Santa Barbara, California

prepared on behalf of

City of Santa Barbara

prepared by

Rincon Consultants, Inc.
209 East Victoria Street
Santa Barbara, California

June 13, 2019

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
rinconconsultants.com

Rincon Consultants, Inc.

209 East Victoria Street
Santa Barbara, California 93101

805 319 4092 OFFICE AND FAX

info@rinconconsultants.com
www.rinconconsultants.com

June 13, 2019
Rincon Project Number 18-06506

Paul McCaw
Santa Barbara County Public Health Department
Environmental Health Services Division
2125 South Centerpointe Parkway, Suite 333
Santa Maria, California 93455

Subject: **Phase II Environmental Site Assessment Report – Ortega Park**
604 East Ortega Street, Santa Barbara, California

Dear Mr. McCaw:

On behalf of the City of Santa Barbara, Rincon Consultants, Inc. has prepared this Phase II Environmental Site Assessment Report for the Ortega Park site located at 604 East Ortega Street, Santa Barbara, California. This report summarizes the results and findings of the soil and groundwater sampling performed within the project area.

Please contact us with any questions regarding this report or this project.

Sincerely,
Rincon Consultants, Inc.



Cody Wilgus, MESM, GIT
Associate Environmental Scientist

Walt Hamann, PG, CEG
Vice President, Environmental Services

Table of Contents

Executive Summary 1
Introduction 3
Project History 4
Purpose and Scope 5
Physical Setting 7
Methodology 9
Screening Criteria 12
Results and Discussion 14
Conclusions 19
Recommendations 20
Limitations 21

Figures

Figure 1 Vicinity Map
Figure 2 Site Map
Figure 3 TPH Concentrations in Soil Map
Figure 4 Lead Concentrations in Soil Map
Figure 5 PAH Concentrations in Soil Map

Tables

Table 1 Soil Matrix Analytical Summary – TPH, VOCs, and PCBs
Table 2 Soil Matrix Analytical Summary – Metals
Table 3 Soil Matrix Analytical Summary – PAHs
Table 4 Groundwater Analytical Summary – TPH and VOCs

Appendices

Appendix A Boring Logs
Appendix B Laboratory Analytical Reports
Appendix C Monitoring Well Permits
Appendix D Ortega Park – Master Plan

Appendix E Photo Figure

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Executive Summary

On behalf of the City of Santa Barbara, Rincon Consultants, Inc. (Rincon) has prepared this Phase II Environmental Site Assessment (ESA) Report for the Ortega Park site located at 604 East Ortega Street, Santa Barbara, California (Figure 1, Vicinity Map). It is our understanding that the site was used as a municipal waste dump from at least 1902 until at least 1927. Between 1927 and 1930, the site was developed to its current use as a City park. There are plans to rehabilitate the park with new features such as a skate park and upgraded playing fields. The current assessment was performed to evaluate whether contaminated soil would be encountered during subsurface activities associated with the park rehabilitation.

This Phase II ESA was performed in accordance with the March 22, 2019 Phase II ESA Work Plan prepared by Rincon and the April 1, 2019 approval email from the Santa Barbara County Public Health Department, Environmental Health Services Division (EHS).On April 16, 2019, under the direction of Rincon, Oilfield Environmental and Compliance (OEC) utilized a limited access Geoprobe direct push rig and hand auger to advance 20 borings at the subject property. Five borings were advanced to 10 feet below grade, 14 borings were advanced to 4 feet below grade, and 1 boring met refusal at 1 foot below grade. Two soil matrix samples were collected from each of the 10-foot and 4-foot borings and 1 soil sample was collected from the 1-foot boring. Discoloration and odor were noted at some boring locations. The photo ionization detector (PID) did not detect measureable concentrations of VOCs in any of the borings with the exception of RB3. Groundwater samples were collected from borings HP2 through HP5. Groundwater was not encountered in boring HP1. The groundwater sample collected from HP3 exhibited a sheen and slight hydrocarbon odor.

Soil sample analyses were performed using a tiered approach. Soil samples were analyzed as follows: 30 soil samples were analyzed for Full Range total petroleum hydrocarbons (TPH) by United States Environmental Protection Agency (EPA) Method 8015M, 30 soil samples were analyzed for polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270, 12 soil samples were analyzed for volatile organic compounds (VOCs), including oxygenates, by EPA method 8260B, 5 soil samples were analyzed for polychlorinated biphenyls (PCBs) by EPA Method 8082, and 25 soil samples were analyzed for Title 22 metals by EPA Method 6010B/7471A. Additional total, soluble threshold limit concentration (STLC), and toxicity characteristic leaching procedure (TCLP) analyses for individual metals were selected based on initial results.

Four groundwater samples were analyzed for TPH as diesel (TPHd) and TPH as motor oil (TPHo) by EPA Method 8015M and for VOCs, including TPH as gasoline (TPHg) and oxygenates, by EPA Method 8260B. Soil matrix and groundwater analytical results are compared to EHS investigation levels (ILs).

A summary of the soil analytical results are included on Tables 1 through 3. Constituents were detected at concentrations exceeding EHS ILs in soil matrix samples collected from 12 of the 20 borings advanced at the subject property down to 10 feet below grade. PCBs were not detected in the analyzed soil samples.

TPH was detected at concentrations exceeding the EHS IL of 100 mg/kg in 8 of the 20 borings advanced at the subject property (Figure 3). The highest concentration of TPH was detected in soil sample RB6-4 (soil sample collected at 4 feet below grade from boring RB6) at a concentration of 12,700 mg/kg. The TPH detected in the soil samples was primarily in the diesel and motor oil ranges.

TPH concentrations exceeding EHS ILs were generally detected in the northeastern, eastern, and southern portions of the subject property.

The benzo (a) pyrene (BaP) Toxicity Equivalent (TE) exceeds the EHS IL for BaP of 0.11 mg/kg in 5 of 20 borings advanced at the subject property (Figure 5). Similar to the TPH, the highest concentrations of PAHs were detected in soil sample RB6-4. BaP TE was calculated as 75 mg/kg in soil sample RB6-4. PAH concentrations exceeding EHS ILs were generally detected in soil samples collected from borings located in the north central and northeastern portions of the subject property.

Metals were detected at concentrations exceeding EHS ILs in 12 of the 20 borings advanced at the subject property. Metals exceeding EHS ILs included arsenic, barium, chromium, lead, mercury, thallium and zinc. Lead was detected at concentrations exceeding California Hazardous Waste Thresholds in soil samples collected from 7 borings advanced in the eastern and southern portions of the subject property. Zinc was detected at a concentration exceeding California Hazardous Waste Thresholds in the soil sample collected from boring RB6. TCLP lead was detected in soil sample HP4-10 at a concentration of 4.7 milligrams per liter (mg/L) which is below the Federal Hazardous Waste Threshold of 5 mg/L.

A summary of the groundwater analytical results are included on Table 4. TPH was detected in the 4 groundwater samples at concentrations ranging from 57 micrograms per liter (µg/L) to 3,300 µg/L. TPH detected in groundwater sample HP3 exceeds the EHS IL of 1,000 µg/L. The VOCs benzene and t-butyl alcohol (TBA) were detected at concentrations exceeding EHS ILs in groundwater samples HP3 and HP5. Trichloroethene (TCE) was detected at a concentration of 0.31 µg/L, which is below the EHS IL for TCE in groundwater of 5 micrograms per liter (µg/L).

Lead and zinc were detected in the soil at concentrations exceeding California Hazardous Waste Thresholds. It is recommended that a Soil Management Plan be prepared that describes the proper handling, management, and disposal of impacted soil from the site. The Soil Management Plan should be in place for any subsurface work that is performed in the area of the site where contaminated soil has been detected.

Introduction

On behalf of the City of Santa Barbara, Rincon Consultants, Inc. has prepared this report presenting the findings of the Phase II Environmental Site Assessment (ESA) conducted at Ortega Park, located at 604 East Ortega Street, Santa Barbara, California (Figure 1, Vicinity Map). The subject property is approximately 5.35 acres in size and is identified as Assessor's Parcel Number 031-172-002. Ortega Park is currently developed with a multi-purpose turf field, outdoor basketball courts, a youth softball field, a playground, a small community building, a restroom building, a swimming pool, and a pool house.

It is our understanding that the site was used as a municipal waste dump from at least 1902 until at least 1927. Between 1927 and 1930, the site was developed as a City park. There are plans to rehabilitate the park with new features such as a skate park and upgraded playing fields. This assessment was performed to evaluate whether contaminated soil management would be warranted during subsurface activities associated with the planned site improvements.

This Phase II ESA was performed in accordance March 22, 2019 Phase II ESA Work Plan prepared by Rincon and the April 1, 2019 approval email from the Santa Barbara County Public Health Department, Environmental Health Services Division (EHS).

The following sections describe the purpose and scope of the soil and groundwater assessment, the physical setting, the assessment methodology, findings, and conclusions.

Project History

According to a Request for Proposal from the City of Santa Barbara, the City purchased the site in 1902. The site served as a municipal waste dump for debris disposal resulting from the 1925 earthquake. Between 1927 and 1930, the site was developed as a City park. Debris has been encountered in trenches excavated at the site and EHS investigation records from 1992 to 1993 reference a dump at the site. Rincon is not aware of previous environmental sampling being performed at the site. The City is investigating the feasibility of performing park improvements including installing artificial turf fields, security lighting, park restrooms, and other facilities.

Purpose and Scope

The purpose of this Phase II ESA is to evaluate concentrations of total petroleum hydrocarbons (TPH), metals, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and volatile organic compounds (VOCs) in the soil and concentrations of TPH and VOCs in groundwater at the subject property.

- **Site Health and Safety Plan.** The site health and safety plan was prepared in accordance with California Occupational Safety and Health Administration (Cal/OSHA) requirements (California Code of Regulations [CCR] Title 8 Section 5192).
- **Notifications.** Rincon coordinated with the client to schedule field work. Rincon pre-marked boring locations and contacted Underground Service Alert (USA) at least 72 hours prior to the commencement of subsurface activities.
- **Borings.** On April 16, 2019 a Geoprobe direct push rig and hand auger tools were utilized to advance 20 soil borings at the subject property.
  - 5 borings were advanced to 10 feet below grade.
  - 14 borings were advanced to 4 feet below grade.
  - 1 boring met refusal at 1 foot below grade.

  - Groundwater samples were collected from temporary groundwater wells set at boring locations HP1, HP3, HP4 and HP5.
- **Sample Analysis.** Soil and groundwater samples were transported to Oilfield Environmental and Compliance (OEC) laboratory in Santa Maria, California. Soil samples were analyzed as follows:
  - 30 soil samples were analyzed for Full Range TPH by United States Environmental Protection Agency (EPA) Method 8015M.
  - 30 soil samples were analyzed for PAHs by EPA Method 8270.
  - 12 soil samples were analyzed for VOCs, including oxygenates, by EPA method 8260B.
  - 5 soil samples were analyzed for PCBs by EPA Method 8082.
  - 25 soil samples were analyzed for Title 22 metals by EPA Method 6010B/7471A.
    - 1 additional sample was analyzed for total arsenic by EPA Method 6010B.
    - 1 additional sample was analyzed for total barium by EPA Method 6010B.
      - 1 sample was analyzed for soluble threshold limit concentration (STLC) barium.
    - 2 additional samples were analyzed for total chromium by EPA Method 6010B.
      - 2 samples were analyzed for STLC chromium.
      - 1 sample was analyzed for toxicity characteristic leaching procedure (TCLP) chromium.
    - 31 additional samples were analyzed for total lead by EPA Method 6010B.
      - 8 samples were analyzed for STLC lead.
      - 11 samples were analyzed for TCLP lead.

  - 1 additional sample was analyzed for total mercury by EPA Method 7471A.
    - 1 sample was analyzed for STLC mercury.
  - 3 additional samples were analyzed for total thallium by EPA Method 6010B.
  - 1 additional sample was analyzed for total zinc by EPA Method 6010B.
    - 1 sample was analyzed for STLC zinc.

Groundwater samples were analyzed as follows:

- 4 groundwater samples were analyzed for TPH as diesel (TPHd) and TPH as motor oil (TPHo) by EPA Method 8015M and TPHg and VOCs including oxygenates by EPA 8260B.

- **Waste Disposal.** Soil cuttings and decontamination fluids were properly stored onsite in a labeled Department of Transportation (DOT) 55 gallon drum. The borings were backfilled with bentonite. The drum is pending disposal by a licensed waste disposal contractor.
- **Reporting.** Prepare this report documenting our findings.

Physical Setting

Topography

The current United States Geological Survey (USGS) topographic map (Santa Barbara Quadrangle, 1952, photo revised 1988) indicates that the subject property is situated at an elevation of approximately 40 feet above mean sea level with generally flat topography. Regional topography slopes gently to the south towards the Pacific Ocean.

Geology and Hydrogeology

Site Geology

The site is located on the gently sloping Santa Barbara Coastal Plain, which is comprised of recent-aged alluvium, deposited across raised marine terraces. These alluvial deposits were derived from older sedimentary deposits within the Santa Ynez Mountains north of the site, and overlie the Quaternary aged Santa Barbara Formation. Soil encountered during the current assessment generally consisted of silt with varying amounts of sand and clay.

No active faults have been mapped by Dibblee (1986) beneath the subject property. An active fault is defined by the State of California as one which has had surface displacement within the last 11,000 years (Holocene time on the geologic time scale). Active faults are also classified by historic (within the last 200 years) seismicity, where surface rupture may or may not be evident. The concealed trace of the potentially active Mesa Fault is located approximately 1 mile south-southwest of the subject property.

Regional Groundwater Occurrence

The project site is located within the Santa Barbara Hydrologic sub-area of the South Coast Hydrologic Unit, commonly known as the Santa Barbara Groundwater Basin. The basin is bounded on the southeast by the Pacific Ocean, on the southwest by the Lavigia Fault, on the west by an unnamed fault, and on the north by the Mission Ridge Fault. The Santa Barbara Formation and overlying unconsolidated Holocene alluvium comprise the water bearing zones within this unit. Aquifers within the Santa Barbara Groundwater Basin are used for municipal and domestic water supply. In the site vicinity, the unconsolidated Holocene alluvium aquifer is approximately 200 to 400 feet below grade and the Santa Barbara Formation is located at up to approximately 1,000 feet below grade. It is our understanding that there is a water well located at the subject property. Rincon has not reviewed records for the well.

Records were reviewed on the State Water Resources Control Board's GeoTracker website. GeoTracker records for the R.J. Carroll and Sons Plumbing site located adjacent to the subject property to the southwest indicate that as recently as 2014, groundwater has been encountered at depths ranging from less than 1 foot below grade to approximately 6 feet below grade. Based on information from this and other nearby sites, the local groundwater flow direction in the shallow zone is toward the east, and the regional groundwater flow direction in the shallow zone is toward

the ocean (south to southeast). During the current assessment, groundwater was encountered in the southwest portion of the site at 5 feet below grade.

Methodology

Borings and Sampling

Boring Locations

The boring locations are depicted on Figure 2, Site Map. The locations and depths of the borings were based upon the proposed new park design outlined in *Ortega Park – Alternative Concept B*, drafted by the RRM Design Group and provided to Rincon by the City (Appendix D). The locations of the borings were recorded in the field with a GPS device with sub-meter accuracy. The geographic coordinates of the borings are included on Figure 2.

Drilling and Soil Sampling

On April 16, 2019, under the direction of Rincon, OEC utilized a limited access Geoprobe direct push rig and hand auger to advance 20 borings at the subject property. Five borings were advanced to 10 feet below grade (HP1 through HP5), 14 borings were advanced to 4 feet below grade (RB1 through RB11 and RB13 through RB15), and 1 boring was advanced to refusal at 1 foot below grade (RB12). Initially, the Geoprobe was utilized to advance boring RB12. However, unconsolidated soil driven into the sampler could not be retrieved before falling back into the boring. A hand auger was then utilized to advance the boring. Refusal was met at 1 foot below grade using the hand auger. Two step-outs were attempted with the hand auger and each met refusal at 1 foot below grade. Abundant debris was encountered in each of the hand auger attempts.

Two soil matrix samples were collected from each of the 10-foot borings at depths of approximately 4.5 to 5.0 and 9.5 to 10.0 feet below grade. Two soil matrix samples were collected from each of the 4-foot borings at depths of approximately 1.5 to 2.0 and 3.5 to 4.0 feet below grade. One soil sample was collected at a depth of approximately 0.5-1.0 feet below grade from boring RB12. Soil sample depths were adjusted in the field to collect soil samples from changes in lithology, depths exhibiting field evidence of contamination (including evidence of fill material such as glass, bricks, and other debris), and from the bottom of the boring.

The Geoprobe borings were continuously cored by hydraulically driving a two-inch diameter rod into the ground. The macro-core consisted of a 2-inch diameter tube containing a 4 or 5 foot long acetate sleeve liner. By advancing this sampler into the soil, soil was forced into the opening of the sampling tube and a sample was obtained. Once the sampler was filled, it was retrieved and the acetate liner was removed. The designated sampling section length (6 to 12 inches) was cut and retained for laboratory analysis. The acetate sleeves holding the soil samples were labeled, sealed with Teflon, capped, and stored in a cooler chilled to 4 degrees Celsius. Samples were couriered to a state certified analytical laboratory using chain-of-custody protocol.

Unretained soil recovered near the target sample intervals was used to field screen the soil sample for VOCs and classify the soils. A photoionization detector (PID) was used to field screen the sample. To screen the soil, a small soil volume was placed in a zip lock baggie and allowed to volatilize. After a period of time, the baggie was slightly opened, and the PID probe tip was placed within one-eighth inch of the soil inside the baggie. Prior to testing, the PID was calibrated to an isobutylene standard.

PID data are recorded on the soil boring logs. Observations made in the field were recorded on the log created for each boring. The boring logs include classification of the soil per the Unified Soil Classification System, a description of any discoloration, debris, or odors noted in the soil, and any detection measured by the PID. The boring logs are included as Appendix A.

Soil sample collection was in conformance with the current version of the United States EPA, SW-846 guidance document – *Test Methods for Evaluating Solid Waste.*

Following collection of soil samples, all equipment was washed in a soap solution and double rinsed with tap water. Upon completion of sampling, the boreholes were backfilled with bentonite. Soil cuttings and decontamination water were properly stored onsite in a labeled DOT 55 gallon drum pending disposal.

All sampling was performed under the oversight of a California Professional Geologist.

Groundwater Sampling

Following the completion of soil sampling, temporary groundwater wells were constructed at boring locations HP2 through HP5. The temporary wells were constructed of ¾-inch diameter Schedule 40 PVC piping with 5 feet of 0.010-inch slotted screen. Groundwater was allowed to accumulate in each well and groundwater samples were collected using a disposable tube fitted with a reusable check valve. The reusable check valve was washed in a soap solution and double rinsed with tap water prior to sampling each well. The sampling containers and volume were commensurate with the analytical requirements for the specific analytical procedure performed. The groundwater samples were labeled, sealed, and stored in a cooler chilled to 4 degrees Celsius. The samples were couriered to a state certified laboratory using chain-of-custody protocol.

Laboratory Analysis

Soil Matrix Sample Analysis

The soil matrix samples were transported to OEC laboratory in Santa Maria, California. Soil sample analyses were performed using a tiered approach. Initially, 24 soil samples were analyzed for Full Range TPH by EPA Method 8015M, PAHs by EPA Method 8270, and Title 22 metals by EPA Method 6010B/7471A. Select soil samples were analyzed for VOCs including oxygenates by EPA Method 8260B and PCBs by EPA Method 8082 based on field evidence of contamination. Soil samples collected, but not analyzed, were placed on hold with the analytical laboratory pending results of the scheduled analyses.

Following preliminary analytical results, soil samples that detected a total metal concentration above 10 times the STLC were analyzed for STLC for that metal. Soil samples that detected a total metal concentration above 20 times the STLC were analyzed for TCLP for that metal. Additional analyses for total metals, TPH, and PAHs were selected to further delineate the vertical extent of contamination. Soil samples were analyzed as follows:

- 30 soil samples were analyzed for Full Range TPH by EPA Method 8015M.
- 30 soil samples were analyzed for PAHs by EPA Method 8270.
- 12 soil samples were analyzed for VOCs, including oxygenates, by EPA method 8260B.
- 5 soil samples were analyzed for PCBs by EPA Method 8082.
- 25 soil samples were analyzed for Title 22 metals by EPA Method 6010B/7471A.
    - 1 additional sample was analyzed for total arsenic by EPA Method 6010B.

- 1 additional sample was analyzed for total barium by EPA Method 6010B.
    - 1 sample was analyzed for soluble threshold limit concentration (STLC) barium.
- 2 additional samples were analyzed for total chromium by EPA Method 6010B.
    - 2 samples were analyzed for STLC chromium.
    - 1 sample was analyzed for toxicity characteristic leaching procedure (TCLP) chromium.
- 6 additional samples were analyzed for total lead by EPA Method 6010B.
    - 8 samples were analyzed for STLC lead.
    - 11 samples were analyzed for TCLP lead.
- 1 additional sample was analyzed for total mercury by EPA Method 7471A.
    - 1 sample was analyzed for STLC mercury.
- 3 additional samples were analyzed for total thallium by EPA Method 6010B.
- 1 additional sample was analyzed for total zinc by EPA Method 6010B.
    - 1 sample was analyzed for STLC zinc.

Groundwater Sample Analysis

Four groundwater samples were analyzed for TPHd and TPHo by EPA Method 8015M and for TPHg and VOCs including oxygenates by EPA Method 8260B.

Screening Criteria

The subject property is within the jurisdictional area of the Central Coast Regional Water Quality Control Board (RWQCB). The Central Coast RWQCB regulates groundwater quality in Santa Barbara County. EHS works in conjunction with the Central Coast RWQCB. The goal of EHS is to protect human health, water resources, and the environment from unauthorized releases by providing oversight in accordance with the California Health and Safety Code, California Fire Code, and California Code of Regulations (Leaking Underground Fuel Tank & Site Mitigation Unit Manual, January 2007).

Constituent concentrations detected in the soil samples are compared to EHS investigation levels. In our experience, EHS commonly sets ILs for contaminants in soil at the San Francisco Bay RWQCB's Environmental Screening Levels (ESLs). The screening levels are not necessarily cleanup goals.

Soil Matrix

PAHs, VOCs, and PCBs

EHS ILs for PAHs, VOCs, and PCBs are set at Tier 1 ESLs. Tier 1 ESLs are considered to be conservative concentration thresholds based on a generic site model designed for use at most sites. ESLs were updated in January 2019.

TPH

The EHS IL for TPH is for the aggregate of all carbon chains. For sites where the detected concentrations of TPH in soil are less than 50 feet above groundwater, the EHS IL for TPH in soil is 100 milligrams per kilogram (mg/kg). EHS distinguishes the type of hydrocarbons by the following carbon ranges: gasoline range organics are in the carbon 4 (C_4) to C_{12} range, diesel range organics are in the C_{13} to C_{22} range, and oil range organics are in the C_{23} to C_{40} range. The analytical laboratory (OEC) used for the current assessment distinguishes the type of hydrocarbons by the same carbon ranges as EHS.

Metals

EHS ILs for metals are set at the Tier 1 ESL, the upper level of typical background concentrations, or a solid concentration equal to 10 times the STLC value. Typical background concentrations for metals in soil in California are as referenced in Kearny Foundation of Soil Science, Division of Agriculture and Natural Resources, University of California, March 1996.

Groundwater

TPH

The EHS IL for TPH in groundwater is 1 milligram per liter (mg/L) or 1,000 micrograms per liter (µg/L).

VOCs

VOC concentrations in the groundwater are compared to Maximum Contaminant Levels (MCLs) for drinking water established by the United States EPA and the California EPA (currently through the State Water Resources Control Board, 2012).

Results

Soil Matrix

Organic odor similar to decomposing vegetation was noted in the soil matrix sample collected at 10 feet below grade from boring HP3. Possible grey and black staining was encountered in borings RB4, RB5, RB6, RB9, and RB10. Debris, including glass, metal, and building materials such as brick, was noted in borings HP2, RB4, RB6, RB7, RB9, RB10, RB11, and RB12. Soil encountered in the borings generally consisted of silt with varying amounts of sand and clay. Field screening with the PID did not detect measureable concentrations of VOCs in the borings with the exception of RB3. Soil screened in boring RB3 at 2 and 4 feet below grade detected VOCs at concentrations of 4 parts per million by volume (ppmv) and 10 ppmv, respectively.

A summary of the soil analytical results are included on Tables 1 through 3. Soil matrix laboratory analytical reports are included in Appendix B.

Full Range TPH

Full Range TPH is the aggregate of all carbon chains. As summarized on Table 1, Full Range TPH was detected in 21 of the 30 analyzed soil samples at concentrations ranging from 0.32 mg/kg to 12,700 mg/kg. Full Range TPH was detected in 12 soil samples at concentrations exceeding the EHS IL of 100 mg/kg. The highest concentration of Full Range TPH was detected in the soil sample collected at 4 feet below grade from boring RB6.

The following describes the breakdown of the aggregate TPH concentrations to TPHg, TPHd, and TPHo.

TPHg

TPHg was detected in 2 of the analyzed soil samples at concentrations of 0.32 mg/kg and 3.4 mg/kg, below the EHS IL of 100 mg/kg.

TPHd

TPHd was detected in 12 of the analyzed soil samples at concentrations ranging from 9.6 mg/kg to 5,800 mg/kg. TPHd was detected in 6 soil samples at concentrations exceeding the EHS IL of 100 mg/kg. The highest concentration of TPHd was detected in the soil sample collected at 4 feet below grade from boring RB6. TPHd detected at this location exceeds the construction worker ESL for TPHd in soil of 1,100 mg/kg and the commercial/industrial ESL for TPHd in soil of 1,200 mg/kg.

TPHo

TPHo was detected in 17 of the analyzed soil samples at concentrations ranging from 40 mg/kg to 8,000 mg/kg. TPHo was detected in 11 soil samples at concentrations exceeding the EHS IL of 100 mg/kg. The highest concentration of TPHo was detected in the soil sample collected at 4 feet below grade from boring RB4. TPHo was detected in 5 soil samples at concentrations exceeding the Tier 1

ESL for TPHo in soil of 1,600 mg/kg. None of the TPHo detections exceed the commercial/industrial or construction worker ESLs for TPHo in soil.

Metals

As summarized on Table 2, varying concentrations of metals were detected in the soil matrix samples. Arsenic, barium, chromium, lead, mercury, thallium, and zinc were detected at concentrations exceeding EHS ILs.

The following describes concentrations of individual metals that exceed screening criteria.

Arsenic

Arsenic was detected in the 26 analyzed soil samples at concentrations ranging from 2 mg/kg to 20 mg/kg and in 1 sample at a concentration exceeding the EHS IL for arsenic in the soil of 11 mg/kg. Arsenic was detected in the soil sample collected at 4 feet below grade from boring RB7 at a concentration of 20 mg/kg.

Barium

Barium was detected in the 26 analyzed soil samples at concentrations ranging from 25 mg/kg to 1,200 mg/kg and in 1 sample at a concentration exceeding the EHS IL for barium in soil of 1,000 mg/kg. Barium was detected in the soil sample collected at 4 feet below grade from boring RB7 at a concentration of 1,200 mg/kg. This sample was analyzed for STLC barium. STLC barium was not detected above the STLC of 100 mg/L.

Chromium

Chromium was detected in the 27 analyzed soil samples at concentrations ranging from 11 to 120 mg/kg and in 2 samples at concentrations exceeding the EHS IL for chromium in soil of 50 mg/kg. Chromium was detected in the soil samples collected at 4 feet below grade from borings RB5 and RB7 at concentrations of 120 mg/kg and 72 mg/kg, respectively. Both samples were analyzed for STLC chromium and the sample collected from RB5 was analyzed for TCLP chromium. STLC and TCLP chromium were not detected above the STLC and TCLP of 5 mg/L.

Lead

Lead was detected in the 31 analyzed soil samples at concentrations ranging from 4.2 mg/kg to 4,600 mg/kg. Lead was detected in 12 soil samples at concentrations exceeding the ESH IL for lead in soil of 50 mg/kg. Soil samples collected from borings RB5, RB6, RB7, RB10, RB12, and HP4 detected lead at concentrations exceeding the construction worker ESL for lead in soil of 160 mg/kg. Soil samples collected from borings RB5, RB7, RB10, and HP4 detected lead at concentrations exceeding the commercial/industrial ESL for lead in soil of 320 mg/kg. Lead detected in soil samples collected at 4 feet below grade from borings RB5 and RB10 exceed the total threshold limit concentration (TTLC) for lead of 1,000 mg/kg.

Eight soil samples were analyzed for STLC lead. STLC lead was detected in 6 of the analyzed samples at concentrations exceeding the STLC threshold for lead of 5 mg/L. Eleven soil samples were analyzed for TCLP lead. TCLP lead was not detected above the TCLP threshold for lead of 5 mg/L. TCLP lead was detected in soil sample HP4-10 at a concentration of 4.7 milligrams per liter (mg/L) which is below the Federal Hazardous Waste Threshold of 5 mg/L.

Mercury

Mercury was detected 24 of the 26 analyzed soil samples at concentrations ranging from 0.0099 mg/kg to 2.1 mg/kg and in 1 sample at a concentration exceeding the EHS IL for mercury in soil of 2 mg/kg. Mercury was detected in the soil sample collected at 4 feet below grade from boring RB5 at a concentration of 2.1 mg/kg. This sample was analyzed for STLC mercury. STLC mercury was not detected above the STLC of 0.2 mg/L.

Thallium

Thallium was detected in 21 of the 28 analyzed soil samples at concentrations ranging from 0.46 mg/kg to 2.8 mg/kg in 13 samples at concentrations exceeding the EHS IL for thallium in soil of 2 mg/kg. The highest concentration of thallium was detected in boring HP5. Thallium was not detected at concentrations exceeding the construction worker ESL for thallium in soil of 3.5 mg/kg or the commercial/industrial ESL for thallium in soil of 12 mg/kg.

Zinc

Zinc was detected in the 26 analyzed soil samples at concentrations ranging from 11 mg/kg to 3,300 mg/kg and in 1 soil sample at a concentration exceeding the EHS IL for zinc in soil of 2,500 mg/kg. Zinc was detected in the soil sample collected at 4 feet below grade from boring RB6 at a concentration of 3,300 mg/kg. This sample was analyzed for STLC zinc. STLC zinc was detected at a concentration of 330 mg/L, exceeding the STLC of 250 mg/L.

PAHs

As summarized on Table 3, varying concentrations of PAHs were detected in the soil matrix samples. Benz (a) anthracene, benzo (b) fluoranthene, benzo (a) pyrene (BaP), dibenz (a,h) anthracene, indeno (1,2,3-cd) pyrene, and naphthalene were detected at concentrations exceeding EHS ILs. The highest concentrations of PAHs were detected in the soil sample collected at 4 feet below grade from boring RB6.

BaP Toxicity Equivalent Factors

The *Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons* (EPA/600/R-93/089, July 1993) recommends that a toxicity equivalent factor (TEF) be used to convert concentrations of carcinogenic PAHs to a BaP Toxicity Equivalent (TE) concentration when evaluating the cancer risks posed by exposure to these substances. The TEFs and the TEs for each soil sample are included in Table 3. Calculated BaP TEs are compared to screening levels for BaP.

The calculated BaP TEs range from not detected to 75 mg/kg. The calculated BaP TE exceeds the EHS IL for BaP in soil of 0.11 mg/kg in 7 of the 30 analyzed soil samples. BaP TEs for soil samples collected at 4 feet below grade from borings RB5 and RB6 were calculated to be 25 mg/kg and 75 mg/kg, respectively, exceeding the commercial/industrial ESL for BaP in soil of 20 mg/kg. None of the calculated BaP TEs exceed the construction worker ESL for BaP in soil of 110 mg/kg.

VOCs

The VOC 4-isopropyl toluene was detected in the soil sample collected at 3 feet below grade from boring RB3 at a concentration of 0.12 mg/kg. Screening levels have not been established for 4-isopropyl toluene in the soil. VOCs were not detected above the method detection limit in any of the other analyzed soil samples. Results for VOCs in soil samples are summarized on Table 1.

PCBs

As summarized on Table 1, PCBs were not detected above the method detection limit in the 5 analyzed soil samples.

Groundwater

Groundwater samples were collected from borings HP2 through HP5. Groundwater was not encountered in boring HP1. The groundwater sample collected from HP3 exhibited a sheen and slight hydrocarbon odor. A summary of the groundwater analytical results are included on Table 4. The groundwater laboratory analytical report is included in Appendix B.

Full Range TPH

As summarized on Table 4, Full Range TPH was detected in the 4 groundwater samples at concentrations ranging from 57 µg/L to 3,300 µg/L. Full Range TPH detected in groundwater sample HP3 exceeds the EHS IL of 1,000 µg/L.

The following describes the breakdown of the aggregate TPH concentrations to TPHg, TPHd, and TPHo.

TPHg

TPHg was not detected above the method detection limit in any of the groundwater samples. It should be noted that groundwater samples HP3 and HP4 reported an elevated method detection limit of 200 µg/L, due to sample dilutions. The EHS IL for TPHg in groundwater is 1,000 µg/L.

TPHd

TPHd was detected in 3 of the 4 groundwater samples at concentrations ranging from 81 µg/L to 1,300 µg/L. TPHd detected in groundwater sample HP3 exceeds the EHS IL of 1,000 µg/L.

TPHo

TPHo was detected in the 4 groundwater samples at concentrations ranging from 57 µg/L to 2,000 µg/L. TPHo detected in groundwater sample HP3 exceeds the EHS IL of 1,000 µg/L.

VOCs

As summarized on Table 4, the VOCs benzene, t-butyl alcohol (TBA), toluene, and trichloroethene (TCE) were detected in the groundwater samples. Benzene was detected in groundwater sample HP5 at a concentration of 1.0 µg/L, equal to the MCL of 1 µg/L. TBA does not have an established MCL. VOCs were not detected above method detection limits in groundwater sample HP4.

Discussion

Distribution of Contaminants in Soil

Metals and TPH were generally detected at concentrations exceeding EHS ILs in soil samples collected from borings advanced in the eastern half of the subject property. PAHs were detected at concentrations exceeding EHS ILs in soil samples collected from borings advanced in the northern half of the subject property.

Metals and PAH concentrations increased with depth at some locations. This could be the result of cover material over the dumped materials. It is unknown if the entire site was used for dumping or only the eastern portion of the site.

Hazardous Waste Characterization

As depicted on Figure 4, lead concentrations exceeding California (non-RCRA) Hazardous Waste Thresholds were detected in borings RB5, RB6, RB7, RB9, RB10, RB12, and HP4, advanced in the eastern half of the subject property. Boring RB6 also detected zinc at a concentration exceeding the California Hazardous Waste Threshold for zinc in soil.

Distribution of Contaminants in Groundwater

The highest contaminant concentrations detected in the groundwater consisted of TPH in the diesel and motor oil ranges and TBA in the groundwater sample collected from boring HP3. Boring HP3 was advanced between the existing locations of the pool and softball diamond in the southern portion of the site. Low concentrations of TPH were detected in the soil samples collected from HP3.

Groundwater was not encountered, and groundwater samples were not collected from borings advanced in the northeastern portion of the site in which the highest contaminant concentrations were detected in the soil.

Conclusions

Contaminants in the soil were generally detected in the eastern portion of the site. Metals and PAH concentrations increased with depth at some locations. This could be the result of cover material over the dumped materials. It is unknown if the entire site was used for dumping or only the eastern portion of the site. Constituents were not detected above screening criteria in the soil matrix samples collected from borings RB1, RB2, RB13, RB14, RB15, HP1, HP2, and HP3.

Lead was detected above California Hazardous Waste Thresholds in soil samples collected from 7 borings advanced in the eastern and southern portions of the subject property. TCLP lead was detected in the soil sample collected from boring HP4 at a concentration below the Federal Hazardous Waste Threshold of 5 mg/L. Zinc was detected above California Hazardous Waste Thresholds in the soil sample collected from boring RB6.

Elevated concentrations of TPH were detected in the groundwater sample collected at HP3. Groundwater was not encountered, and groundwater samples were not collected from borings advanced in the northeastern portion of the site in which the highest contaminant concentrations were detected in the soil.

The subject property is a public park. Structures at the site include bathrooms, a pool house and a community building. With the exception of 4-isopropyl toluene detected at a concentration of 0.12 mg/kg in soil samples RB3-3, VOCs were not detected in the analyzed soil samples. Groundwater was encountered at approximately 5 feet below grade. TBA was detected at 26 μg/L and benzene was detected at 1 μg/L in the groundwater samples. Based on the results from this assessment, there is a low risk of vapor intrusion.

Recommendations

The soil assessment was performed to evaluate whether contaminated soil management would be warranted during subsurface activities associated with the planned site improvements. PAHs, TPH, and metals were detected in the soil at concentrations exceeding EHS ILs. In our experience, EHS requires excavated soil containing constituents at concentrations exceeding EHS ILs to be properly disposed. It is recommended that a Soil Management Plan be prepared that describes the proper handling, management, and disposal of impacted soil from the site.

Prior to excavating contaminated soil from the site a permit may be required from the Santa Barbara County Air Pollution Control District (APCD). If the quantity of contaminated soil to be excavated is less than 1,000 cubic yards, an exemption from permits requirements may be applied for from the APCD. A grading permit may also be required from the City of Santa Barbara.

Constituents were not detected at concentrations exceeding EHS ILs in the analyzed soil samples collected from most of the borings advanced in the western portion of the site. The thickness of cover material at the site is unknown. The cover thickness might vary throughout the site.

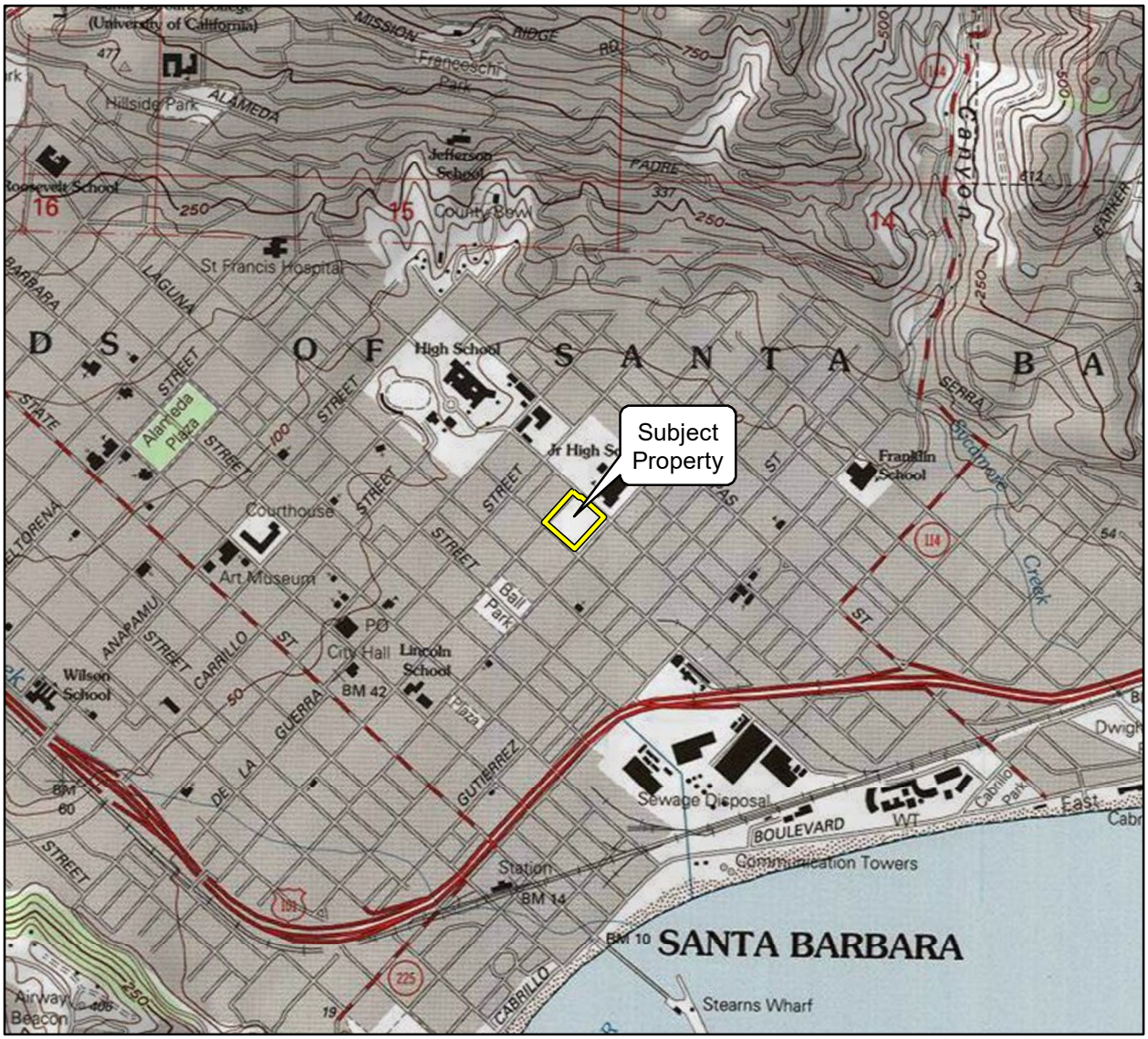
Limitations

This report has been prepared for and is intended for the exclusive use of the City of Santa Barbara. The contents of this report should not be relied upon by any other party without the written consent of Rincon Consultants, Inc.

Our conclusions regarding the site are based on the results of a limited subsurface sampling program. The results of this evaluation are qualified by the fact that only limited sampling and analytical testing was conducted during this assessment.

This scope was not intended to completely establish the quantities and distribution of contaminants present at the site or to determine the cost to remediate the site. The concentrations of contaminants measured at any given location may not be representative of conditions at other locations. Further, conditions may change at any particular location as a function of time in response to natural conditions, chemical reactions, and other events. Conclusions regarding the condition of the site do not represent a warranty that all areas within the site are similar to those sampled.

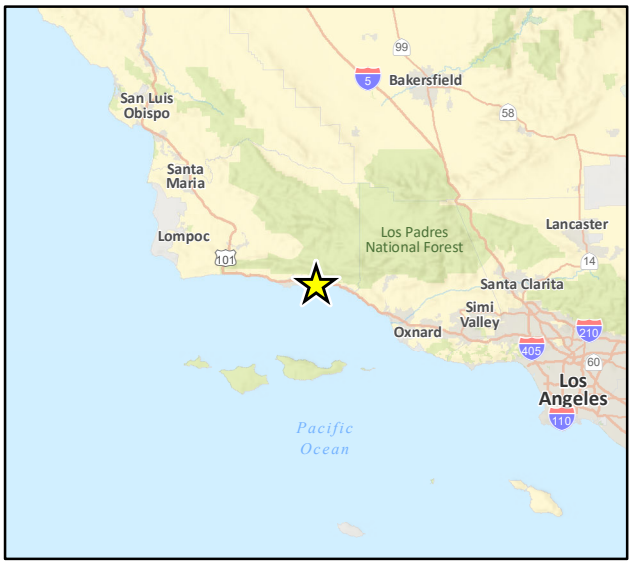
Figures



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0 1,000 2,000
Scale in Feet

N



Vicinity Map

Figure 1

Sample Location	Latitude	Longitude
HP1	34.425142	-119.690793
HP2	34.424946	-119.690714
HP3	34.424794	-119.690307
HP4	34.424541	-119.690432
HP5	34.424487	-119.690045
RB1	34.425792	-119.690202
RB2	34.425738	-119.690000
RB3	34.425601	-119.689655
RB4	34.425323	-119.689568
RB5	34.425291	-119.689246
RB6	34.425169	-119.68964
RB7	34.425385	-119.689888
RB8	34.425388	-119.690285
RB9	34.424848	-119.689661
RB10	34.42469	-119.689779
RB11	34.424873	-119.690128
RB12	34.424344	-119.689939
RB13	34.425371	-119.690729
RB14	34.424895	-119.690896
RB15	34.424696	-119.690661



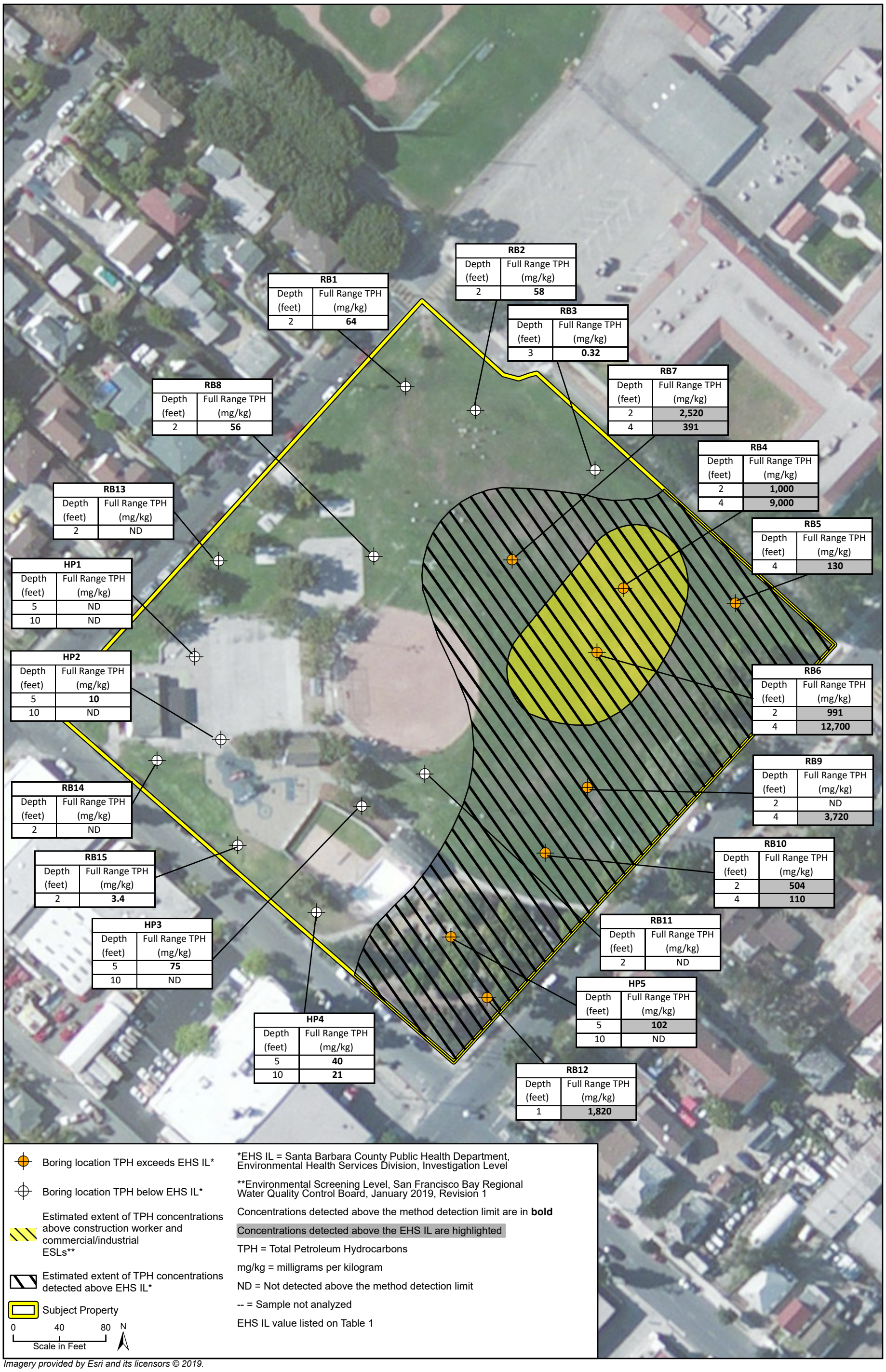
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Site Map

Figure 2

Rincon Consultants, Inc.



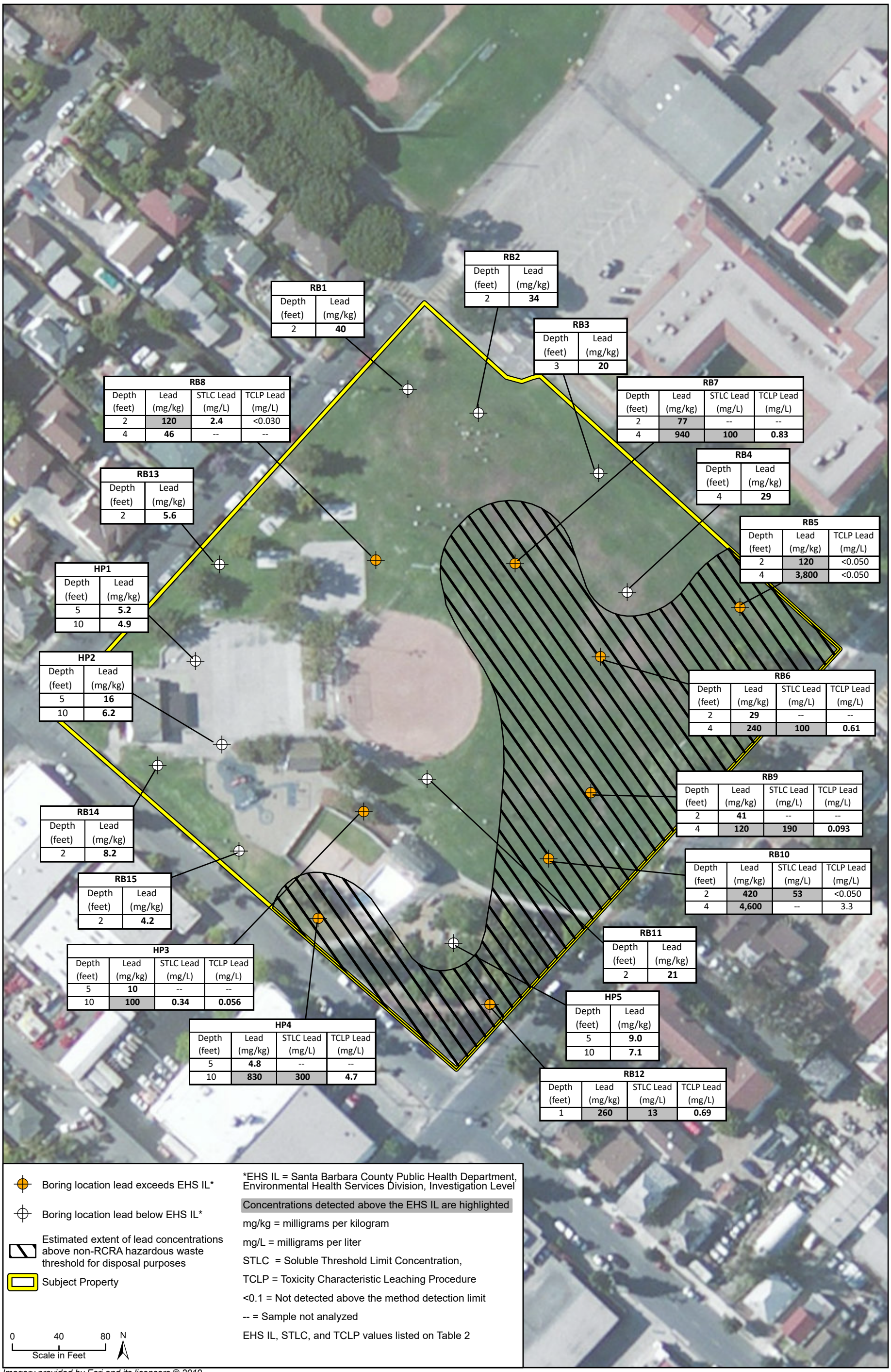
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TPH Concentrations in Soil Map

Figure 3

Rincon Consultants, Inc.



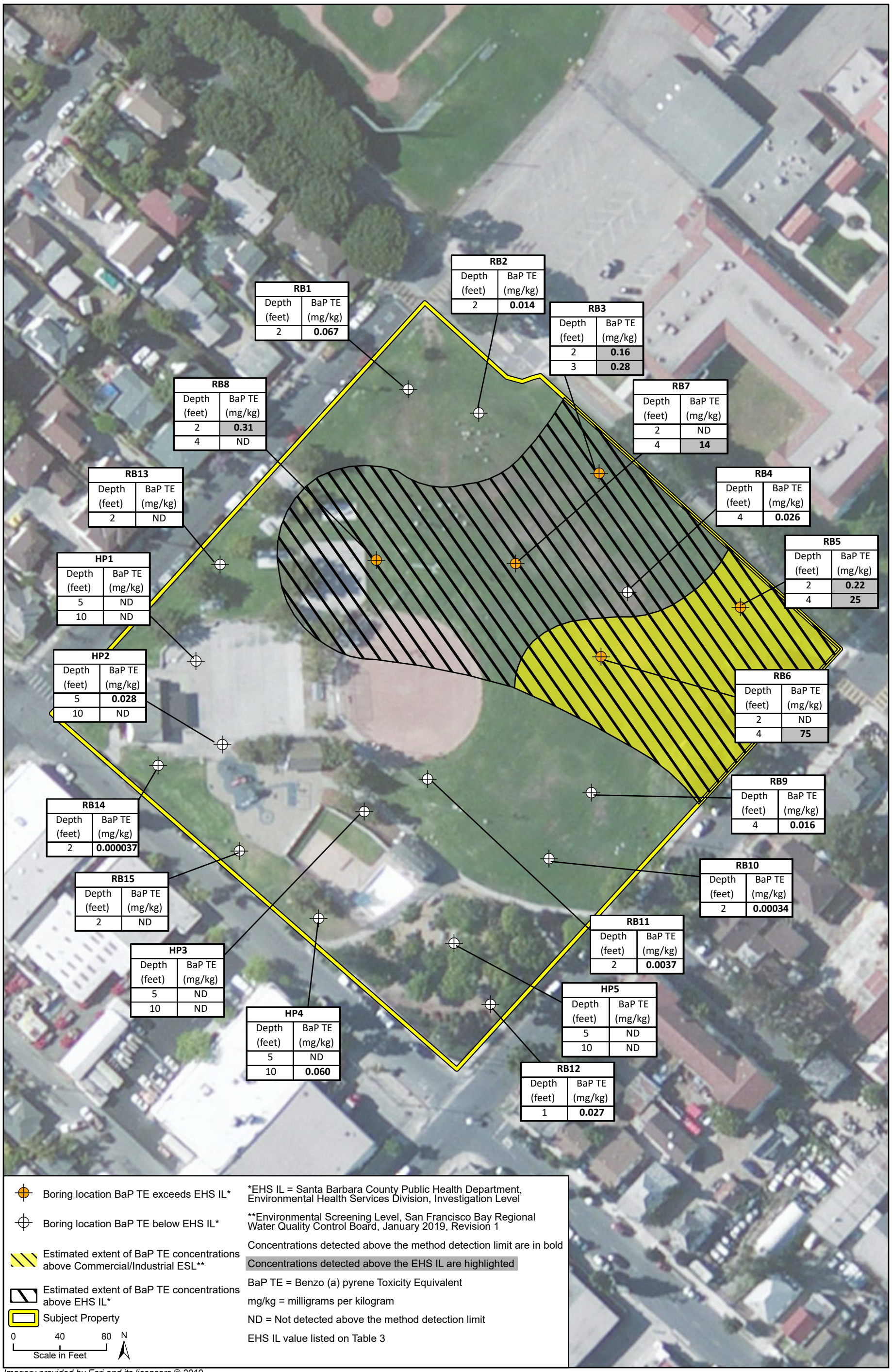
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Lead Concentrations in Soil Map

Figure 4

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PAH Concentrations in Soil Map

Figure 5

Tables

TABLE 1

Summary of TPH, VOCs, and PCBs in Soil Matrix Samples

Ortega Park Phase II Environmental Site Assessment

604 East Ortega Street, Santa Barbara, California

Sample Location	Sample Depth (feet)	TPH				VOCs		PCBs
		TPHg (C_4-C_{12})	TPHd (C_{13}-C_{22})	TPHo (C_{23}-C_{40})	Full Range TPH	4-Isopropyl Toluene	Other VOCs	
		Results in milligrams per kilogram (mg/kg)						
RB1	**2**	<0.00099	<7.6	**64**	**64**	--	--	--
	4	--	--	--	--	--	--	--
RB2	**2**	<0.098	<7.6	**58**	**58**	--	--	--
	4	--	--	--	--	--	--	--
RB3	**2**	--	--	--	--	--	--	--
	3	**0.32**	<7.6	<40	**0.32**	**0.12**	ND	<0.010
RB4	**2**	<0.097	**110**	**890**	**1,000**	--	--	--
	4	<0.099	**1,000**	**8,000**	**9,000**	<0.0020	ND	<0.010
RB5	**2**	--	--	--	--	--	--	--
	4	<0.10	<7.5	**130**	**130**	<0.0020	ND	--
RB6	**2**	<0.099	**31**	**960**	**991**	<0.0020	ND	--
	4	<0.10	**5,800**	**6,900**	**12,700**	<0.0020	ND	--
RB7	**2**	<0.097	**120**	**2,400**	**2,520**	--	--	--
	4	<0.10	**31**	**360**	**391**	<0.0020	ND	<0.030
RB8	**2**	<0.098	<7.6	**56**	**56**	--	--	--
	4	--	--	--	--	--	--	--
RB9	**2**	<0.098	<7.6	<40	ND	--	--	--
	4	<0.10	**420**	**3,300**	**3,720**	<0.0020	ND	<0.010
RB10	**2**	<0.099	**54**	**450**	**504**	<0.0020	ND	--
	4	<0.099	<7.6	**110**	**110**	--	--	--
RB11	**2**	<0.099	<7.6	<40	ND	--	--	--
	4	--	--	--	--	--	--	--
RB12	**1**	<0.10	**120**	**1,700**	**1,820**	<0.0020	ND	<0.010
RB13	**2**	<0.098	<7.5	<40	ND	--	--	--
	4	--	--	--	--	--	--	--
RB14	**2**	<0.099	<7.6	<40	ND	--	--	--
	4	--	--	--	--	--	--	--
RB15	**2**	**3.4**	<7.6	<40	**3.4**	--	--	--
	4	--	--	--	--	--	--	--
HP1	**5**	<0.097	<7.6	<40	ND	<0.0020	ND	--
	10	--	<7.6	<40	ND	<0.0020	ND	--
HP2	**5**	<0.10	**9.6**	<40	**10**	--	--	--
	10	<0.096	<7.6	<40	ND	--	--	--
HP3	**5**	<0.097	<7.6	**75**	**75**	--	--	--
	10	<0.098	<7.5	<40	ND	--	--	--
HP4	**5**	<0.097	<7.6	**40**	**40**	--	--	--
	10	<0.20	**21**	<40	**21**	<0.0020	ND	--
HP5	**5**	<0.099	**10**	**92**	**102**	--	--	--
	10	<0.098	<7.6	<40	ND	--	--	--
EHS IL		*100*	*100*	*100*	*100*	--	*varies*	*0.23*
Tier 1 ESL		*100*	*260*	*1,600*	--	--	*varies*	*0.23*
ESL (C/I)		*2,000*	*1,200*	*180,000*	--	--	*varies*	*0.94*
ESL (CW)		*1,800*	*1,100*	*54,000*	--	--	*varies*	*5.5*

Soil samples collected by Rincon Consultants on April 16, 2019

Concentrations detected above the method detection limit are in **bold**

Concentrations detected above the EHS IL are highlighted grey

TPH = Total Petroleum Hydrocarbons

TPHg = TPH as gasoline

TPHd = TPH as diesel fuel

TPHo = TPH as motor oil

VOCs = Volatile Organic Compounds

PCBs = Polychlorinated Biphenyls

EHS IL = Santa Barbara County Public Health Department, Environmental Health Services Division, Investigation Level

ESL = Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, January 2019, Rev. 1

Tier 1 ESL = Based on a generic conceptual site model designed for use at most sites

ESL (C/I) = Commercial/Industrial: Shallow Soil Exposure - Direct Exposure Human Health Risk Levels (Table S-1)

ESL (CW) = Any Land Use/Any Depth Soil Exposure: Construction Worker - Direct Exposure Human Health Risk Levels (Table S-1)

mg/kg = milligrams per kilogram

<0.1 = Not detected above the method detection limit

ND = Not detected above the method detection limit

-- = Value not established

Soil samples analyzed by Oilfield Environmental and Compliance, Inc.

Analyses:

Full Range TPH by EPA Method 8015M

VOCs by EPA Method 8260B

PCBs by EPA Method 8082

TABLE 2
Summary of Metals in Soil Matrix Samples
Ortega Park Phase II Environmental Site Assessment
604 East Ortega Street, Santa Barbara, California

Sample Location	Sample Depth (Feet)	Antimony	Arsenic	Barium	STLC Barium (mg/L)	Beryllium	Cadmium	Chromium	STLC Chromium (mg/L)	TCLP Chromium (mg/L)	Cobalt	Copper	Lead	STLC Lead (mg/L)	TCLP Lead (mg/L)	Mercury	STLC Mercury (mg/L)	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	STLC Zinc (mg/L)
		Results in milligrams per kilogram (mg/kg) unless otherwise noted																							
RB1	2	<0.95	**4.4**	**74**	--	**0.38**	<0.14	**22**	--	--	**4.3**	**18**	**40**	--	--	**0.078**	--	**0.40**	**19**	<0.95	<0.19	**1.9**	**27**	**65**	--
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RB2	2	<1.0	**4.9**	**67**		**0.37**	<0.15	**22**			**4.4**	**22**	**34**	--	--	**0.079**		**0.59**	**18**	<1.0	<0.20	**1.7**	**25**	**63**	--
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RB3	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3	<0.99	**10**	**57**	--	**0.31**	<0.15	**15**	--	--	**4.1**	**14**	**20**	--	--	**0.049**	--	**0.27**	**15**	<0.99	<0.20	**1.8**	**20**	**41**	--
RB4	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4	<0.93	**3.3**	**57**	--	**0.28**	<0.14	**15**	--	--	**4.1**	**11**	**29**	--	--	**0.32**	--	**0.59**	**14**	<0.93	<0.19	**1.6**	**22**	**90**	--
RB5	2	--	--	--	--	--	--	**15**	--	--	--	--	**120**	--	<0.050	**0.075**	--	--	--	--	--	--	--	--	--
	4	**9.9**	**5.0**	**500**	--	**0.25**	<0.15	**120**	**0.071**	<0.025	**5.7**	**150**	**3,800**	--	<0.050	**2.1**	<0.00050	**0.62**	**21**	<0.97	<0.19	<0.48	**16**	**1,100**	--
RB6	2	--	--	--	--	--	--	--	--	--	--	--	**29**	--	--	--	--	--	--	--	--	--	--	**39**	--
	4	**2.7**	**4.7**	**680**	--	<0.24	**3.1**	**20**	--	--	**2.9**	**46**	**240**	**100**	**0.61**	**0.067**	--	<0.24	**16**	<0.96	<0.19	**1.4**	**7.3**	**3,300**	**330**
RB7	2	--	**5.9**	**100**	--	--	--	**13**	--	--	--	--	**77**	--	--	--	--	--	--	--	--	--	--	--	--
	4	**5.9**	**20**	**1,200**	**13**	<0.24	<0.14	**72**	**0.19**	--	**7.1**	**170**	**940**	**100**	**0.83**	**0.44**	--	**1.9**	**120**	<0.96	<0.19	<0.48	**5.8**	**380**	--
RB8	2	<0.93	**3.2**	**72**	--	**0.27**	<0.14	**14**	--	--	**4.0**	**24**	**120**	**2.4**	<0.030	**0.15**	--	<0.23	**15**	<0.93	<0.19	**0.55**	**17**	**100**	--
	4	--	--	--	--	--	--	--	--	--	--	--	**46**	--	--	--	--	--	--	--	--	--	--	--	--
RB9	2	--	--	--	--	--	--	--	--	--	--	--	**41**	--	--	--	--	--	--	--	--	<0.49	--	--	--
	4	<0.95	**4.2**	**640**	--	**0.46**	<0.14	**20**	--	--	**7.6**	**16**	**120**	**190**	**0.093**	**0.45**	--	**0.32**	**16**	<0.95	**13**	**2.0**	**26**	**120**	--
RB10	2	**2.1**	**3.7**	**260**	--	**0.28**	<0.15	**40**	--	--	**5.1**	**42**	**420**	**53**	<0.050	**1.3**	--	**0.46**	**14**	<0.99	**0.65**	**1.1**	**19**	**630**	--
	4	--	--	--	--	--	--	--	--	--	--	--	**4,600**	--	**3.3**	--	--	--	--	--	--	--	--	--	--
RB11	2	<0.98	**3.4**	**74**	--	**0.26**	**0.19**	**19**	--	--	**3.2**	**12**	**21**	--	--	**0.065**	--	**1.4**	**16**	<0.98	<0.20	**2.0**	**31**	**51**	--
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.47	--	--	--
RB12	1	<0.99	**4.7**	**150**	--	**0.28**	**1.8**	**17**	--	--	**5.6**	**54**	**260**	**13**	**0.69**	**0.47**	--	<0.25	**19**	<0.99	<0.20	**0.61**	**20**	**630**	--
RB13	2	<0.95	**3.7**	**96**	--	**0.53**	<0.14	**23**	--	--	**3.0**	**12**	**5.6**	--	--	**0.034**	--	<0.24	**19**	<0.95	<0.19	**0.95**	**31**	**33**	--
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RB14	2	<0.92	**4.9**	**53**	--	**0.32**	<0.14	**22**	--	--	**4.1**	**7.5**	**8.2**	--	--	**0.024**	--	**2.2**	**23**	<0.92	<0.18	**2.1**	**21**	**31**	--
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.48	--	--	--
RB15	2	<0.97	**3.9**	**25**	--	**0.29**	<0.15	**18**	--	--	**3.8**	**5.9**	**4.2**	--	--	**0.013**	--	**1.3**	**20**	<0.97	<0.19	**1.7**	**19**	**24**	--
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HP1	5	<0.93	**2.8**	**96**	--	**0.44**	<0.14	**12**	--	--	**6.4**	**6.1**	**5.2**	--	--	**0.0099**	--	<0.23	**12**	<0.93	<0.19	<0.46	**22**	**11**	--
	10	<0.92	**2.0**	**57**	--	**0.31**	<0.14	**11**	--	--	**2.5**	**6.3**	**4.9**	--	--	<0.010	--	<0.23	**8.2**	<0.92	<0.18	<0.46	**17**	**18**	--
HP2	5	<0.95	**2.4**	**95**	--	**0.42**	<0.14	**14**	--	--	**7.2**	**12**	**16**	--	--	**0.29**	--	<0.24	**14**	<0.95	<0.19	**0.76**	**22**	**32**	--
	10	<1.0	**5.2**	**44**	--	**0.50**	<0.15	**15**	--	--	**3.9**	**9.5**	**6.2**	--	--	<0.010	--	**0.64**	**19**	<1.0	<0.20	**1.0**	**23**	**31**	--
HP3	5	<0.97	**2.5**	**61**	--	**0.40**	<0.15	**13**	--	--	**5.4**	**8.4**	**10**	--	--	**0.028**	--	<0.24	**11**	<0.97	<0.19	**1.0**	**21**	**23**	--
	10	<0.97	**5.5**	**130**	--	**0.72**	<0.15	**25**	--	--	**6.4**	**23**	**100**	**0.34**	**0.056**	**0.17**	--	<0.24	**17**	<0.97	<0.19	**0.65**	**38**	**360**	--
HP4	5	<0.99	**4.1**	**36**	--	**0.27**	<0.15	**18**	--	--	**3.5**	**5.7**	**4.8**	--	--	**0.017**	--	**1.4**	**19**	<0.99	<0.20	**1.9**	**18**	**25**	--
	10	**1.2**	**3.9**	**360**	--	**0.29**	<0.14	**20**	--	--	**3.7**	**79**	**830**	**300**	**4.7**	**0.66**	--	<0.23	**15**	<0.93	**1.9**	**0.46**	**18**	**1,200**	--
HP5	5	<0.93	**3.2**	**130**	--	**0.51**	<0.14	**28**	--	--	**6.8**	**17**	**9.0**	--	--	**0.014**	--	<0.23	**33**	<0.93	<0.19	**2.8**	**34**	**200**	--
	10	**1.1**	**5.3**	**170**	--	**0.67**	<0.14	**44**	--	--	**8.7**	**20**	**7.1**	--	--	**0.016**	--	<0.23	**50**	<0.91	<0.18	**2.7**	**38**	**59**	--
Background Concentration		*0.15 - 1.95*	*0.6 - 11*	*133 - 1,400*		*0.25 - 2.70*	*0.05 - 1.70*	*23 - 1,579*			*2.7 - 46.9*	*9.1 - 96.4*	*12.4 - 97.1*			*0.05 - 0.90*		*0.1 - 9.6*	*9.0 - 509*	*0.015 - 0.430*	*0.10 - 8.3*	*0.17 - 1.1*	*39 - 288*	*88 - 236*	
EHS IL		*11*	*11*	*1,000*		*7.5*	*10*	*50*			*23*	*250*	*50*			*2*		*390*	*200*	*10*	*50*	*2*	*240*	*2,500*	
Tier 1		*11*	*0.067*	*390*		*5.0*	*1.9*	*16*			*23*	*18*	*32*			*13*		*6.9*	*86*	*2.4*	*25*	*0.78*	*18*	*34*	
ESLs (C/I)		*160*	*0.31*	*220,000*		*230*	*1,100*	*1,800,000*			*350*	*47,000*	*320*			*190*		*5,800*	*11,000*	*5,800*	*5,800*	*12*	*5,800*	*350,000*	
ESL (CW)		*50*	*0.98*	*3,000*		*27*	*5,100*	*53,000*			*28*	*14,000*	*160*			*44*		*1,800*	*86*	*1,700*	*1,800*	*3.5*	*470*	*110,000*	
TTLC		*500*	*500*	*10,000*		*75*	*100*	*2,500*			*8,000*	*2,500*	*1,000*			*20*		*3,500*	*2,000*	*100*	*500*	*700*	*2,400*	*5,000*	
STLC (mg/L)		*15*	*5*	*100*		*0.75*	*1*	*5*			*80*	*25*	*5*			*0.2*		*350*	*20*	*1*	*5*	*7*	*24*	*250*	
TCLP (mg/L)		*--*	*5*	*100*		*--*	*1*	*5*			*--*	*--*	*5*			*0.2*		*--*	*--*	*1*	*5*	*--*	*--*	*--*	

Soil samples collected by Rincon Consultants on April 16, 2019
Concentrations detected above the method detection limit are in **bold**
Concentrations detected above EHS ILs are highlighted grey
Background Concentration = Kearney, *Background Concentrations of Trace and Major Elements in California Soils*, University of California, 1996
EHS IL = Santa Barbara County Public Health Department, Environmental Health Services Division, Investigation Level
ESL = Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, January 2019, Rev. 1
Tier 1 ESL = Based on a generic conceptual site model designed for use at most sites
ESL (C/I) = Commercial/Industrial: Shallow Soil Exposure - Direct Exposure Human Health Risk Levels (Table S-1)
ESL (CW) = Any Land Use/Any Depth Soil Exposure: Construction Worker - Direct Exposure Human Health Risk Levels (Table S-1)
TTLC = Total Threshold Limit Concentration, California Code of Regulations, Title 22, Chapter 11, Article 3
STLC = Soluble Threshold Limit Concentration, California Code of Regulations, Title 22, Chapter 11, Article 3
TCLP = Toxicity characteristic leaching procedure, USEPA
mg/L = milligrams per liter
mg/kg = milligrams per kilogram
<0.1 = Not detected above the method detection limit
-- = Sample not analyzed or value not established
Soil samples analyzed by Oilfield Environmental and Compliance, Inc.

Analyses:
CAM17 Metals by EPA Method 6010B/7471A

TABLE 3
Summary of PAHs in Soil Matrix Samples
Ortega Park Phase II Environmental Site Assessment
604 East Ortega Street, Santa Barbara, California

Sample Location	Sample Depth (feet)	Acenaphthene	Acenaphthylene	Anthracene	Benz (a) anthracene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (a) pyrene	Benzo (g,h,i) perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene Toxicity Equivalent Concentration
		Results in milligrams per kilogram (mg/kg)																
RB1	2	<0.0060	**0.0060**	<0.0060	**0.020**	**0.031**	**0.032**	**0.059**	**0.072**	**0.029**	<0.010	**0.062**	<0.0060	**0.023**	<0.010	**0.023**	**0.14**	**0.067**
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RB2	2	<0.0060	**0.0067**	<0.0060	**0.0080**	**0.0093**	**0.013**	**0.012**	<0.010	**0.013**	<0.010	**0.017**	<0.0060	<0.0060	**0.039**	**0.015**	**0.020**	**0.014**
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RB3	2	<0.030	<0.030	<0.030	**0.050**	**0.097**	**0.077**	**0.14**	**0.21**	**0.067**	<0.050	**0.15**	<0.030	**0.063**	<0.050	**0.067**	**0.31**	**0.16**
	3	**0.042**	<0.0030	**0.096**	**0.22**	**0.23**	**0.19**	**0.21**	**0.060**	**0.26**	**0.014**	**0.480**	**0.040**	**0.063**	**0.018**	**0.39**	**0.40**	**0.28**
RB4	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4	<0.012	<0.012	<0.012	<0.012	**0.015**	**0.015**	**0.024**	**0.032**	**0.016**	<0.020	**0.031**	<0.012	<0.012	<0.020	**0.016**	**0.059**	**0.026**
RB5	2	<0.012	**0.020**	**0.012**	**0.051**	**0.11**	**0.088**	**0.19**	**0.28**	**0.077**	<0.020	**0.20**	<0.012	**0.083**	<0.020	**0.061**	**0.41**	**0.22**
	4	<0.060	**1.3**	**0.73**	**2.9**	**6.5**	**4.4**	**22**	**67**	**4.2**	**0.14**	**18**	**0.11**	**15**	**0.23**	**3.5**	**61**	**25**
RB6	2	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.040	<0.024	<0.040	<0.024	<0.024	<0.024	<0.040	<0.024	<0.024	ND
	4	**0.90**	**25**	**24**	**36**	**30**	**39**	**59**	**47**	**51**	**5.2**	**130**	**11**	**40**	**42**	**200**	**150**	**75**
RB7	2	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<1.0	<0.60	<1.0	<0.60	<0.60	<0.60	<1.0	<0.60	<0.60	ND
	4	**0.92**	**0.91**	**0.85**	**1.7**	**3.8**	**2.6**	**12**	**42**	**2.4**	**0.11**	**11**	**0.21**	**8.5**	**0.23**	**4.6**	**31**	**14**
RB8	2	<0.024	**0.027**	**0.027**	**0.045**	**0.13**	**0.053**	**0.27**	**0.65**	**0.064**	<0.040	**0.39**	<0.024	**0.17**	<0.040	**0.15**	**0.81**	**0.31**
	4	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0050	**0.0030**	<0.0030	<0.0030	<0.0050	<0.0030	**0.0076**	ND
RB9	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4	<0.0030	<0.0030	**0.0030**	**0.010**	<0.0030	<0.0030	**0.014**	**0.011**	**0.012**	<0.0050	**0.017**	<0.0030	**0.0050**	<0.0050	**0.0090**	**0.021**	**0.016**
RB10	2	<0.0030	<0.0030	<0.0030	<0.0030	**0.0033**	<0.0030	<0.0030	<0.0050	**0.0083**	<0.0050	**0.0033**	<0.0030	<0.0030	<0.0050	**0.0040**	**0.0040**	**0.00034**
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RB11	2	<0.0030	<0.0030	<0.0030	<0.0030	**0.0040**	<0.0030	**0.0033**	<0.0050	<0.0030	<0.0050	**0.0067**	<0.0030	<0.0030	<0.0050	**0.0043**	**0.0077**	**0.0037**
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RB12	1	<0.0060	**0.0080**	<0.0060	**0.013**	<0.0060	<0.0060	**0.024**	**0.057**	**0.025**	<0.010	**0.033**	<0.0060	**0.014**	<0.010	**0.011**	**0.047**	**0.027**
RB13	2	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0030	ND
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RB14	2	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	**0.0037**	<0.0030	<0.0050	<0.0030	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0030	**0.000037**
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RB15	2	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0030	ND
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HP1	5	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0030	ND
	10	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0030	ND
HP2	5	<0.0033	**0.0033**	<0.0030	**0.013**	<0.0030	<0.0030	**0.026**	**0.024**	**0.020**	<0.0050	**0.012**	<0.0030	**0.010**	<0.0050	**0.012**	**0.040**	**0.028**
	10	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0030	ND
HP3	5	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.010	<0.0060	<0.010	**0.0060**	<0.0060	<0.0060	<0.010	<0.0060	**0.0060**	ND
	10	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0030	ND
HP4	5	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0030	ND
	10	<0.018	<0.018	<0.018	**0.042**	**0.054**	<0.018	**0.050**	**0.044**	**0.078**	<0.030	**0.034**	<0.018	<0.018	<0.030	**0.020**	**0.064**	**0.060**
HP5	5	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0030	ND
	10	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0030	ND
Benzo (a) pyrene TEF		--	--	--	*0.1*	*0.1*	*0.01*	*1*	--	*0.001*	*1*	--	--	*0.1*	--*	--	--	--
EHS IL		*12*	*6.4*	*1.9*	*0.63*	*1.1*	*2.8*	*0.11*	*2.5*	*2.2*	*0.11*	*0.69*	*6.0*	*0.48*	*0.042*	*7.8*	*45*	*0.11*
Tier 1 ESL		*12*	*6.4*	*1.9*	*0.63*	*1.1*	*2.8*	*0.11*	*2.5*	*2.2*	*0.11*	*0.69*	*6.0*	*0.48*	*0.042*	*7.8*	*45*	*0.11*
ESL (C/I)		*45,000*	--	*230,000*	*20*	*21*	*210*	*20*	--	*2,100*	*2.1*	*30,000*	*30,000*	*21*	*17*	--	*23,000*	*20*
ESL (CW)		*10,000*	--	*50,000*	*11*	*11*	*910*	*110*	--	*9,100*	*11*	*6,700*	*6,700*	*110*	*400*	--	*5,000*	*110*

Soil samples collected by Rincon Consultants on April 16, 2019
Concentrations detected above the method detection limit are in **bold**
Concentrations detected above the EHS IL are **highlighted**
PAHs = Polycyclic Aromatic Hydrocarbons
Benzo (a) pyrene TEF = Relative Potency Factor values for carcinogenic PAHs (excluding naphthalene*), United States Environmental Protection Agency
*Naphthalene is evaluated separately from other carcinogenic PAHs, no TEF is listed
EHS IL = Santa Barbara County Public Health Department, Environmental Health Services Division, Investigation Level
ESL = Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, January 2019, Rev. 1
Tier 1 ESL = Based on a generic conceptual site model designed for use at most sites
ESL (C/I) = Commercial/Industrial: Shallow Soil Exposure - Direct Exposure Human Health Risk Levels (Table S-1)
ESL (CW) = Any Land Use/Any Depth Soil Exposure: Construction Worker - Direct Exposure Human Health Risk Levels (Table S-1)
mg/kg = milligrams per kilogram
<0.1 = Not detected above the method detection limit
-- = Value not established
Soil samples analyzed by Oilfield Environmental and Compliance, Inc.

Analyses:
PAHs by EPA Method 8270

TABLE 4

Summary of TPH and VOCs in Groundwater Samples

Ortega Park Phase II Environmental Site Assessment

604 East Ortega Street, Santa Barbara, California

Sample Location	TPH				VOCs				
	TPHg (C_4-C_{12})	TPHd (C_{13}-C_{22})	TPHo (C_{23}-C_{40})	Full Range TPH	Benzene	t-Butyl Alcohol	Toluene	Trichloroethene (TCE)	Other VOCs
	Results in micrograms per liter (µg/L)								
HP2	<20	<44	**57**	**57**	<0.25	<2.5	<0.25	**0.31**	ND
HP3	<200	**1,300**	**2,000**	**3,300**	<2.5	**26**	<2.5	<2.5	ND
HP4	<200	**170**	**520**	**690**	<2.5	<25	<2.5	<2.5	ND
HP5	<20	**81**	**170**	**251**	**1.0**	<2.5	**0.36**	<2.5	ND
EHS IL	*1,000*	*1,000*	*1,000*	*1,000*	*1*	--	*150*	*5*	*varies*
MCL	--	--	--	--	*1*	--	*150*	*5*	*varies*

Soil samples collected by Rincon Consultants on April 16, 2019

Concentrations detected above the method detection limit are in **bold**

Concentrations detected above EHS ILs are **highlighted**

TPH = Total Petroleum Hydrocarbons

TPHg = TPH as gasoline

TPHd = TPH as diesel fuel

TPHo = TPH as motor oil

VOCs = Volatile Organic Compounds

EHS IL = Santa Barbara County Public Health Department, Environmental Health Services Division, Investigation Level

MCL = Maximum Contaminant Levels for drinking water established by the California Department of Public Health, March 2018

<0.1, ND = Not detected above the method detection limit

-- = Sample not analyzed or value not established

Soil samples analyzed by Oilfield Environmental and Compliance, Inc.

Analyses:

TPHd and TPHo by EPA Method 8015M

VOCs including TPHg by EPA Method 8260B

Appendix A

Boring Logs

Rincon Consultants, Inc.
Environmental Scientists Planners Engineers
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LOG OF BORING HP1

Ortega Park
Phase II Environmental Site Assessment
604 East Ortega Street
Santa Barbara, California
Project # 18-06506

Date Completed	: April 16, 2019
Method	: Geoprobe
Drilled By	: OEC
Logged By	: Nico Navarro
Location	: 34.425142, -119.690793

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION	PID
0					
1				Silty clayey SAND, dark brown to black, moist, loose to moderately dense, slightly plastic, medium grained sand, poorly graded, no odor.	
2					
3					
4					
5	■	SC			0.0
6					
7					
8					
9					
10	■			Light brown.	0.0

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LOG OF BORING HP2

Ortega Park
Phase II Environmental Site Assessment
604 East Ortega Street
Santa Barbara, California
Project # 18-06506

Date Completed	: April 16, 2019
Method	: Geoprobe
Drilled By	: OEC
Logged By	: Nico Navarro
Location	: 34.424946, -119.690714

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION	PID
0				Clayey SILT with some sand, red to dark brown, moist, soft, slightly plastic, no odor, brick and building debris from 0 to 5 below grade.	
5	■	ML		Saturated.	0.0 ▼
10	■			Light brown.	0.0

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LOG OF BORING HP3

Ortega Park
Phase II Environmental Site Assessment
604 East Ortega Street
Santa Barbara, California
Project # 18-06506

Date Completed	: April 16, 2019
Method	: Geoprobe
Drilled By	: OEC
Logged By	: Nico Navarro
Location	: 34.424794, -119.690307

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION	PID
0				Silty clayey SAND, dark brown, wet, loose to moderately dense, slightly plastic, medium to coars grained sand, moderately graded, no odor.	
5	■	SC		Saturated.	0.0 ▼
10	■			Dark grey, organic odor.	0.0

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LOG OF BORING HP4

Ortega Park
Phase II Environmental Site Assessment
604 East Ortega Street
Santa Barbara, California
Project # 18-06506

Date Completed	: April 16, 2019
Method	: Geoprobe
Drilled By	: OEC
Logged By	: Nico Navarro
Location	: 34.424541, -119.690432

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION	PID
0					
1				Silty clayey SAND, light brown, wet, loose to moderately dense, slightly plastic, medium grained sand, poorly graded, no odor.	
2					
3					
4					
5	■	SC		Saturated.	0.0 ▼
6					
7					
8					
9					
10	■	ML		Clayey SILT with occasional sand, dark brown to black, wet, soft, slightly plastic to plastic, no odor.	0.0

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LOG OF BORING HP5

Ortega Park
Phase II Environmental Site Assessment
604 East Ortega Street
Santa Barbara, California
Project # 18-06506

Date Completed	: April 16, 2019
Method	: Geoprobe
Drilled By	: OEC
Logged By	: Nico Navarro
Location	: 34.424487, -119.690045

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION	PID
0				Sandy clayey SILT, dark brown, very moist to wet, soft, slightly plastic, no odor.	
5	■	ML		Saturated.	0.0
10	■				0.0

▼

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LOG OF BORING RB1

Ortega Park
Phase II Environmental Site Assessment
604 East Ortega Street
Santa Barbara, California
Project # 18-06506

Date Completed	: April 16, 2019
Method	: Geoprobe
Drilled By	: OEC
Logged By	: Nico Navarro
Location	: 34.425792, -119.690202

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION	PID
0–4		SM		Clayey silty SAND, light brown, moist, loose to moderately dense, slightly plastic, medium grained sand, poorly graded, no odor.	0.0 0.0

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LOG OF BORING RB2

Ortega Park
Phase II Environmental Site Assessment
604 East Ortega Street
Santa Barbara, California
Project # 18-06506

Date Completed	: April 16, 2019
Method	: Geoprobe
Drilled By	: OEC
Logged By	: Nico Navarro
Location	: 34.425738, -119.690000

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION	PID
0–4		ML		Sandy clayey SILT, dark brown, slightly moist, soft, slightly plastic, no odor.	0.0
3–4				Less sand, light/dark brown mix.	0.0

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LOG OF BORING RB3

Ortega Park
Phase II Environmental Site Assessment
604 East Ortega Street
Santa Barbara, California
Project # 18-06506

Date Completed	: April 16, 2019
Method	: Geoprobe
Drilled By	: OEC
Logged By	: Nico Navarro
Location	: 34.425601, -119.689655

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION	PID
0					
1				Clayey SILT with some sand, medium brown, moist, soft, slightly plastic, no odor.	
2	■	ML			4.0
3					
4	■			Sandy clayey SILT, dark brown, moist, soft, slightly plastic, no odor.	10.0
5					
6					
7					
8					
9					
10					

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LOG OF BORING RB4

Ortega Park
Phase II Environmental Site Assessment
604 East Ortega Street
Santa Barbara, California
Project # 18-06506

Date Completed	: April 16, 2019
Method	: Geoprobe
Drilled By	: OEC
Logged By	: Nico Navarro
Location	: 34.425323, -119.689568

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION	PID
0–4		ML		Sandy clayey SILT, medium brown, moist, soft, slightly plastic, no odor.	0.0
3–4				Dark brown/black mix, metal debris.	0.0

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LOG OF BORING RB5

Ortega Park
Phase II Environmental Site Assessment
604 East Ortega Street
Santa Barbara, California
Project # 18-06506

Date Completed	: April 16, 2019
Method	: Geoprobe
Drilled By	: OEC
Logged By	: Nico Navarro
Location	: 34.425291, -119.689246

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION	PID
0–4		SM		Clayey silty SAND, medium brown, moist, loose to moderately dense, slightly plastic, medium grained sand, poorly graded, no odor.	0.0
				Light brown/black mix.	0.0

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LOG OF BORING RB6

Ortega Park
Phase II Environmental Site Assessment
604 East Ortega Street
Santa Barbara, California
Project # 18-06506

Date Completed	: April 16, 2019
Method	: Geoprobe
Drilled By	: OEC
Logged By	: Nico Navarro
Location	: 34.425169, -119.68964

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION	PID
0–4		SC		Silty clayey SAND, dark brown, moist, loose to moderately dense, slightly plastic, fine to medium grained sand, moderately graded, no odor.	0.0
3–4				Dark brown/black/light grey mix, glass and other debris.	0.0

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LOG OF BORING RB7

Ortega Park
Phase II Environmental Site Assessment
604 East Ortega Street
Santa Barbara, California
Project # 18-06506

Date Completed	: April 16, 2019
Method	: Geoprobe
Drilled By	: OEC
Logged By	: Nico Navarro
Location	: 34.425385, -119.689888

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION	PID
0–4		SM		Clayey silty SAND, light/dark brown mix, moist, soft, slightly plastic, medium grained sand, poorly graded, no odor, unkown shards and debris.	0.0
3–4				Dark brown.	0.0

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LOG OF BORING RB8

Ortega Park
Phase II Environmental Site Assessment
604 East Ortega Street
Santa Barbara, California
Project # 18-06506

Date Completed	: April 16, 2019
Method	: Geoprobe
Drilled By	: OEC
Logged By	: Nico Navarro
Location	: 34.425388, -119.690285

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION	PID
0–4		SM		Clayey silty SAND, dark brown, moist, loose to moderately dense, slightly plastic, medium to coarse grained sand, moderately graded, no odor.	0.0
3–4				Grey/brown mix.	0.0

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LOG OF BORING RB9

Ortega Park
Phase II Environmental Site Assessment
604 East Ortega Street
Santa Barbara, California
Project # 18-06506

Date Completed	: April 16, 2019
Method	: Geoprobe
Drilled By	: OEC
Logged By	: Nico Navarro
Location	: 34.424848, -119.689661

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION	PID
0–4		SC		Silty clayey SAND, medium brown, moist, loose to moderately dense, slightly plastic, medium grained sand, poorly graded, no odor.	0.0
3–4				Black/red/brown mix, possible brick/building debris.	0.0

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LOG OF BORING RB10

Ortega Park
Phase II Environmental Site Assessment
604 East Ortega Street
Santa Barbara, California
Project # 18-06506

Date Completed	: April 16, 2019
Method	: Geoprobe
Drilled By	: OEC
Logged By	: Nico Navarro
Location	: 34.424690, -119.689779

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION	PID
0–1		ML		Clayey SILT with some sand, dark brown, moist, soft, slightly plastic to plastic, no odor, glass debris.	0.0
3–4				Black, no debris.	0.0

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LOG OF BORING RB11

Ortega Park
Phase II Environmental Site Assessment
604 East Ortega Street
Santa Barbara, California
Project # 18-06506

Date Completed	: April 16, 2019
Method	: Geoprobe
Drilled By	: OEC
Logged By	: Nico Navarro
Location	: 34.424873, -119.690128

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION	PID
0–4		SC		Silty clayey SAND, dark brown, moist, loose to moderately dense, slightly plastic, medium to coarse grained sand, moderately graded, no odor, debris.	0.0
3–4				Light brown, possible fill material.	0.0

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LOG OF BORING RB12

Ortega Park
Phase II Environmental Site Assessment
604 East Ortega Street
Santa Barbara, California
Project # 18-06506

Date Completed	: April 16, 2019
Method	: Hand Auger
Drilled By	: Rincon
Logged By	: Cody Wilgus
Location	: 34.424344, -119.689939

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION	PID
0		ML		Clayey SILT, medium brown, dry to slightly moist, slightly plastic, no odor, abundant glass, metal, and wood debris starting at 8 inches below grade.	0.0
1				Refusal at 1 foot below grade.	
2					
3					
4					
5					
6					
7					
8					
9					
10					

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LOG OF BORING RB13

Ortega Park
Phase II Environmental Site Assessment
604 East Ortega Street
Santa Barbara, California
Project # 18-06506

Date Completed	: April 16, 2019
Method	: Geoprobe
Drilled By	: OEC
Logged By	: Nico Navarro
Location	: 34.425371, -119.690729

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION	PID
0–4		SC		Silty clayey SAND, medium brown/red mix, moist, loose to moderately dense, slightly plastic, medium to coarse grained sand, moderately graded, no odor.	0.0 0.0

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LOG OF BORING RB14

Ortega Park
Phase II Environmental Site Assessment
604 East Ortega Street
Santa Barbara, California
Project # 18-06506

Date Completed	: April 16, 2019
Method	: Geoprobe
Drilled By	: OEC
Logged By	: Nico Navarro
Location	: 34.424895, -119.690896

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION	PID
0–4		CL		Silty CLAY with some sand, medium brown, wet, soft, slightly plastic to plastic, no odor.	0.0
3–4				Grey-brown.	0.0

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LOG OF BORING RB15

Ortega Park
Phase II Environmental Site Assessment
604 East Ortega Street
Santa Barbara, California
Project # 18-06506

Date Completed	: April 16, 2019
Method	: Hand Auger
Drilled By	: Rincon
Logged By	: Nico Navarro
Location	: 34.424696, -119.690661

Depth in Feet	Samples	USCS	GRAPHIC	DESCRIPTION	PID
0–1		ML		Clayey SILT with some sand, light brown, moist, soft, slightly plastic to plastic, no odor.	0.0
3–4				Medium brown.	0.0

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Appendix B

Laboratory Analytical Reports

Oilfield Environmental & Compliance, Inc.

Nico Navarro
Rincon Consultants
180 N. Ashwood Ave.
Ventura, CA 93003

Report: May 31, 2019 12:54 Work Order: 1901966

Project: Ortega Park
Number: 18-06506/604 E. Ortega St., Santa Barbara, CA

Dear Client:

Enclosed is an analytical report for the above referenced project. The samples included in this report were received on April 17, 2019 07:55 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,



Alyssa Zuniga, Project Manager

azuniga@oecusa.com

Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

SAMPLE SUMMARY

Sample ID	Laboratory ID	Client Matrix	Lab Matrix	Date Sampled	Date Received
RB1-2	1901966-01	Solid	Solid	04/16/19 08:30	04/17/19 07:55
RB2-2	1901966-03	Solid	Solid	04/16/19 09:00	04/17/19 07:55
RB3-2	1901966-05	Solid	Solid	04/16/19 09:10	04/17/19 07:55
RB3-4	1901966-06	Solid	Solid	04/16/19 09:10	04/17/19 07:55
RB7-2	1901966-07	Solid	Solid	04/16/19 09:25	04/17/19 07:55
RB7-4	1901966-08	Solid	Solid	04/16/19 09:25	04/17/19 07:55
RB4-2	1901966-09	Solid	Solid	04/16/19 09:45	04/17/19 07:55
RB4-4	1901966-10	Solid	Solid	04/16/19 09:45	04/17/19 07:55
RB6-2	1901966-11	Solid	Solid	04/16/19 09:50	04/17/19 07:55
RB6-4	1901966-12	Solid	Solid	04/16/19 09:50	04/17/19 07:55
RB5-2	1901966-13	Solid	Solid	04/16/19 10:00	04/17/19 07:55
RB5-4	1901966-14	Solid	Solid	04/16/19 10:00	04/17/19 07:55
RB9-2	1901966-15	Solid	Solid	04/16/19 10:20	04/17/19 07:55
RB9-4	1901966-16	Solid	Solid	04/16/19 10:20	04/17/19 07:55
RB10-2	1901966-17	Solid	Solid	04/16/19 10:30	04/17/19 07:55
RB10-4	1901966-18	Solid	Solid	04/16/19 10:30	04/17/19 07:55
HP4-5	1901966-19	Solid	Solid	04/16/19 13:45	04/17/19 07:55
HP4-10	1901966-20	Solid	Solid	04/16/19 13:50	04/17/19 07:55
RB15-2	1901966-21	Solid	Solid	04/16/19 14:10	04/17/19 07:55
RB14-2	1901966-23	Solid	Solid	04/16/19 14:20	04/17/19 07:55
RB14-4	1901966-24	Solid	Solid	04/16/19 14:20	04/17/19 07:55
HP5-5	1901966-25	Solid	Solid	04/16/19 10:45	04/17/19 07:55
HP5-10	1901966-26	Solid	Solid	04/16/19 10:50	04/17/19 07:55
RB11-2	1901966-27	Solid	Solid	04/16/19 11:50	04/17/19 07:55
RB11-4	1901966-28	Solid	Solid	04/16/19 11:50	04/17/19 07:55
HP3-5	1901966-29	Solid	Solid	04/16/19 12:20	04/17/19 07:55

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

SAMPLE SUMMARY

Sample ID	Laboratory ID	Client Matrix	Lab Matrix	Date Sampled	Date Received
HP3-10	1901966-30	Solid	Solid	04/16/19 12:25	04/17/19 07:55
HP2-5	1901966-31	Solid	Solid	04/16/19 14:35	04/17/19 07:55
HP2-10	1901966-32	Solid	Solid	04/16/19 14:40	04/17/19 07:55
HP1-5	1901966-33	Solid	Solid	04/16/19 14:50	04/17/19 07:55
HP1-10	1901966-34	Solid	Solid	04/16/19 14:55	04/17/19 07:55
RB13-2	1901966-35	Solid	Solid	04/16/19 15:10	04/17/19 07:55
RB8-2	1901966-37	Solid	Solid	04/16/19 15:25	04/17/19 07:55
RB8-4	1901966-38	Solid	Solid	04/16/19 15:25	04/17/19 07:55
RB12-1	1901966-39	Solid	Solid	04/16/19 15:18	04/17/19 07:55

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

ANALYTICAL REPORT FOR SAMPLES
1901966-01 (Solid)
RB1-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	ND	0.079	mg/kg	1	B9D0688	04/24/19	04/24/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.4	mg/kg	1	B9D0566	04/19/19	04/23/19	EPA 6010B	
Arsenic	**4.4**	1.9	"	"	"	"	"	"	
Barium	**74**	0.95	"	"	"	"	"	"	
Beryllium	ND	0.47	"	"	"	"	"	"	
Cadmium	ND	0.24	"	"	"	"	"	"	
Chromium	**22**	0.47	"	"	"	"	"	"	
Cobalt	**4.3**	0.47	"	"	"	"	"	"	
Copper	**18**	0.95	"	"	"	"	"	"	
Lead	**40**	0.47	"	"	"	"	"	"	
Molybdenum	ND	0.47	"	"	"	"	"	"	
Nickel	**19**	0.24	"	"	"	"	"	"	
Selenium	ND	1.9	"	"	"	"	"	"	
Silver	ND	0.47	"	"	"	"	"	"	
Thallium	**1.9**	0.95	"	"	"	"	"	"	
Vanadium	**27**	0.95	"	"	"	"	"	"	
Zinc	**65**	0.95	"	"	"	"	"	"	
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.0050	mg/kg	1	B9D0596	04/19/19	04/19/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*69.8 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	ND	10	mg/kg	1	B9D0534	04/18/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	**64**	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*91.2 %*	*(67 - 134)*		"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-01 (Solid)

RB1-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									R-05
Acenaphthene	ND	0.010	mg/kg	2	B9D0605	04/22/19	04/26/19	EPA 8270-SIM	
Acenaphthylene	ND	0.010	"	"	"	"	"	"	
Anthracene	ND	0.010	"	"	"	"	"	"	
Benz (a) anthracene	**0.020**	0.010	"	"	"	"	"	"	
Benzo (b) fluoranthene	**0.031**	0.010	"	"	"	"	"	"	ISlowA
Benzo (k) fluoranthene	**0.032**	0.010	"	"	"	"	"	"	ISlowA
Benzo (a) pyrene	**0.059**	0.010	"	"	"	"	"	"	ISlowA
Benzo (g,h,i) perylene	**0.072**	0.020	"	"	"	"	"	"	ISlowA
Chrysene	**0.029**	0.010	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	"	
Fluoranthene	**0.062**	0.010	"	"	"	"	"	"	
Fluorene	ND	0.010	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	**0.023**	0.010	"	"	"	"	"	"	ISlowA
Naphthalene	ND	0.020	"	"	"	"	"	"	
Phenanthrene	**0.023**	0.010	"	"	"	"	"	"	
Pyrene	**0.14**	0.010	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*102 %*	*(13 - 180)*		"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-03 (Solid)

RB2-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	ND	0.095	mg/kg	1	B9D0688	04/24/19	04/24/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.5	mg/kg	1	B9D0566	04/19/19	04/23/19	EPA 6010B	
Arsenic	**4.9**	2.0	"	"	"	"	"	"	
Barium	**67**	1.0	"	"	"	"	"	"	
Beryllium	ND	0.50	"	"	"	"	"	"	
Cadmium	ND	0.25	"	"	"	"	"	"	
Chromium	**22**	0.50	"	"	"	"	"	"	
Cobalt	**4.4**	0.50	"	"	"	"	"	"	
Copper	**22**	1.0	"	"	"	"	"	"	
Lead	**34**	0.50	"	"	"	"	"	"	
Molybdenum	**0.59**	0.50	"	"	"	"	"	"	
Nickel	**18**	0.25	"	"	"	"	"	"	
Selenium	ND	2.0	"	"	"	"	"	"	
Silver	ND	0.50	"	"	"	"	"	"	
Thallium	**1.7**	1.0	"	"	"	"	"	"	
Vanadium	**25**	1.0	"	"	"	"	"	"	
Zinc	**63**	1.0	"	"	"	"	"	"	
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.49	mg/kg	1	B9D0596	04/19/19	04/19/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*78.4 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	ND	10	mg/kg	1	B9D0534	04/18/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	**58**	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*93.9 %*	*(67 - 134)*		"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-03 (Solid)

RB2-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									R-05
Acenaphthene	ND	0.010	mg/kg	2	B9D0605	04/22/19	04/26/19	EPA 8270-SIM	
Acenaphthylene	ND	0.010	"	"	"	"	"	"	
Anthracene	ND	0.010	"	"	"	"	"	"	
Benz (a) anthracene	ND	0.010	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.010	"	"	"	"	"	"	ISlowA
Benzo (k) fluoranthene	**0.013**	0.010	"	"	"	"	"	"	ISlowA
Benzo (a) pyrene	**0.012**	0.010	"	"	"	"	"	"	ISlowA
Benzo (g,h,i) perylene	ND	0.020	"	"	"	"	"	"	
Chrysene	**0.013**	0.010	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	"	
Fluoranthene	**0.017**	0.010	"	"	"	"	"	"	
Fluorene	ND	0.010	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.010	"	"	"	"	"	"	
Naphthalene	**0.039**	0.020	"	"	"	"	"	"	
Phenanthrene	**0.015**	0.010	"	"	"	"	"	"	
Pyrene	**0.020**	0.010	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*105 %*	*(13 - 180)*		"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-05 (Solid)

RB3-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									R-01
Acenaphthene	ND	0.050	mg/kg	5	B9D0848	04/30/19	05/02/19	EPA 8270-SIM	
Acenaphthylene	ND	0.050	"	"	"	"	"	"	
Anthracene	ND	0.050	"	"	"	"	"	"	
Benz (a) anthracene	**0.050**	0.050	"	"	"	"	"	"	
Benzo (b) fluoranthene	**0.097**	0.050	"	"	"	"	"	"	ISlowA
Benzo (k) fluoranthene	**0.077**	0.050	"	"	"	"	"	"	ISlowA
Benzo (a) pyrene	**0.14**	0.050	"	"	"	"	"	"	ISlowA
Benzo (g,h,i) perylene	**0.21**	0.10	"	"	"	"	"	"	ISlowA
Chrysene	**0.067**	0.050	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.10	"	"	"	"	"	"	
Fluoranthene	**0.15**	0.050	"	"	"	"	"	"	
Fluorene	ND	0.050	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	**0.063**	0.050	"	"	"	"	"	"	ISlowA
Naphthalene	ND	0.10	"	"	"	"	"	"	
Phenanthrene	**0.067**	0.050	"	"	"	"	"	"	
Pyrene	**0.31**	0.050	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*100 %*	*(13 - 180)*		"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-06 (Solid)

RB3-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	ND	0.089	mg/kg	1	B9D0688	04/24/19	04/24/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.5	mg/kg	1	B9D0566	04/19/19	04/23/19	EPA 6010B	
Arsenic	**10**	2.0	"	"	"	"	"	"	
Barium	**57**	0.99	"	"	"	"	"	"	
Beryllium	ND	0.50	"	"	"	"	"	"	
Cadmium	ND	0.25	"	"	"	"	"	"	
Chromium	**15**	0.50	"	"	"	"	"	"	
Cobalt	**4.1**	0.50	"	"	"	"	"	"	
Copper	**14**	0.99	"	"	"	"	"	"	
Lead	**20**	0.50	"	"	"	"	"	"	
Molybdenum	ND	0.50	"	"	"	"	"	"	
Nickel	**15**	0.25	"	"	"	"	"	"	
Selenium	ND	2.0	"	"	"	"	"	"	
Silver	ND	0.50	"	"	"	"	"	"	
Thallium	**1.8**	0.99	"	"	"	"	"	"	
Vanadium	**20**	0.99	"	"	"	"	"	"	
Zinc	**41**	0.99	"	"	"	"	"	"	
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.49	mg/kg	1	B9D0596	04/19/19	04/19/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*85.0 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	ND	10	mg/kg	1	B9D0534	04/18/19	04/18/19	EPA 8015M	
TPH Motor Oil (C23-C40)	ND	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*100 %*	*(67 - 134)*		"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-06 (Solid)

RB3-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS									
t-Amyl Methyl Ether	ND	0.0050	mg/kg	1	B9D0564	04/19/19	04/19/19	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Bromobenzene	ND	0.0050	"	"	"	"	"	"	
Bromochloromethane	ND	0.0050	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0050	"	"	"	"	"	"	
Bromoform	ND	0.0050	"	"	"	"	"	"	
Bromomethane	ND	0.0050	"	"	"	"	"	"	
t-Butyl alcohol	ND	0.10	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0050	"	"	"	"	"	"	
Chlorobenzene	ND	0.0050	"	"	"	"	"	"	
Chloroethane	ND	0.0050	"	"	"	"	"	"	
Chloroform	ND	0.0050	"	"	"	"	"	"	
Chloromethane	ND	0.0050	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0050	"	"	"	"	"	"	
Dibromomethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
Diisopropyl Ether	ND	0.0050	"	"	"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-06 (Solid)

RB3-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS (Continued)									
Ethanol	ND	4.0	mg/kg	1	B9D0564	04/19/19	04/19/19	EPA 8260B	
Ethyl t-Butyl Ether	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0050	"	"	"	"	"	"	
4-Isopropyl Toluene	**0.12**	0.0050	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0050	"	"	"	"	"	"	
Methylene chloride	ND	0.0050	"	"	"	"	"	"	
Methyl-t-butyl ether	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0050	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0050	"	"	"	"	"	"	
Styrene	ND	0.0050	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
Trichloroethene (TCE)	ND	0.0050	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Vinyl chloride	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*95.0 %*	*(73 - 132)*		"	"	"	"	
Surrogate: Toluene-d8		*98.3 %*	*(70 - 126)*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*	*(78 - 118)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-06 (Solid)

RB3-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polychlorinated Biphenyls by GC/ECD									C-01
PCB-1016	ND	0.020	mg/kg	1	B9D0538	04/18/19	04/19/19	EPA 8082	
PCB-1221	ND	0.020	"	"	"	"	"	"	
PCB-1232	ND	0.020	"	"	"	"	"	"	
PCB-1242	ND	0.020	"	"	"	"	"	"	
PCB-1248	ND	0.020	"	"	"	"	"	"	
PCB-1254	ND	0.020	"	"	"	"	"	"	
PCB-1260	ND	0.020	"	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		*81.6 %*	*(10 - 163)*		"	"	"	"	
Surrogate: 2,4,5,6 Tetrachloro-m-xylene		*55.8 %*	*(10 - 150)*		"	"	"	"	
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									
Acenaphthene	**0.042**	0.025	mg/kg	5	B9D0605	04/22/19	04/25/19	EPA 8270-SIM	
Acenaphthylene	ND	0.0050	"	1	"	"	04/24/19	"	
Anthracene	**0.096**	0.025	"	5	"	"	04/25/19	"	
Benz (a) anthracene	**0.22**	0.025	"	"	"	"	"	"	
Benzo (b) fluoranthene	**0.23**	0.025	"	"	"	"	"	"	
Benzo (k) fluoranthene	**0.19**	0.025	"	"	"	"	"	"	
Benzo (a) pyrene	**0.21**	0.025	"	"	"	"	"	"	
Benzo (g,h,i) perylene	**0.060**	0.050	"	"	"	"	"	"	
Chrysene	**0.26**	0.025	"	"	"	"	"	"	
Dibenz (a,h) anthracene	**0.014**	0.010	"	1	"	"	04/24/19	"	ISlowA
Fluoranthene	**0.48**	0.025	"	5	"	"	04/25/19	"	
Fluorene	**0.040**	0.025	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	**0.063**	0.025	"	"	"	"	"	"	
Naphthalene	**0.018**	0.010	"	1	"	"	04/24/19	"	
Phenanthrene	**0.39**	0.025	"	5	"	"	04/25/19	"	
Pyrene	**0.40**	0.025	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*125 %*	*(13 - 180)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-07 (Solid)

RB7-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by ICP									
Arsenic	**5.9**	1.9	mg/kg	1	B9E0122	05/06/19	05/07/19	EPA 6010B	
Barium	**100**	0.96	"	"	"	"	"	"	
Chromium	**13**	0.48	"	"	"	"	"	"	
Lead	**77**	0.48	"	"	"	"	"	"	N-02
Volatile Organic TPH by GC/FID									HT-03
TPH Gasoline (C4-C12)	ND	0.49	mg/kg	1	B9E0113	05/03/19	05/04/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*87.8 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									HT-04
TPH Diesel (C13-C22)	**120**	20	mg/kg	2	B9E0073	05/02/19	05/03/19	EPA 8015M	
TPH Motor Oil (C23-C40)	**2400**	99	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*96.5 %*	*(67 - 134)*		"	"	"	"	
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									R-01
Acenaphthene	ND	1.0	mg/kg	50	B9D0848	04/30/19	05/02/19	EPA 8270-SIM	
Acenaphthylene	ND	1.0	"	"	"	"	"	"	
Anthracene	ND	1.0	"	"	"	"	"	"	
Benz (a) anthracene	ND	1.0	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	1.0	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	1.0	"	"	"	"	"	"	
Benzo (a) pyrene	ND	1.0	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	2.0	"	"	"	"	"	"	
Chrysene	ND	1.0	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	2.0	"	"	"	"	"	"	
Fluoranthene	ND	1.0	"	"	"	"	"	"	
Fluorene	ND	1.0	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	1.0	"	"	"	"	"	"	
Naphthalene	ND	2.0	"	"	"	"	"	"	
Phenanthrene	ND	1.0	"	"	"	"	"	"	
Pyrene	ND	1.0	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*%*	*(13 - 180)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-08 (Solid)

RB7-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	**0.44**	0.084	mg/kg	1	B9D0688	04/24/19	04/24/19	EPA 7471A	
Total Metals by ICP									
Antimony	**5.9**	2.4	mg/kg	1	B9D0566	04/19/19	04/23/19	EPA 6010B	
Arsenic	**20**	1.9	"	"	"	"	"	"	
Barium	**1200**	0.96	"	"	"	"	"	"	N-02
Beryllium	ND	0.48	"	"	"	"	"	"	
Cadmium	ND	0.24	"	"	"	"	"	"	
Chromium	**72**	0.48	"	"	"	"	"	"	N-02
Cobalt	**7.1**	0.48	"	"	"	"	"	"	
Copper	**170**	0.96	"	"	"	"	"	"	
Lead	**940**	0.48	"	"	"	"	"	"	N-02, N-03
Molybdenum	**1.9**	0.48	"	"	"	"	"	"	
Nickel	**120**	0.24	"	"	"	"	"	"	
Selenium	ND	1.9	"	"	"	"	"	"	
Silver	ND	0.48	"	"	"	"	"	"	
Thallium	ND	0.96	"	"	"	"	"	"	
Vanadium	**5.8**	0.96	"	"	"	"	"	"	
Zinc	**380**	0.96	"	"	"	"	"	"	
STLC Metals by ICP									
Barium	**13**	0.050	mg/L	1	B9E0157	05/06/19	05/06/19	STLC/EPA 6010B	QB-01
Chromium	**0.19**	0.050	"	"	"	"	"	"	
Lead	**100**	0.050	"	"	"	"	"	"	N-07

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-08 (Solid)
RB7-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TCLP Metals by ICP									
Lead	**0.83**	0.050	mg/L	1	B9E0076	05/02/19	05/02/19	EPA 1311/EPA 6010B	
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.50	mg/kg	1	B9D0596	04/19/19	04/19/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*80.6 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	**31**	20	mg/kg	2	B9D0534	04/18/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	**360**	100	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*98.7 %*	*(67 - 134)*		"	"	"	"	
Volatile Organic Compounds by GC/MS									
t-Amyl Methyl Ether	ND	0.0050	mg/kg	1	B9D0564	04/19/19	04/19/19	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Bromobenzene	ND	0.0050	"	"	"	"	"	"	
Bromochloromethane	ND	0.0050	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0050	"	"	"	"	"	"	
Bromoform	ND	0.0050	"	"	"	"	"	"	
Bromomethane	ND	0.0050	"	"	"	"	"	"	
t-Butyl alcohol	ND	0.10	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0050	"	"	"	"	"	"	
Chlorobenzene	ND	0.0050	"	"	"	"	"	"	
Chloroethane	ND	0.0050	"	"	"	"	"	"	
Chloroform	ND	0.0050	"	"	"	"	"	"	
Chloromethane	ND	0.0050	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0050	"	"	"	"	"	"	
Dibromomethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0050	"	"	"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-08 (Solid)

RB7-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS (Continued)									
1,1-Dichloroethane	ND	0.0050	mg/kg	1	B9D0564	04/19/19	04/19/19	EPA 8260B	
1,2-Dichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
Diisopropyl Ether	ND	0.0050	"	"	"	"	"	"	
Ethanol	ND	4.0	"	"	"	"	"	"	
Ethyl t-Butyl Ether	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0050	"	"	"	"	"	"	
4-Isopropyl Toluene	ND	0.0050	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0050	"	"	"	"	"	"	
Methylene chloride	ND	0.0050	"	"	"	"	"	"	
Methyl-t-butyl ether	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0050	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0050	"	"	"	"	"	"	
Styrene	ND	0.0050	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
Trichloroethene (TCE)	ND	0.0050	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Vinyl chloride	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-08 (Solid)
RB7-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS (Continued)									
Surrogate: Dibromofluoromethane		*94.7 %*	*(73 - 132)*		*B9D0564*	*04/19/19*	*04/19/19*	*EPA 8260B*	
Surrogate: Toluene-d8		*98.9 %*	*(70 - 126)*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*99.4 %*	*(78 - 118)*		"	"	"	"	
Polychlorinated Biphenyls by GC/ECD									C-01, C-06
PCB-1016	ND	0.060	mg/kg	1	B9D0538	04/18/19	04/19/19	EPA 8082	
PCB-1221	ND	0.060	"	"	"	"	"	"	
PCB-1232	ND	0.060	"	"	"	"	"	"	
PCB-1242	ND	0.060	"	"	"	"	"	"	
PCB-1248	ND	0.060	"	"	"	"	"	"	
PCB-1254	ND	0.060	"	"	"	"	"	"	
PCB-1260	ND	0.060	"	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		*53.3 %*	*(10 - 163)*		"	"	"	"	
Surrogate: 2,4,5,6 Tetrachloro-m-xylene		*42.3 %*	*(10 - 150)*		"	"	"	"	
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									R-01
Acenaphthene	**0.92**	0.20	mg/kg	20	B9D0605	04/22/19	04/25/19	EPA 8270-SIM	
Acenaphthylene	**0.91**	0.20	"	"	"	"	"	"	
Anthracene	**0.85**	0.20	"	"	"	"	"	"	
Benz (a) anthracene	**1.7**	0.20	"	"	"	"	"	"	
Benzo (b) fluoranthene	**3.8**	0.20	"	"	"	"	"	"	
Benzo (k) fluoranthene	**2.6**	0.20	"	"	"	"	"	"	
Benzo (a) pyrene	**12**	1.0	"	100	"	"	04/25/19	"	
Benzo (g,h,i) perylene	**42**	4.0	"	200	"	"	04/26/19	"	
Chrysene	**2.4**	0.20	"	20	"	"	04/25/19	"	
Dibenz (a,h) anthracene	**0.11**	0.10	"	5	"	"	04/24/19	"	ISlowA
Fluoranthene	**11**	1.0	"	100	"	"	04/25/19	"	
Fluorene	**0.21**	0.20	"	20	"	"	04/25/19	"	
Indeno (1,2,3-cd) pyrene	**8.5**	1.0	"	100	"	"	04/25/19	"	
Naphthalene	**0.23**	0.10	"	5	"	"	04/24/19	"	ISlowA
Phenanthrene	**4.6**	1.0	"	100	"	"	04/25/19	"	
Pyrene	**31**	2.0	"	200	"	"	04/26/19	"	
Surrogate: p-Terphenyl-d14		*100 %*	*(13 - 180)*		"	"	*04/25/19*	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-09 (Solid)

RB4-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic TPH by GC/FID									HT-03
TPH Gasoline (C4-C12)	ND	0.49	mg/kg	1	B9E0113	05/03/19	05/04/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*96.2 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									HT-04
TPH Diesel (C13-C22)	**110**	9.9	mg/kg	1	B9E0073	05/02/19	05/07/19	EPA 8015M	
TPH Motor Oil (C23-C40)	**890**	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*88.2 %*	*(67 - 134)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-10 (Solid)

RB4-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	**0.32**	0.099	mg/kg	1	B9D0688	04/24/19	04/24/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.3	mg/kg	1	B9D0566	04/19/19	04/23/19	EPA 6010B	
Arsenic	**3.3**	1.9	"	"	"	"	"	"	
Barium	**57**	0.93	"	"	"	"	"	"	
Beryllium	ND	0.47	"	"	"	"	"	"	
Cadmium	ND	0.23	"	"	"	"	"	"	
Chromium	**15**	0.47	"	"	"	"	"	"	
Cobalt	**4.1**	0.47	"	"	"	"	"	"	
Copper	**11**	0.93	"	"	"	"	"	"	
Lead	**29**	0.47	"	"	"	"	"	"	
Molybdenum	**0.59**	0.47	"	"	"	"	"	"	
Nickel	**14**	0.23	"	"	"	"	"	"	
Selenium	ND	1.9	"	"	"	"	"	"	
Silver	ND	0.47	"	"	"	"	"	"	
Thallium	**1.6**	0.93	"	"	"	"	"	"	
Vanadium	**22**	0.93	"	"	"	"	"	"	
Zinc	**90**	0.93	"	"	"	"	"	"	
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.50	mg/kg	1	B9D0618	04/22/19	04/22/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*32.8 %*	*(36 - 163)*		"	"	"	"	***S-LOW***
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	**1000**	100	mg/kg	10	B9D0534	04/18/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	**8000**	500	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*73.3 %*	*(67 - 134)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-10 (Solid)

RB4-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS									
t-Amyl Methyl Ether	ND	0.0050	mg/kg	1	B9D0564	04/19/19	04/19/19	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Bromobenzene	ND	0.0050	"	"	"	"	"	"	
Bromochloromethane	ND	0.0050	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0050	"	"	"	"	"	"	
Bromoform	ND	0.0050	"	"	"	"	"	"	
Bromomethane	ND	0.0050	"	"	"	"	"	"	
t-Butyl alcohol	ND	0.10	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0050	"	"	"	"	"	"	
Chlorobenzene	ND	0.0050	"	"	"	"	"	"	
Chloroethane	ND	0.0050	"	"	"	"	"	"	
Chloroform	ND	0.0050	"	"	"	"	"	"	
Chloromethane	ND	0.0050	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0050	"	"	"	"	"	"	
Dibromomethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
Diisopropyl Ether	ND	0.0050	"	"	"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-10 (Solid)

RB4-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS (Continued)									
Ethanol	ND	4.0	mg/kg	1	B9D0564	04/19/19	04/19/19	EPA 8260B	
Ethyl t-Butyl Ether	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0050	"	"	"	"	"	"	
4-Isopropyl Toluene	ND	0.0050	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0050	"	"	"	"	"	"	
Methylene chloride	ND	0.0050	"	"	"	"	"	"	
Methyl-t-butyl ether	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0050	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0050	"	"	"	"	"	"	
Styrene	ND	0.0050	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
Trichloroethene (TCE)	ND	0.0050	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Vinyl chloride	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*96.1 %*	*(73 - 132)*		"	"	"	"	
Surrogate: Toluene-d8		*97.5 %*	*(70 - 126)*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*92.2 %*	*(78 - 118)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-10 (Solid)

RB4-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polychlorinated Biphenyls by GC/ECD									C-01, C-06
PCB-1016	ND	0.020	mg/kg	1	B9D0538	04/18/19	04/19/19	EPA 8082	
PCB-1221	ND	0.020	"	"	"	"	"	"	
PCB-1232	ND	0.020	"	"	"	"	"	"	
PCB-1242	ND	0.020	"	"	"	"	"	"	
PCB-1248	ND	0.020	"	"	"	"	"	"	
PCB-1254	ND	0.020	"	"	"	"	"	"	
PCB-1260	ND	0.020	"	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		*138 %*	*(10 - 163)*		"	"	"	"	
Surrogate: 2,4,5,6 Tetrachloro-m-xylene		*101 %*	*(10 - 150)*		"	"	"	"	
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									R-01
Acenaphthene	ND	0.020	mg/kg	2	B9D0605	04/22/19	04/26/19	EPA 8270-SIM	
Acenaphthylene	ND	0.020	"	"	"	"	"	"	
Anthracene	ND	0.020	"	"	"	"	"	"	
Benz (a) anthracene	ND	0.020	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.020	"	"	"	"	"	"	ISlowA
Benzo (k) fluoranthene	ND	0.020	"	"	"	"	"	"	ISlowA
Benzo (a) pyrene	**0.024**	0.020	"	"	"	"	"	"	ISlowA
Benzo (g,h,i) perylene	ND	0.040	"	"	"	"	"	"	ISlowA
Chrysene	ND	0.020	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.040	"	"	"	"	"	"	
Fluoranthene	**0.031**	0.020	"	"	"	"	"	"	
Fluorene	ND	0.020	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	"	"	"	
Naphthalene	ND	0.040	"	"	"	"	"	"	
Phenanthrene	ND	0.020	"	"	"	"	"	"	
Pyrene	**0.059**	0.020	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*120 %*	*(13 - 180)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-11 (Solid)
RB6-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by ICP									
Lead	**29**	0.50	mg/kg	1	B9E0122	05/06/19	05/07/19	EPA 6010B	
Zinc	**39**	0.99	"	"	"	"	"	"	
Volatile Organic TPH by GC/FID									HT-03
TPH Gasoline (C4-C12)	ND	0.50	mg/kg	1	B9E0113	05/03/19	05/04/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*89.7 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									HT-04
TPH Diesel (C13-C22)	**31**	10	mg/kg	1	B9E0073	05/02/19	05/07/19	EPA 8015M	
TPH Motor Oil (C23-C40)	**960**	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*80.5 %*	*(67 - 134)*		"	"	"	"	
Volatile Organic Compounds by GC/MS									HT-03
t-Amyl Methyl Ether	ND	0.0050	mg/kg	1	B9E0098	05/03/19	05/03/19	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Bromobenzene	ND	0.0050	"	"	"	"	"	"	
Bromochloromethane	ND	0.0050	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0050	"	"	"	"	"	"	
Bromoform	ND	0.0050	"	"	"	"	"	"	
Bromomethane	ND	0.0050	"	"	"	"	"	"	
t-Butyl alcohol	ND	0.099	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0050	"	"	"	"	"	"	
Chlorobenzene	ND	0.0050	"	"	"	"	"	"	
Chloroethane	ND	0.0050	"	"	"	"	"	"	
Chloroform	ND	0.0050	"	"	"	"	"	"	
Chloromethane	ND	0.0050	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0050	"	"	"	"	"	"	
Dibromomethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0050	"	"	"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-11 (Solid)

RB6-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS (Continued)									HT-03
1,1-Dichloroethane	ND	0.0050	mg/kg	1	B9E0098	05/03/19	05/03/19	EPA 8260B	
1,2-Dichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
Diisopropyl Ether	ND	0.0050	"	"	"	"	"	"	
Ethanol	ND	4.0	"	"	"	"	"	"	
Ethyl t-Butyl Ether	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0050	"	"	"	"	"	"	
4-Isopropyl Toluene	ND	0.0050	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0050	"	"	"	"	"	"	
Methylene chloride	ND	0.0050	"	"	"	"	"	"	
Methyl-t-butyl ether	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0050	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0050	"	"	"	"	"	"	
Styrene	ND	0.0050	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
Trichloroethene (TCE)	ND	0.0050	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Vinyl chloride	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-11 (Solid)
RB6-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS (Continued)									HT-03
Surrogate: Dibromofluoromethane		*104 %*	*(73 - 132)*		*B9E0098*	*05/03/19*	*05/03/19*	*EPA 8260B*	
Surrogate: Toluene-d8		*97.4 %*	*(70 - 126)*		*"*	*"*	*"*	*"*	
Surrogate: 4-Bromofluorobenzene		*97.9 %*	*(78 - 118)*		*"*	*"*	*"*	*"*	
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									R-01
Acenaphthene	ND	0.040	mg/kg	4	B9D0848	04/30/19	05/02/19	EPA 8270-SIM	
Acenaphthylene	ND	0.040	"	"	"	"	"	"	
Anthracene	ND	0.040	"	"	"	"	"	"	
Benz (a) anthracene	ND	0.040	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.040	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.040	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.040	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.080	"	"	"	"	"	"	
Chrysene	ND	0.040	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.080	"	"	"	"	"	"	
Fluoranthene	ND	0.040	"	"	"	"	"	"	
Fluorene	ND	0.040	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.040	"	"	"	"	"	"	
Naphthalene	ND	0.080	"	"	"	"	"	"	
Phenanthrene	ND	0.040	"	"	"	"	"	"	
Pyrene	ND	0.040	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*100 %*	*(13 - 180)*		*"*	*"*	*"*	*"*	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-12 (Solid)
RB6-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	ND	0.10	mg/kg	1	B9D0688	04/24/19	04/24/19	EPA 7471A	
Total Metals by ICP									
Antimony	**2.7**	2.4	mg/kg	1	B9D0566	04/19/19	04/23/19	EPA 6010B	
Arsenic	**4.7**	1.9	"	"	"	"	"	"	
Barium	**680**	0.96	"	"	"	"	"	"	
Beryllium	ND	0.48	"	"	"	"	"	"	
Cadmium	**3.1**	0.24	"	"	"	"	"	"	
Chromium	**20**	0.48	"	"	"	"	"	"	
Cobalt	**2.9**	0.48	"	"	"	"	"	"	
Copper	**46**	0.96	"	"	"	"	"	"	
Lead	**240**	0.48	"	"	"	"	"	"	**N-02, N-03**
Molybdenum	ND	0.48	"	"	"	"	"	"	
Nickel	**16**	0.24	"	"	"	"	"	"	
Selenium	ND	1.9	"	"	"	"	"	"	
Silver	ND	0.48	"	"	"	"	"	"	
Thallium	**1.4**	0.96	"	"	"	"	"	"	
Vanadium	**7.3**	0.96	"	"	"	"	"	"	
Zinc	**3300**	0.96	"	"	"	"	"	"	**N-02**
STLC Metals by ICP									
Lead	**100**	0.050	mg/L	1	B9E0157	05/06/19	05/06/19	STLC/EPA 6010B	**N-07**
Zinc	**330**	0.25	"	"	"	"	"	"	**B-02n, N-07**
TCLP Metals by ICP									
Lead	**0.61**	0.050	mg/L	1	B9E0076	05/02/19	05/02/19	EPA 1311/EPA 6010B	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-12 (Solid)
RB6-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.50	mg/kg	1	B9D0618	04/22/19	04/22/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*76.5 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	**5800**	400	mg/kg	40	B9D0534	04/18/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	**6900**	2000	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*83.4 %*	*(67 - 134)*		"	"	"	"	
Volatile Organic Compounds by GC/MS									
t-Amyl Methyl Ether	ND	0.0050	mg/kg	1	B9D0564	04/19/19	04/19/19	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Bromobenzene	ND	0.0050	"	"	"	"	"	"	
Bromochloromethane	ND	0.0050	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0050	"	"	"	"	"	"	
Bromoform	ND	0.0050	"	"	"	"	"	"	
Bromomethane	ND	0.0050	"	"	"	"	"	"	
t-Butyl alcohol	ND	0.10	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0050	"	"	"	"	"	"	
Chlorobenzene	ND	0.0050	"	"	"	"	"	"	
Chloroethane	ND	0.0050	"	"	"	"	"	"	
Chloroform	ND	0.0050	"	"	"	"	"	"	
Chloromethane	ND	0.0050	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0050	"	"	"	"	"	"	
Dibromomethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0050	"	"	"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-12 (Solid)

RB6-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS (Continued)									
cis-1,2-Dichloroethene	ND	0.0050	mg/kg	1	B9D0564	04/19/19	04/19/19	EPA 8260B	
trans-1,2-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
Diisopropyl Ether	ND	0.0050	"	"	"	"	"	"	
Ethanol	ND	4.0	"	"	"	"	"	"	
Ethyl t-Butyl Ether	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0050	"	"	"	"	"	"	
4-Isopropyl Toluene	ND	0.0050	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0050	"	"	"	"	"	"	
Methylene chloride	ND	0.0050	"	"	"	"	"	"	
Methyl-t-butyl ether	ND	0.0050	"	"	"	"	"	"	
Naphthalene	**0.056**	0.0050	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0050	"	"	"	"	"	"	
Styrene	ND	0.0050	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
Trichloroethene (TCE)	ND	0.0050	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Vinyl chloride	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*97.5 %*	*(73 - 132)*		"	"	"	"	
Surrogate: Toluene-d8		*99.5 %*	*(70 - 126)*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*96.7 %*	*(78 - 118)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-12 (Solid)

RB6-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									R-01
Acenaphthene	**0.90**	0.10	mg/kg	10	B9D0605	04/22/19	04/24/19	EPA 8270-SIM	
Acenaphthylene	**25**	2.0	"	200	"	"	04/25/19	"	
Anthracene	**24**	2.0	"	"	"	"	"	"	
Benz (a) anthracene	**36**	2.0	"	"	"	"	"	"	
Benzo (b) fluoranthene	**30**	2.0	"	"	"	"	"	"	
Benzo (k) fluoranthene	**39**	2.0	"	"	"	"	"	"	
Benzo (a) pyrene	**59**	4.0	"	400	"	"	04/25/19	"	
Benzo (g,h,i) perylene	**47**	8.0	"	"	"	"	"	"	
Chrysene	**51**	4.0	"	"	"	"	"	"	
Dibenz (a,h) anthracene	**5.2**	4.0	"	200	"	"	04/25/19	"	
Fluoranthene	**130**	16	"	1600	"	"	04/25/19	"	
Fluorene	**11**	2.0	"	200	"	"	04/25/19	"	
Indeno (1,2,3-cd) pyrene	**40**	2.0	"	"	"	"	"	"	
Naphthalene	**42**	4.0	"	"	"	"	"	"	
Phenanthrene	**200**	16	"	1600	"	"	04/25/19	"	
Pyrene	**150**	16	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*150 %*		*(13 - 180)*	"	"	*04/24/19*	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-13 (Solid)
RB5-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	ND	0.095	mg/kg	1	B9E0123	05/06/19	05/06/19	EPA 7471A	
Total Metals by ICP									
Chromium	**15**	0.46	mg/kg	1	B9E0122	05/06/19	05/07/19	EPA 6010B	
Lead	**120**	0.46	"	"	"	"	"	"	**N-02, N-03**
TCLP Metals by ICP									
Lead	ND	0.050	mg/L	1	B9E0807	05/28/19	05/28/19	EPA 1311/EPA 6010B	
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									**R-01**
Acenaphthene	ND	0.020	mg/kg	2	B9D0848	04/30/19	05/02/19	EPA 8270-SIM	
Acenaphthylene	**0.020**	0.020	"	"	"	"	"	"	
Anthracene	ND	0.020	"	"	"	"	"	"	
Benz (a) anthracene	**0.051**	0.040	"	4	"	"	05/02/19	"	
Benzo (b) fluoranthene	**0.11**	0.040	"	"	"	"	"	"	**ISlowA**
Benzo (k) fluoranthene	**0.088**	0.040	"	"	"	"	"	"	**ISlowA**
Benzo (a) pyrene	**0.19**	0.040	"	"	"	"	"	"	**ISlowA**
Benzo (g,h,i) perylene	**0.28**	0.080	"	"	"	"	"	"	**ISlowA**
Chrysene	**0.077**	0.040	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.040	"	2	"	"	05/02/19	"	
Fluoranthene	**0.20**	0.020	"	"	"	"	"	"	
Fluorene	ND	0.020	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	**0.083**	0.040	"	4	"	"	05/02/19	"	**ISlowA**
Naphthalene	ND	0.040	"	2	"	"	05/02/19	"	
Phenanthrene	**0.061**	0.020	"	"	"	"	"	"	
Pyrene	**0.41**	0.020	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.040	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.040	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*95.0 %*	*(13 - 180)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-14 (Solid)
RB5-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	**2.1**	0.81	mg/kg	10	B9D0688	04/24/19	04/24/19	EPA 7471A	N-02
Total Metals by ICP									
Antimony	**9.9**	2.4	mg/kg	1	B9D0566	04/19/19	04/23/19	EPA 6010B	
Arsenic	**5.0**	1.9	"	"	"	"	"	"	
Barium	**500**	0.97	"	"	"	"	"	"	
Beryllium	ND	0.48	"	"	"	"	"	"	
Cadmium	ND	0.24	"	"	"	"	"	"	
Chromium	**120**	0.48	"	"	"	"	"	"	N-02, N-03
Cobalt	**5.7**	0.48	"	"	"	"	"	"	
Copper	**150**	0.97	"	"	"	"	"	"	
Lead	**3800**	0.48	"	"	"	"	"	"	N-01, N-03
Molybdenum	**0.62**	0.48	"	"	"	"	"	"	
Nickel	**21**	0.24	"	"	"	"	"	"	
Selenium	ND	1.9	"	"	"	"	"	"	
Silver	ND	0.48	"	"	"	"	"	"	
Thallium	ND	0.97	"	"	"	"	"	"	
Vanadium	**16**	0.97	"	"	"	"	"	"	
Zinc	**1100**	0.97	"	"	"	"	"	"	
STLC Metals by CVAA									
Mercury	ND	0.0010	mg/L	1	B9E0176	05/07/19	05/07/19	STLC/EPA 7470A	
STLC Metals by ICP									
Chromium	**0.071**	0.050	mg/L	1	B9E0157	05/06/19	05/06/19	STLC/EPA 6010B	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-14 (Solid)
RB5-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TCLP Metals by ICP									
Chromium	ND	0.050	mg/L	1	B9E0076	05/02/19	05/02/19	EPA 1311/EPA 6010B	
Lead	ND	0.050	"	"	"	"	"	"	
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.50	mg/kg	1	B9D0596	04/19/19	04/19/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*70.3 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	ND	9.9	mg/kg	1	B9D0534	04/18/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	**130**	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*91.8 %*	*(67 - 134)*		"	"	"	"	
Volatile Organic Compounds by GC/MS									
t-Amyl Methyl Ether	ND	0.0050	mg/kg	1	B9D0564	04/19/19	04/19/19	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Bromobenzene	ND	0.0050	"	"	"	"	"	"	
Bromochloromethane	ND	0.0050	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0050	"	"	"	"	"	"	
Bromoform	ND	0.0050	"	"	"	"	"	"	
Bromomethane	ND	0.0050	"	"	"	"	"	"	
t-Butyl alcohol	ND	0.099	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0050	"	"	"	"	"	"	
Chlorobenzene	ND	0.0050	"	"	"	"	"	"	
Chloroethane	ND	0.0050	"	"	"	"	"	"	
Chloroform	ND	0.0050	"	"	"	"	"	"	
Chloromethane	ND	0.0050	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0050	"	"	"	"	"	"	
Dibromomethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-14 (Solid)

RB5-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS (Continued)									
Dichlorodifluoromethane	ND	0.0050	mg/kg	1	B9D0564	04/19/19	04/19/19	EPA 8260B	
1,1-Dichloroethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
Diisopropyl Ether	ND	0.0050	"	"	"	"	"	"	
Ethanol	ND	4.0	"	"	"	"	"	"	
Ethyl t-Butyl Ether	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0050	"	"	"	"	"	"	
4-Isopropyl Toluene	ND	0.0050	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0050	"	"	"	"	"	"	
Methylene chloride	ND	0.0050	"	"	"	"	"	"	
Methyl-t-butyl ether	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0050	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0050	"	"	"	"	"	"	
Styrene	ND	0.0050	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
Trichloroethene (TCE)	ND	0.0050	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Vinyl chloride	ND	0.0050	"	"	"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-14 (Solid)
RB5-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS (Continued)									
Xylenes (total)	ND	0.0050	mg/kg	1	B9D0564	04/19/19	04/19/19	EPA 8260B	
Surrogate: Dibromofluoromethane		*84.4 %*	*(73 - 132)*		"	"	"	"	
Surrogate: Toluene-d8		*98.3 %*	*(70 - 126)*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*99.2 %*	*(78 - 118)*		"	"	"	"	
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									**R-01**
Acenaphthene	ND	0.10	mg/kg	10	B9D0605	04/22/19	04/24/19	EPA 8270-SIM	
Acenaphthylene	**1.3**	0.50	"	50	"	"	04/26/19	"	
Anthracene	**0.73**	0.50	"	"	"	"	"	"	
Benz (a) anthracene	**2.9**	0.50	"	"	"	"	"	"	
Benzo (b) fluoranthene	**6.5**	0.50	"	"	"	"	"	"	
Benzo (k) fluoranthene	**4.4**	0.50	"	"	"	"	"	"	
Benzo (a) pyrene	**22**	2.0	"	200	"	"	04/25/19	"	
Benzo (g,h,i) perylene	**67**	16	"	800	"	"	04/25/19	"	
Chrysene	**4.2**	0.50	"	50	"	"	04/26/19	"	
Dibenz (a,h) anthracene	ND	0.20	"	10	"	"	04/24/19	"	**ISlowA**
Fluoranthene	**18**	2.0	"	200	"	"	04/25/19	"	
Fluorene	**0.11**	0.10	"	10	"	"	04/24/19	"	**ISlowA**
Indeno (1,2,3-cd) pyrene	**15**	2.0	"	200	"	"	04/25/19	"	
Naphthalene	**0.23**	0.20	"	10	"	"	04/24/19	"	**ISlowA**
Phenanthrene	**3.5**	0.50	"	50	"	"	04/26/19	"	
Pyrene	**61**	8.0	"	800	"	"	04/25/19	"	
Surrogate: p-Terphenyl-d14		*125 %*	*(13 - 180)*		"	"	*04/26/19*	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-15 (Solid)

RB9-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by ICP									
Lead	**41**	0.49	mg/kg	1	B9E0122	05/06/19	05/07/19	EPA 6010B	
Thallium	ND	0.98	"	"	"	"	"	"	
Volatile Organic TPH by GC/FID									HT-03
TPH Gasoline (C4-C12)	ND	0.49	mg/kg	1	B9E0113	05/03/19	05/04/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*88.3 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									HT-04
TPH Diesel (C13-C22)	ND	10	mg/kg	1	B9E0073	05/02/19	05/03/19	EPA 8015M	
TPH Motor Oil (C23-C40)	ND	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*102 %*	*(67 - 134)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-16 (Solid)

RB9-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	**0.45**	0.085	mg/kg	1	B9D0688	04/24/19	04/24/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.4	mg/kg	1	B9D0566	04/19/19	04/23/19	EPA 6010B	
Arsenic	**4.2**	1.9	"	"	"	"	"	"	
Barium	**640**	0.95	"	"	"	"	"	"	
Beryllium	ND	0.47	"	"	"	"	"	"	
Cadmium	ND	0.24	"	"	"	"	"	"	
Chromium	**20**	0.47	"	"	"	"	"	"	
Cobalt	**7.6**	0.47	"	"	"	"	"	"	
Copper	**16**	0.95	"	"	"	"	"	"	
Lead	**120**	0.47	"	"	"	"	"	"	**N-02, N-03**
Molybdenum	ND	0.47	"	"	"	"	"	"	
Nickel	**16**	0.24	"	"	"	"	"	"	
Selenium	ND	1.9	"	"	"	"	"	"	
Silver	**13**	0.47	"	"	"	"	"	"	
Thallium	**2.0**	0.95	"	"	"	"	"	"	
Vanadium	**26**	0.95	"	"	"	"	"	"	
Zinc	**120**	0.95	"	"	"	"	"	"	
STLC Metals by ICP									
Lead	**190**	0.050	mg/L	1	B9E0157	05/06/19	05/06/19	STLC/EPA 6010B	**N-07**
TCLP Metals by ICP									
Lead	**0.093**	0.050	mg/L	1	B9E0076	05/02/19	05/02/19	EPA 1311/EPA 6010B	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-16 (Solid)

RB9-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.50	mg/kg	1	B9D0596	04/19/19	04/19/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*77.4 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	**420**	100	mg/kg	10	B9D0534	04/18/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	**3300**	500	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*91.2 %*	*(67 - 134)*		"	"	"	"	
Volatile Organic Compounds by GC/MS									
t-Amyl Methyl Ether	ND	0.0049	mg/kg	1	B9D0564	04/19/19	04/19/19	EPA 8260B	
Benzene	ND	0.0049	"	"	"	"	"	"	
Bromobenzene	ND	0.0049	"	"	"	"	"	"	
Bromochloromethane	ND	0.0049	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0049	"	"	"	"	"	"	
Bromoform	ND	0.0049	"	"	"	"	"	"	
Bromomethane	ND	0.0049	"	"	"	"	"	"	
t-Butyl alcohol	ND	0.099	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0049	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0049	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0049	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0049	"	"	"	"	"	"	
Chlorobenzene	ND	0.0049	"	"	"	"	"	"	
Chloroethane	ND	0.0049	"	"	"	"	"	"	
Chloroform	ND	0.0049	"	"	"	"	"	"	
Chloromethane	ND	0.0049	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0049	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0049	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0049	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0049	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0049	"	"	"	"	"	"	
Dibromomethane	ND	0.0049	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0049	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0049	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0049	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0049	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0049	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0049	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0049	"	"	"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-16 (Solid)

RB9-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS (Continued)									
cis-1,2-Dichloroethene	ND	0.0049	mg/kg	1	B9D0564	04/19/19	04/19/19	EPA 8260B	
trans-1,2-Dichloroethene	ND	0.0049	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0049	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.0049	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.0049	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0049	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0049	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0049	"	"	"	"	"	"	
Diisopropyl Ether	ND	0.0049	"	"	"	"	"	"	
Ethanol	ND	4.0	"	"	"	"	"	"	
Ethyl t-Butyl Ether	ND	0.0049	"	"	"	"	"	"	
Ethylbenzene	ND	0.0049	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0049	"	"	"	"	"	"	
4-Isopropyl Toluene	ND	0.0049	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0049	"	"	"	"	"	"	
Methylene chloride	ND	0.0049	"	"	"	"	"	"	
Methyl-t-butyl ether	ND	0.0049	"	"	"	"	"	"	
Naphthalene	ND	0.0049	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0049	"	"	"	"	"	"	
Styrene	ND	0.0049	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0049	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0049	"	"	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.0049	"	"	"	"	"	"	
Toluene	ND	0.0049	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0049	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0049	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0049	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0049	"	"	"	"	"	"	
Trichloroethene (TCE)	ND	0.0049	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0049	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0049	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0049	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0049	"	"	"	"	"	"	
Vinyl chloride	ND	0.0049	"	"	"	"	"	"	
Xylenes (total)	ND	0.0049	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*99.4 %*	*(73 - 132)*		"	"	"	"	
Surrogate: Toluene-d8		*98.3 %*	*(70 - 126)*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*94.1 %*	*(78 - 118)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-16 (Solid)

RB9-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polychlorinated Biphenyls by GC/ECD									C-01, C-06
PCB-1016	ND	0.020	mg/kg	1	B9D0538	04/18/19	04/19/19	EPA 8082	
PCB-1221	ND	0.020	"	"	"	"	"	"	
PCB-1232	ND	0.020	"	"	"	"	"	"	
PCB-1242	ND	0.020	"	"	"	"	"	"	
PCB-1248	ND	0.020	"	"	"	"	"	"	
PCB-1254	ND	0.020	"	"	"	"	"	"	
PCB-1260	ND	0.020	"	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		*118 %*	*(10 - 163)*		"	"	"	"	
Surrogate: 2,4,5,6 Tetrachloro-m-xylene		*90.5 %*	*(10 - 150)*		"	"	"	"	
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									
Acenaphthene	ND	0.0050	mg/kg	1	B9D0605	04/22/19	04/26/19	EPA 8270-SIM	
Acenaphthylene	ND	0.0050	"	"	"	"	"	"	
Anthracene	ND	0.0050	"	"	"	"	"	"	
Benz (a) anthracene	**0.010**	0.0050	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (a) pyrene	**0.014**	0.0050	"	"	"	"	"	"	
Benzo (g,h,i) perylene	**0.011**	0.010	"	"	"	"	"	"	
Chrysene	**0.012**	0.0050	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.010	"	"	"	"	"	"	
Fluoranthene	**0.017**	0.0050	"	"	"	"	"	"	
Fluorene	ND	0.0050	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	**0.0050**	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Phenanthrene	**0.0090**	0.0050	"	"	"	"	"	"	
Pyrene	**0.021**	0.0050	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*104 %*	*(13 - 180)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-17 (Solid)

RB10-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	**1.3**	0.095	mg/kg	1	B9D0688	04/24/19	04/24/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.5	mg/kg	1	B9D0566	04/19/19	04/23/19	EPA 6010B	
Arsenic	**3.7**	2.0	"	"	"	"	"	"	
Barium	**260**	0.99	"	"	"	"	"	"	
Beryllium	ND	0.49	"	"	"	"	"	"	
Cadmium	ND	0.25	"	"	"	"	"	"	
Chromium	**40**	0.49	"	"	"	"	"	"	
Cobalt	**5.1**	0.49	"	"	"	"	"	"	
Copper	**42**	0.99	"	"	"	"	"	"	
Lead	**420**	0.49	"	"	"	"	"	"	**N-02, N-03**
Molybdenum	ND	0.49	"	"	"	"	"	"	
Nickel	**14**	0.25	"	"	"	"	"	"	
Selenium	ND	2.0	"	"	"	"	"	"	
Silver	**0.65**	0.49	"	"	"	"	"	"	
Thallium	**1.1**	0.99	"	"	"	"	"	"	
Vanadium	**19**	0.99	"	"	"	"	"	"	
Zinc	**630**	0.99	"	"	"	"	"	"	
STLC Metals by ICP									
Lead	**53**	0.050	mg/L	1	B9E0157	05/06/19	05/06/19	STLC/EPA 6010B	**N-07**
TCLP Metals by ICP									
Lead	ND	0.050	mg/L	1	B9E0076	05/02/19	05/02/19	EPA 1311/EPA 6010B	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-17 (Solid)

RB10-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.50	mg/kg	1	B9D0596	04/19/19	04/19/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*60.8 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	**54**	10	mg/kg	1	B9D0534	04/18/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	**450**	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*117 %*	*(67 - 134)*		"	"	"	"	
Volatile Organic Compounds by GC/MS									
t-Amyl Methyl Ether	ND	0.0050	mg/kg	1	B9D0564	04/19/19	04/19/19	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Bromobenzene	ND	0.0050	"	"	"	"	"	"	
Bromochloromethane	ND	0.0050	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0050	"	"	"	"	"	"	
Bromoform	ND	0.0050	"	"	"	"	"	"	
Bromomethane	ND	0.0050	"	"	"	"	"	"	
t-Butyl alcohol	ND	0.10	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0050	"	"	"	"	"	"	
Chlorobenzene	ND	0.0050	"	"	"	"	"	"	
Chloroethane	ND	0.0050	"	"	"	"	"	"	
Chloroform	ND	0.0050	"	"	"	"	"	"	
Chloromethane	ND	0.0050	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0050	"	"	"	"	"	"	
Dibromomethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0050	"	"	"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-17 (Solid)

RB10-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS (Continued)									
cis-1,2-Dichloroethene	ND	0.0050	mg/kg	1	B9D0564	04/19/19	04/19/19	EPA 8260B	
trans-1,2-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
Diisopropyl Ether	ND	0.0050	"	"	"	"	"	"	
Ethanol	ND	4.0	"	"	"	"	"	"	
Ethyl t-Butyl Ether	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0050	"	"	"	"	"	"	
4-Isopropyl Toluene	ND	0.0050	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0050	"	"	"	"	"	"	
Methylene chloride	ND	0.0050	"	"	"	"	"	"	
Methyl-t-butyl ether	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0050	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0050	"	"	"	"	"	"	
Styrene	ND	0.0050	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
Trichloroethene (TCE)	ND	0.0050	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Vinyl chloride	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*102 %*	*(73 - 132)*		"	"	"	"	
Surrogate: Toluene-d8		*95.9 %*	*(70 - 126)*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*84.7 %*	*(78 - 118)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-17 (Solid)

RB10-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									
Acenaphthene	ND	0.0050	mg/kg	1	B9D0605	04/22/19	04/24/19	EPA 8270-SIM	
Acenaphthylene	ND	0.0050	"	"	"	"	"	"	
Anthracene	ND	0.0050	"	"	"	"	"	"	
Benz (a) anthracene	ND	0.0050	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.0050	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.010	"	"	"	"	"	"	
Chrysene	**0.0083**	0.0050	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.010	"	"	"	"	"	"	
Fluoranthene	ND	0.0050	"	"	"	"	"	"	
Fluorene	ND	0.0050	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Phenanthrene	ND	0.0050	"	"	"	"	"	"	
Pyrene	ND	0.0050	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*78.7 %*	*(13 - 180)*		"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-18 (Solid)

RB10-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by ICP									
Lead	**4600**	4.9	mg/kg	10	B9E0122	05/06/19	05/07/19	EPA 6010B	**N-01, N-03**
TCLP Metals by ICP									
Lead	**3.3**	0.050	mg/L	1	B9E0807	05/28/19	05/28/19	EPA 1311/EPA 6010B	
Volatile Organic TPH by GC/FID									**HT-03**
TPH Gasoline (C4-C12)	ND	0.50	mg/kg	1	B9E0113	05/03/19	05/04/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*61.9 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									**HT-04**
TPH Diesel (C13-C22)	ND	10	mg/kg	1	B9E0073	05/02/19	05/03/19	EPA 8015M	
TPH Motor Oil (C23-C40)	**110**	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*104 %*	*(67 - 134)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-19 (Solid)

HP4-5

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	ND	0.078	mg/kg	1	B9D0688	04/24/19	04/24/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.5	mg/kg	1	B9D0566	04/19/19	04/23/19	EPA 6010B	
Arsenic	**4.1**	2.0	"	"	"	"	"	"	
Barium	**36**	0.99	"	"	"	"	"	"	
Beryllium	ND	0.49	"	"	"	"	"	"	
Cadmium	ND	0.25	"	"	"	"	"	"	
Chromium	**18**	0.49	"	"	"	"	"	"	
Cobalt	**3.5**	0.49	"	"	"	"	"	"	
Copper	**5.7**	0.99	"	"	"	"	"	"	
Lead	**4.8**	0.49	"	"	"	"	"	"	
Molybdenum	**1.4**	0.49	"	"	"	"	"	"	
Nickel	**19**	0.25	"	"	"	"	"	"	
Selenium	ND	2.0	"	"	"	"	"	"	
Silver	ND	0.49	"	"	"	"	"	"	
Thallium	**1.9**	0.99	"	"	"	"	"	"	
Vanadium	**18**	0.99	"	"	"	"	"	"	
Zinc	**25**	0.99	"	"	"	"	"	"	
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.48	mg/kg	1	B9D0596	04/19/19	04/19/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*80.9 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	ND	10	mg/kg	1	B9D0534	04/18/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	ND	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*95.3 %*	*(67 - 134)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-19 (Solid)

HP4-5

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									
Acenaphthene	ND	0.0050	mg/kg	1	B9D0605	04/22/19	04/24/19	EPA 8270-SIM	
Acenaphthylene	ND	0.0050	"	"	"	"	"	"	
Anthracene	ND	0.0050	"	"	"	"	"	"	
Benz (a) anthracene	ND	0.0050	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.0050	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.010	"	"	"	"	"	"	
Chrysene	ND	0.0050	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.010	"	"	"	"	"	"	
Fluoranthene	ND	0.0050	"	"	"	"	"	"	
Fluorene	ND	0.0050	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Phenanthrene	ND	0.0050	"	"	"	"	"	"	
Pyrene	ND	0.0050	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*93.7 %*	*(13 - 180)*		"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-20 (Solid)
HP4-10

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	**0.66**	0.077	mg/kg	1	B9D0688	04/24/19	04/24/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.3	mg/kg	1	B9D0566	04/19/19	04/23/19	EPA 6010B	
Arsenic	**3.9**	1.9	"	"	"	"	"	"	
Barium	**360**	0.93	"	"	"	"	"	"	
Beryllium	ND	0.46	"	"	"	"	"	"	
Cadmium	ND	0.23	"	"	"	"	"	"	
Chromium	**20**	0.46	"	"	"	"	"	"	
Cobalt	**3.7**	0.46	"	"	"	"	"	"	
Copper	**79**	0.93	"	"	"	"	"	"	
Lead	**830**	0.46	"	"	"	"	"	"	**N-02, N-03**
Molybdenum	ND	0.46	"	"	"	"	"	"	
Nickel	**15**	0.23	"	"	"	"	"	"	
Selenium	ND	1.9	"	"	"	"	"	"	
Silver	**1.9**	0.46	"	"	"	"	"	"	
Thallium	ND	0.93	"	"	"	"	"	"	
Vanadium	**18**	0.93	"	"	"	"	"	"	
Zinc	**1200**	0.93	"	"	"	"	"	"	
STLC Metals by ICP									
Lead	**300**	0.050	mg/L	1	B9E0157	05/06/19	05/06/19	STLC/EPA 6010B	**N-07**
TCLP Metals by ICP									
Lead	**4.7**	0.050	mg/L	1	B9E0076	05/02/19	05/02/19	EPA 1311/EPA 6010B	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-20 (Solid)
HP4-10

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.98	mg/kg	1	B9D0618	04/22/19	04/22/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*77.5 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	**21**	10	mg/kg	1	B9D0534	04/18/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	ND	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*98.4 %*	*(67 - 134)*		"	"	"	"	
Volatile Organic Compounds by GC/MS									
t-Amyl Methyl Ether	ND	0.0050	mg/kg	1	B9D0564	04/19/19	04/19/19	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Bromobenzene	ND	0.0050	"	"	"	"	"	"	
Bromochloromethane	ND	0.0050	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0050	"	"	"	"	"	"	
Bromoform	ND	0.0050	"	"	"	"	"	"	
Bromomethane	ND	0.0050	"	"	"	"	"	"	
t-Butyl alcohol	ND	0.099	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0050	"	"	"	"	"	"	
Chlorobenzene	ND	0.0050	"	"	"	"	"	"	
Chloroethane	ND	0.0050	"	"	"	"	"	"	
Chloroform	ND	0.0050	"	"	"	"	"	"	
Chloromethane	ND	0.0050	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0050	"	"	"	"	"	"	
Dibromomethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0050	"	"	"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-20 (Solid)

HP4-10

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS (Continued)									
cis-1,2-Dichloroethene	ND	0.0050	mg/kg	1	B9D0564	04/19/19	04/19/19	EPA 8260B	
trans-1,2-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
Diisopropyl Ether	ND	0.0050	"	"	"	"	"	"	
Ethanol	ND	4.0	"	"	"	"	"	"	
Ethyl t-Butyl Ether	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0050	"	"	"	"	"	"	
4-Isopropyl Toluene	ND	0.0050	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0050	"	"	"	"	"	"	
Methylene chloride	ND	0.0050	"	"	"	"	"	"	
Methyl-t-butyl ether	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0050	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0050	"	"	"	"	"	"	
Styrene	ND	0.0050	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
Trichloroethene (TCE)	ND	0.0050	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Vinyl chloride	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*98.4 %*	*(73 - 132)*		"	"	"	"	
Surrogate: Toluene-d8		*95.4 %*	*(70 - 126)*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*88.8 %*	*(78 - 118)*		"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-20 (Solid)

HP4-10

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									R-01
Acenaphthene	ND	0.030	mg/kg	2	B9D0605	04/22/19	04/26/19	EPA 8270-SIM	
Acenaphthylene	ND	0.030	"	"	"	"	"	"	
Anthracene	ND	0.030	"	"	"	"	"	"	
Benz (a) anthracene	**0.042**	0.030	"	"	"	"	"	"	
Benzo (b) fluoranthene	**0.054**	0.030	"	"	"	"	"	"	ISlowA
Benzo (k) fluoranthene	ND	0.030	"	"	"	"	"	"	
Benzo (a) pyrene	**0.050**	0.030	"	"	"	"	"	"	ISlowA
Benzo (g,h,i) perylene	ND	0.060	"	"	"	"	"	"	ISlowA
Chrysene	**0.078**	0.030	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.060	"	"	"	"	"	"	
Fluoranthene	**0.034**	0.030	"	"	"	"	"	"	
Fluorene	ND	0.030	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.030	"	"	"	"	"	"	
Naphthalene	ND	0.060	"	"	"	"	"	"	
Phenanthrene	ND	0.030	"	"	"	"	"	"	
Pyrene	**0.064**	0.030	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*120 %*	*(13 - 180)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-21 (Solid)
RB15-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	ND	0.094	mg/kg	1	B9D0688	04/24/19	04/24/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.4	mg/kg	1	B9D0566	04/19/19	04/23/19	EPA 6010B	
Arsenic	**3.9**	1.9	"	"	"	"	"	"	
Barium	**25**	0.97	"	"	"	"	"	"	
Beryllium	ND	0.49	"	"	"	"	"	"	
Cadmium	ND	0.24	"	"	"	"	"	"	
Chromium	**18**	0.49	"	"	"	"	"	"	
Cobalt	**3.8**	0.49	"	"	"	"	"	"	
Copper	**5.9**	0.97	"	"	"	"	"	"	
Lead	**4.2**	0.49	"	"	"	"	"	"	
Molybdenum	**1.3**	0.49	"	"	"	"	"	"	
Nickel	**20**	0.24	"	"	"	"	"	"	
Selenium	ND	1.9	"	"	"	"	"	"	
Silver	ND	0.49	"	"	"	"	"	"	
Thallium	**1.7**	0.97	"	"	"	"	"	"	
Vanadium	**19**	0.97	"	"	"	"	"	"	
Zinc	**24**	0.97	"	"	"	"	"	"	
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	**3.4**	0.50	mg/kg	1	B9D0618	04/22/19	04/22/19	EPA 8015M	D-04
Surrogate: 4-Bromofluorobenzene		*95.7 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	ND	10	mg/kg	1	B9D0534	04/18/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	ND	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*94.0 %*	*(67 - 134)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-21 (Solid)

RB15-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									
Acenaphthene	ND	0.0050	mg/kg	1	B9D0605	04/22/19	04/24/19	EPA 8270-SIM	
Acenaphthylene	ND	0.0050	"	"	"	"	"	"	
Anthracene	ND	0.0050	"	"	"	"	"	"	
Benz (a) anthracene	ND	0.0050	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.0050	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.010	"	"	"	"	"	"	
Chrysene	ND	0.0050	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.010	"	"	"	"	"	"	
Fluoranthene	ND	0.0050	"	"	"	"	"	"	
Fluorene	ND	0.0050	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Phenanthrene	ND	0.0050	"	"	"	"	"	"	
Pyrene	ND	0.0050	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*67.5 %*	*(13 - 180)*		"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-23 (Solid)

RB14-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	ND	0.076	mg/kg	1	B9D0688	04/24/19	04/24/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.3	mg/kg	1	B9D0566	04/19/19	04/23/19	EPA 6010B	
Arsenic	**4.9**	1.8	"	"	"	"	"	"	
Barium	**53**	0.92	"	"	"	"	"	"	
Beryllium	ND	0.46	"	"	"	"	"	"	
Cadmium	ND	0.23	"	"	"	"	"	"	
Chromium	**22**	0.46	"	"	"	"	"	"	
Cobalt	**4.1**	0.46	"	"	"	"	"	"	
Copper	**7.5**	0.92	"	"	"	"	"	"	
Lead	**8.2**	0.46	"	"	"	"	"	"	
Molybdenum	**2.2**	0.46	"	"	"	"	"	"	
Nickel	**23**	0.23	"	"	"	"	"	"	
Selenium	ND	1.8	"	"	"	"	"	"	
Silver	ND	0.46	"	"	"	"	"	"	
Thallium	**2.1**	0.92	"	"	"	"	"	"	
Vanadium	**21**	0.92	"	"	"	"	"	"	
Zinc	**31**	0.92	"	"	"	"	"	"	
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.49	mg/kg	1	B9D0618	04/22/19	04/23/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*84.8 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	ND	10	mg/kg	1	B9D0534	04/18/19	04/18/19	EPA 8015M	
TPH Motor Oil (C23-C40)	ND	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*98.6 %*	*(67 - 134)*		"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-23 (Solid)
RB14-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									
Acenaphthene	ND	0.0050	mg/kg	1	B9D0665	04/23/19	04/24/19	EPA 8270-SIM	
Acenaphthylene	ND	0.0050	"	"	"	"	"	"	
Anthracene	ND	0.0050	"	"	"	"	"	"	
Benz (a) anthracene	ND	0.0050	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.0050	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.010	"	"	"	"	"	"	
Chrysene	ND	0.0050	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.010	"	"	"	"	"	"	
Fluoranthene	ND	0.0050	"	"	"	"	"	"	
Fluorene	ND	0.0050	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Phenanthrene	ND	0.0050	"	"	"	"	"	"	
Pyrene	ND	0.0050	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*90.0 %*	*(13 - 180)*		"	"	"	"	

1901966-24 (Solid)
RB14-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by ICP									
Thallium	ND	0.96	mg/kg	1	B9E0122	05/06/19	05/07/19	EPA 6010B	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-25 (Solid)
HP5-5

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	ND	0.079	mg/kg	1	B9D0688	04/24/19	04/24/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.3	mg/kg	1	B9D0566	04/19/19	04/23/19	EPA 6010B	
Arsenic	**3.2**	1.9	"	"	"	"	"	"	
Barium	**130**	0.93	"	"	"	"	"	"	
Beryllium	**0.51**	0.47	"	"	"	"	"	"	
Cadmium	ND	0.23	"	"	"	"	"	"	
Chromium	**28**	0.47	"	"	"	"	"	"	
Cobalt	**6.8**	0.47	"	"	"	"	"	"	
Copper	**17**	0.93	"	"	"	"	"	"	
Lead	**9.0**	0.47	"	"	"	"	"	"	
Molybdenum	ND	0.47	"	"	"	"	"	"	
Nickel	**33**	0.23	"	"	"	"	"	"	
Selenium	ND	1.9	"	"	"	"	"	"	
Silver	ND	0.47	"	"	"	"	"	"	
Thallium	**2.8**	0.93	"	"	"	"	"	"	
Vanadium	**34**	0.93	"	"	"	"	"	"	
Zinc	**200**	0.93	"	"	"	"	"	"	
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.49	mg/kg	1	B9D0618	04/22/19	04/23/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*88.5 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	**10**	9.9	mg/kg	1	B9D0534	04/18/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	**92**	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*92.0 %*	*(67 - 134)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-25 (Solid)

HP5-5

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									
Acenaphthene	ND	0.0050	mg/kg	1	B9D0665	04/23/19	04/24/19	EPA 8270-SIM	
Acenaphthylene	ND	0.0050	"	"	"	"	"	"	
Anthracene	ND	0.0050	"	"	"	"	"	"	
Benz (a) anthracene	ND	0.0050	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.0050	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.010	"	"	"	"	"	"	
Chrysene	ND	0.0050	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.010	"	"	"	"	"	"	
Fluoranthene	ND	0.0050	"	"	"	"	"	"	
Fluorene	ND	0.0050	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Phenanthrene	ND	0.0050	"	"	"	"	"	"	
Pyrene	ND	0.0050	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*82.5 %*	*(13 - 180)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-26 (Solid)
HP5-10

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	ND	0.091	mg/kg	1	B9D0688	04/24/19	04/24/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.3	mg/kg	1	B9D0566	04/19/19	04/23/19	EPA 6010B	
Arsenic	**5.3**	1.8	"	"	"	"	"	"	
Barium	**170**	0.91	"	"	"	"	"	"	
Beryllium	**0.67**	0.45	"	"	"	"	"	"	
Cadmium	ND	0.23	"	"	"	"	"	"	
Chromium	**44**	0.45	"	"	"	"	"	"	
Cobalt	**8.7**	0.45	"	"	"	"	"	"	
Copper	**20**	0.91	"	"	"	"	"	"	
Lead	**7.1**	0.45	"	"	"	"	"	"	
Molybdenum	ND	0.45	"	"	"	"	"	"	
Nickel	**50**	0.23	"	"	"	"	"	"	
Selenium	ND	1.8	"	"	"	"	"	"	
Silver	ND	0.45	"	"	"	"	"	"	
Thallium	**2.7**	0.91	"	"	"	"	"	"	
Vanadium	**38**	0.91	"	"	"	"	"	"	
Zinc	**59**	0.91	"	"	"	"	"	"	
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.49	mg/kg	1	B9D0618	04/22/19	04/23/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*86.6 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	ND	10	mg/kg	1	B9D0534	04/18/19	04/18/19	EPA 8015M	
TPH Motor Oil (C23-C40)	ND	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*96.9 %*	*(67 - 134)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-26 (Solid)

HP5-10

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									
Acenaphthene	ND	0.0050	mg/kg	1	B9D0665	04/23/19	04/24/19	EPA 8270-SIM	
Acenaphthylene	ND	0.0050	"	"	"	"	"	"	
Anthracene	ND	0.0050	"	"	"	"	"	"	
Benz (a) anthracene	ND	0.0050	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.0050	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.010	"	"	"	"	"	"	
Chrysene	ND	0.0050	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.010	"	"	"	"	"	"	
Fluoranthene	ND	0.0050	"	"	"	"	"	"	
Fluorene	ND	0.0050	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Phenanthrene	ND	0.0050	"	"	"	"	"	"	
Pyrene	ND	0.0050	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*91.3 %*	*(13 - 180)*		"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-27 (Solid)

RB11-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	ND	0.090	mg/kg	1	B9D0688	04/24/19	04/24/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.4	mg/kg	1	B9D0566	04/19/19	04/23/19	EPA 6010B	
Arsenic	**3.4**	2.0	"	"	"	"	"	"	
Barium	**74**	0.98	"	"	"	"	"	"	
Beryllium	ND	0.49	"	"	"	"	"	"	
Cadmium	ND	0.24	"	"	"	"	"	"	
Chromium	**19**	0.49	"	"	"	"	"	"	
Cobalt	**3.2**	0.49	"	"	"	"	"	"	
Copper	**12**	0.98	"	"	"	"	"	"	
Lead	**21**	0.49	"	"	"	"	"	"	
Molybdenum	**1.4**	0.49	"	"	"	"	"	"	
Nickel	**16**	0.24	"	"	"	"	"	"	
Selenium	ND	2.0	"	"	"	"	"	"	
Silver	ND	0.49	"	"	"	"	"	"	
Thallium	**2.0**	0.98	"	"	"	"	"	"	
Vanadium	**31**	0.98	"	"	"	"	"	"	
Zinc	**51**	0.98	"	"	"	"	"	"	
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.50	mg/kg	1	B9D0618	04/22/19	04/23/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*71.8 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	ND	10	mg/kg	1	B9D0534	04/18/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	ND	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*93.8 %*	*(67 - 134)*		"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-27 (Solid)
RB11-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									
Acenaphthene	ND	0.0050	mg/kg	1	B9D0665	04/23/19	04/24/19	EPA 8270-SIM	
Acenaphthylene	ND	0.0050	"	"	"	"	"	"	
Anthracene	ND	0.0050	"	"	"	"	"	"	
Benz (a) anthracene	ND	0.0050	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.0050	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.010	"	"	"	"	"	"	
Chrysene	ND	0.0050	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.010	"	"	"	"	"	"	
Fluoranthene	**0.0067**	0.0050	"	"	"	"	"	"	
Fluorene	ND	0.0050	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Phenanthrene	ND	0.0050	"	"	"	"	"	"	
Pyrene	**0.0077**	0.0050	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*102 %*	*(13 - 180)*		"	"	"	"	

1901966-28 (Solid)
RB11-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by ICP									
Thallium	ND	0.94	mg/kg	1	B9E0122	05/06/19	05/07/19	EPA 6010B	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-29 (Solid)

HP3-5

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	ND	0.092	mg/kg	1	B9D0617	04/22/19	04/23/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.4	mg/kg	1	B9D0587	04/19/19	04/23/19	EPA 6010B	
Arsenic	**2.5**	1.9	"	"	"	"	"	"	
Barium	**61**	0.97	"	"	"	"	"	"	
Beryllium	ND	0.49	"	"	"	"	"	"	
Cadmium	ND	0.24	"	"	"	"	"	"	
Chromium	**13**	0.49	"	"	"	"	"	"	
Cobalt	**5.4**	0.49	"	"	"	"	"	"	
Copper	**8.4**	0.97	"	"	"	"	"	"	
Lead	**10**	0.49	"	"	"	"	"	"	
Molybdenum	ND	0.49	"	"	"	"	"	"	
Nickel	**11**	0.24	"	"	"	"	"	"	
Selenium	ND	1.9	"	"	"	"	"	"	
Silver	ND	0.49	"	"	"	"	"	"	
Thallium	**1.0**	0.97	"	"	"	"	"	"	
Vanadium	**21**	0.97	"	"	"	"	"	"	
Zinc	**23**	0.97	"	"	"	"	"	"	
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.49	mg/kg	1	B9D0618	04/22/19	04/23/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*66.8 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	ND	10	mg/kg	1	B9D0534	04/18/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	**75**	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*94.9 %*	*(67 - 134)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-29 (Solid)

HP3-5

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									R-05
Acenaphthene	ND	0.010	mg/kg	2	B9D0665	04/23/19	04/24/19	EPA 8270-SIM	
Acenaphthylene	ND	0.010	"	"	"	"	"	"	
Anthracene	ND	0.010	"	"	"	"	"	"	
Benz (a) anthracene	ND	0.010	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.010	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.010	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.010	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.020	"	"	"	"	"	"	
Chrysene	ND	0.010	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	"	
Fluoranthene	ND	0.010	"	"	"	"	"	"	
Fluorene	ND	0.010	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.020	"	"	"	"	"	"	
Phenanthrene	ND	0.010	"	"	"	"	"	"	
Pyrene	ND	0.010	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*92.5 %*	*(13 - 180)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-30 (Solid)
HP3-10

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	**0.17**	0.087	mg/kg	1	B9D0617	04/22/19	04/23/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.4	mg/kg	1	B9D0587	04/19/19	04/23/19	EPA 6010B	
Arsenic	**5.5**	1.9	"	"	"	"	"	"	
Barium	**130**	0.97	"	"	"	"	"	"	
Beryllium	**0.72**	0.49	"	"	"	"	"	"	
Cadmium	ND	0.24	"	"	"	"	"	"	
Chromium	**25**	0.49	"	"	"	"	"	"	
Cobalt	**6.4**	0.49	"	"	"	"	"	"	
Copper	**23**	0.97	"	"	"	"	"	"	
Lead	**100**	0.49	"	"	"	"	"	"	**N-02, N-03**
Molybdenum	ND	0.49	"	"	"	"	"	"	
Nickel	**17**	0.24	"	"	"	"	"	"	
Selenium	ND	1.9	"	"	"	"	"	"	
Silver	ND	0.49	"	"	"	"	"	"	
Thallium	ND	0.97	"	"	"	"	"	"	
Vanadium	**38**	0.97	"	"	"	"	"	"	
Zinc	**360**	0.97	"	"	"	"	"	"	
STLC Metals by ICP									
Lead	**0.34**	0.050	mg/L	1	B9E0157	05/06/19	05/06/19	STLC/EPA 6010B	
TCLP Metals by ICP									
Lead	**0.056**	0.050	mg/L	1	B9E0076	05/02/19	05/02/19	EPA 1311/EPA 6010B	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-30 (Solid)
HP3-10

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.49	mg/kg	1	B9D0618	04/22/19	04/23/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*105 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	ND	9.9	mg/kg	1	B9D0534	04/18/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	ND	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*90.0 %*	*(67 - 134)*		"	"	"	"	
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									
Acenaphthene	ND	0.0050	mg/kg	1	B9D0665	04/23/19	04/24/19	EPA 8270-SIM	
Acenaphthylene	ND	0.0050	"	"	"	"	"	"	
Anthracene	ND	0.0050	"	"	"	"	"	"	
Benz (a) anthracene	ND	0.0050	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.0050	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.010	"	"	"	"	"	"	
Chrysene	ND	0.0050	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.010	"	"	"	"	"	"	
Fluoranthene	ND	0.0050	"	"	"	"	"	"	
Fluorene	ND	0.0050	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Phenanthrene	ND	0.0050	"	"	"	"	"	"	
Pyrene	ND	0.0050	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*116 %*	*(13 - 180)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-31 (Solid)

HP2-5

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	**0.29**	0.087	mg/kg	1	B9D0617	04/22/19	04/23/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.4	mg/kg	1	B9D0587	04/19/19	04/23/19	EPA 6010B	
Arsenic	**2.4**	1.9	"	"	"	"	"	"	
Barium	**95**	0.95	"	"	"	"	"	"	
Beryllium	ND	0.48	"	"	"	"	"	"	
Cadmium	ND	0.24	"	"	"	"	"	"	
Chromium	**14**	0.48	"	"	"	"	"	"	
Cobalt	**7.2**	0.48	"	"	"	"	"	"	
Copper	**12**	0.95	"	"	"	"	"	"	
Lead	**16**	0.48	"	"	"	"	"	"	
Molybdenum	ND	0.48	"	"	"	"	"	"	
Nickel	**14**	0.24	"	"	"	"	"	"	
Selenium	ND	1.9	"	"	"	"	"	"	
Silver	ND	0.48	"	"	"	"	"	"	
Thallium	ND	0.95	"	"	"	"	"	"	
Vanadium	**22**	0.95	"	"	"	"	"	"	
Zinc	**32**	0.95	"	"	"	"	"	"	
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.50	mg/kg	1	B9D0618	04/22/19	04/23/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*68.7 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	ND	9.9	mg/kg	1	B9D0534	04/18/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	ND	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*95.0 %*	*(67 - 134)*		"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-31 (Solid)

HP2-5

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									
Acenaphthene	ND	0.0050	mg/kg	1	B9D0665	04/23/19	04/25/19	EPA 8270-SIM	
Acenaphthylene	ND	0.0050	"	"	"	"	"	"	
Anthracene	ND	0.0050	"	"	"	"	"	"	
Benz (a) anthracene	**0.013**	0.0050	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (a) pyrene	**0.026**	0.0050	"	"	"	"	"	"	ISlowA
Benzo (g,h,i) perylene	**0.024**	0.010	"	"	"	"	"	"	ISlowA
Chrysene	**0.020**	0.0050	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.010	"	"	"	"	"	"	
Fluoranthene	**0.012**	0.0050	"	"	"	"	"	"	
Fluorene	ND	0.0050	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	**0.010**	0.0050	"	"	"	"	"	"	ISlowA
Naphthalene	ND	0.010	"	"	"	"	"	"	
Phenanthrene	**0.012**	0.0050	"	"	"	"	"	"	
Pyrene	**0.040**	0.0050	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*88.8 %*	*(13 - 180)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-32 (Solid)
HP2-10

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	ND	0.095	mg/kg	1	B9D0617	04/22/19	04/23/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.5	mg/kg	1	B9D0587	04/19/19	04/23/19	EPA 6010B	
Arsenic	**5.2**	2.0	"	"	"	"	"	"	
Barium	**44**	1.0	"	"	"	"	"	"	
Beryllium	**0.50**	0.50	"	"	"	"	"	"	
Cadmium	ND	0.25	"	"	"	"	"	"	
Chromium	**15**	0.50	"	"	"	"	"	"	
Cobalt	**3.9**	0.50	"	"	"	"	"	"	
Copper	**9.5**	1.0	"	"	"	"	"	"	
Lead	**6.2**	0.50	"	"	"	"	"	"	
Molybdenum	**0.64**	0.50	"	"	"	"	"	"	
Nickel	**19**	0.25	"	"	"	"	"	"	
Selenium	ND	2.0	"	"	"	"	"	"	
Silver	ND	0.50	"	"	"	"	"	"	
Thallium	**1.0**	1.0	"	"	"	"	"	"	
Vanadium	**23**	1.0	"	"	"	"	"	"	
Zinc	**31**	1.0	"	"	"	"	"	"	
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.48	mg/kg	1	B9D0618	04/22/19	04/23/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*85.2 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	ND	10	mg/kg	1	B9D0534	04/18/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	ND	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*93.2 %*	*(67 - 134)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-32 (Solid)
HP2-10

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									
Acenaphthene	ND	0.0050	mg/kg	1	B9D0665	04/23/19	04/24/19	EPA 8270-SIM	
Acenaphthylene	ND	0.0050	"	"	"	"	"	"	
Anthracene	ND	0.0050	"	"	"	"	"	"	
Benz (a) anthracene	ND	0.0050	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.0050	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.010	"	"	"	"	"	"	
Chrysene	ND	0.0050	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.010	"	"	"	"	"	"	
Fluoranthene	ND	0.0050	"	"	"	"	"	"	
Fluorene	ND	0.0050	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Phenanthrene	ND	0.0050	"	"	"	"	"	"	
Pyrene	ND	0.0050	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*96.3 %*	*(13 - 180)*		"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-33 (Solid)
HP1-5

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	ND	0.081	mg/kg	1	B9D0617	04/22/19	04/23/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.3	mg/kg	1	B9D0587	04/19/19	04/23/19	EPA 6010B	
Arsenic	**2.8**	1.9	"	"	"	"	"	"	
Barium	**96**	0.93	"	"	"	"	"	"	
Beryllium	ND	0.46	"	"	"	"	"	"	
Cadmium	ND	0.23	"	"	"	"	"	"	
Chromium	**12**	0.46	"	"	"	"	"	"	
Cobalt	**6.4**	0.46	"	"	"	"	"	"	
Copper	**6.1**	0.93	"	"	"	"	"	"	
Lead	**5.2**	0.46	"	"	"	"	"	"	
Molybdenum	ND	0.46	"	"	"	"	"	"	
Nickel	**12**	0.23	"	"	"	"	"	"	
Selenium	ND	1.9	"	"	"	"	"	"	
Silver	ND	0.46	"	"	"	"	"	"	
Thallium	ND	0.93	"	"	"	"	"	"	
Vanadium	**22**	0.93	"	"	"	"	"	"	
Zinc	**11**	0.93	"	"	"	"	"	"	
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.48	mg/kg	1	B9D0618	04/22/19	04/23/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*89.5 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	ND	10	mg/kg	1	B9D0549	04/19/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	ND	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*96.3 %*	*(67 - 134)*		"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-33 (Solid)

HP1-5

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS									
t-Amyl Methyl Ether	ND	0.0050	mg/kg	1	B9D0578	04/19/19	04/19/19	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Bromobenzene	ND	0.0050	"	"	"	"	"	"	
Bromochloromethane	ND	0.0050	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0050	"	"	"	"	"	"	
Bromoform	ND	0.0050	"	"	"	"	"	"	
Bromomethane	ND	0.0050	"	"	"	"	"	"	
t-Butyl alcohol	ND	0.10	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0050	"	"	"	"	"	"	
Chlorobenzene	ND	0.0050	"	"	"	"	"	"	
Chloroethane	ND	0.0050	"	"	"	"	"	"	
Chloroform	ND	0.0050	"	"	"	"	"	"	
Chloromethane	ND	0.0050	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0050	"	"	"	"	"	"	
Dibromomethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
Diisopropyl Ether	ND	0.0050	"	"	"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-33 (Solid)

HP1-5

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS (Continued)									
Ethanol	ND	4.0	mg/kg	1	B9D0578	04/19/19	04/19/19	EPA 8260B	
Ethyl t-Butyl Ether	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0050	"	"	"	"	"	"	
4-Isopropyl Toluene	ND	0.0050	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0050	"	"	"	"	"	"	
Methylene chloride	ND	0.0050	"	"	"	"	"	"	
Methyl-t-butyl ether	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0050	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0050	"	"	"	"	"	"	
Styrene	ND	0.0050	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
Trichloroethene (TCE)	ND	0.0050	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Vinyl chloride	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*104 %*	*(73 - 132)*		"	"	"	"	
Surrogate: Toluene-d8		*102 %*	*(70 - 126)*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*98.1 %*	*(78 - 118)*		"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-33 (Solid)

HP1-5

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									
Acenaphthene	ND	0.0050	mg/kg	1	B9D0665	04/23/19	04/24/19	EPA 8270-SIM	
Acenaphthylene	ND	0.0050	"	"	"	"	"	"	
Anthracene	ND	0.0050	"	"	"	"	"	"	
Benz (a) anthracene	ND	0.0050	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.0050	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.010	"	"	"	"	"	"	
Chrysene	ND	0.0050	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.010	"	"	"	"	"	"	
Fluoranthene	ND	0.0050	"	"	"	"	"	"	
Fluorene	ND	0.0050	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Phenanthrene	ND	0.0050	"	"	"	"	"	"	
Pyrene	ND	0.0050	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*114 %*	*(13 - 180)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-34 (Solid)
HP1-10

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	ND	0.097	mg/kg	1	B9D0617	04/22/19	04/23/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.3	mg/kg	1	B9D0587	04/19/19	04/23/19	EPA 6010B	
Arsenic	**2.0**	1.8	"	"	"	"	"	"	
Barium	**57**	0.92	"	"	"	"	"	"	
Beryllium	ND	0.46	"	"	"	"	"	"	
Cadmium	ND	0.23	"	"	"	"	"	"	
Chromium	**11**	0.46	"	"	"	"	"	"	
Cobalt	**2.5**	0.46	"	"	"	"	"	"	
Copper	**6.3**	0.92	"	"	"	"	"	"	
Lead	**4.9**	0.46	"	"	"	"	"	"	
Molybdenum	ND	0.46	"	"	"	"	"	"	
Nickel	**8.2**	0.23	"	"	"	"	"	"	
Selenium	ND	1.8	"	"	"	"	"	"	
Silver	ND	0.46	"	"	"	"	"	"	
Thallium	ND	0.92	"	"	"	"	"	"	
Vanadium	**17**	0.92	"	"	"	"	"	"	
Zinc	**18**	0.92	"	"	"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	ND	10	mg/kg	1	B9D0549	04/19/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	ND	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*95.0 %*	*(67 - 134)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-34 (Solid)

HP1-10

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS									
t-Amyl Methyl Ether	ND	0.0050	mg/kg	1	B9D0578	04/19/19	04/19/19	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Bromobenzene	ND	0.0050	"	"	"	"	"	"	
Bromochloromethane	ND	0.0050	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0050	"	"	"	"	"	"	
Bromoform	ND	0.0050	"	"	"	"	"	"	
Bromomethane	ND	0.0050	"	"	"	"	"	"	
t-Butyl alcohol	ND	0.099	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0050	"	"	"	"	"	"	
Chlorobenzene	ND	0.0050	"	"	"	"	"	"	
Chloroethane	ND	0.0050	"	"	"	"	"	"	
Chloroform	ND	0.0050	"	"	"	"	"	"	
Chloromethane	ND	0.0050	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0050	"	"	"	"	"	"	
Dibromomethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
Diisopropyl Ether	ND	0.0050	"	"	"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-34 (Solid)

HP1-10

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS (Continued)									
Ethanol	ND	4.0	mg/kg	1	B9D0578	04/19/19	04/19/19	EPA 8260B	
Ethyl t-Butyl Ether	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0050	"	"	"	"	"	"	
4-Isopropyl Toluene	ND	0.0050	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0050	"	"	"	"	"	"	
Methylene chloride	ND	0.0050	"	"	"	"	"	"	
Methyl-t-butyl ether	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0050	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0050	"	"	"	"	"	"	
Styrene	ND	0.0050	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
Trichloroethene (TCE)	ND	0.0050	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Vinyl chloride	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*104 %*	*(73 - 132)*		"	"	"	"	
Surrogate: Toluene-d8		*104 %*	*(70 - 126)*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*97.9 %*	*(78 - 118)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-34 (Solid)
HP1-10

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									
Acenaphthene	ND	0.0050	mg/kg	1	B9D0665	04/23/19	04/24/19	EPA 8270-SIM	
Acenaphthylene	ND	0.0050	"	"	"	"	"	"	
Anthracene	ND	0.0050	"	"	"	"	"	"	
Benz (a) anthracene	ND	0.0050	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.0050	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.010	"	"	"	"	"	"	
Chrysene	ND	0.0050	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.010	"	"	"	"	"	"	
Fluoranthene	ND	0.0050	"	"	"	"	"	"	
Fluorene	ND	0.0050	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Phenanthrene	ND	0.0050	"	"	"	"	"	"	
Pyrene	ND	0.0050	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*111 %*	*(13 - 180)*		"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-35 (Solid)

RB13-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	ND	0.098	mg/kg	1	B9D0617	04/22/19	04/23/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.4	mg/kg	1	B9D0587	04/19/19	04/23/19	EPA 6010B	
Arsenic	**3.7**	1.9	"	"	"	"	"	"	
Barium	**96**	0.95	"	"	"	"	"	"	
Beryllium	**0.53**	0.47	"	"	"	"	"	"	
Cadmium	ND	0.24	"	"	"	"	"	"	
Chromium	**23**	0.47	"	"	"	"	"	"	
Cobalt	**3.0**	0.47	"	"	"	"	"	"	
Copper	**12**	0.95	"	"	"	"	"	"	
Lead	**5.6**	0.47	"	"	"	"	"	"	
Molybdenum	ND	0.47	"	"	"	"	"	"	
Nickel	**19**	0.24	"	"	"	"	"	"	
Selenium	ND	1.9	"	"	"	"	"	"	
Silver	ND	0.47	"	"	"	"	"	"	
Thallium	**0.95**	0.95	"	"	"	"	"	"	
Vanadium	**31**	0.95	"	"	"	"	"	"	
Zinc	**33**	0.95	"	"	"	"	"	"	
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.49	mg/kg	1	B9D0618	04/22/19	04/23/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*88.1 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	ND	9.9	mg/kg	1	B9D0549	04/18/19	04/18/19	EPA 8015M	
TPH Motor Oil (C23-C40)	ND	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*100 %*	*(67 - 134)*		"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-35 (Solid)

RB13-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									
Acenaphthene	ND	0.0050	mg/kg	1	B9D0665	04/23/19	04/24/19	EPA 8270-SIM	
Acenaphthylene	ND	0.0050	"	"	"	"	"	"	
Anthracene	ND	0.0050	"	"	"	"	"	"	
Benz (a) anthracene	ND	0.0050	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.0050	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.010	"	"	"	"	"	"	
Chrysene	ND	0.0050	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.010	"	"	"	"	"	"	
Fluoranthene	ND	0.0050	"	"	"	"	"	"	
Fluorene	ND	0.0050	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Phenanthrene	ND	0.0050	"	"	"	"	"	"	
Pyrene	ND	0.0050	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*139 %*	*(13 - 180)*		"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-37 (Solid)
RB8-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	**0.15**	0.091	mg/kg	1	B9D0617	04/22/19	04/23/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.3	mg/kg	1	B9D0587	04/19/19	04/23/19	EPA 6010B	
Arsenic	**3.2**	1.9	"	"	"	"	"	"	
Barium	**72**	0.93	"	"	"	"	"	"	
Beryllium	ND	0.46	"	"	"	"	"	"	
Cadmium	ND	0.23	"	"	"	"	"	"	
Chromium	**14**	0.46	"	"	"	"	"	"	
Cobalt	**4.0**	0.46	"	"	"	"	"	"	
Copper	**24**	0.93	"	"	"	"	"	"	
Lead	**120**	0.46	"	"	"	"	"	"	**N-02, N-03**
Molybdenum	ND	0.46	"	"	"	"	"	"	
Nickel	**15**	0.23	"	"	"	"	"	"	
Selenium	ND	1.9	"	"	"	"	"	"	
Silver	ND	0.46	"	"	"	"	"	"	
Thallium	ND	0.93	"	"	"	"	"	"	
Vanadium	**17**	0.93	"	"	"	"	"	"	
Zinc	**100**	0.93	"	"	"	"	"	"	
STLC Metals by ICP									
Lead	**2.4**	0.050	mg/L	1	B9E0157	05/06/19	05/06/19	STLC/EPA 6010B	
TCLP Metals by ICP									
Lead	ND	0.050	mg/L	1	B9E0076	05/02/19	05/02/19	EPA 1311/EPA 6010B	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-37 (Solid)
RB8-2

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.49	mg/kg	1	B9D0618	04/22/19	04/23/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*84.2 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	ND	10	mg/kg	1	B9D0549	04/19/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	**56**	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*96.6 %*	*(67 - 134)*		"	"	"	"	
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									**R-01**
Acenaphthene	ND	0.040	mg/kg	4	B9D0665	04/23/19	04/24/19	EPA 8270-SIM	
Acenaphthylene	ND	0.040	"	"	"	"	"	"	
Anthracene	ND	0.040	"	"	"	"	"	"	
Benz (a) anthracene	**0.045**	0.040	"	"	"	"	"	"	
Benzo (b) fluoranthene	**0.13**	0.040	"	"	"	"	"	"	**ISlowA**
Benzo (k) fluoranthene	**0.053**	0.040	"	"	"	"	"	"	**ISlowA**
Benzo (a) pyrene	**0.27**	0.080	"	8	"	"	04/25/19	"	
Benzo (g,h,i) perylene	**0.65**	0.16	"	"	"	"	"	"	
Chrysene	**0.064**	0.040	"	4	"	"	04/24/19	"	
Dibenz (a,h) anthracene	ND	0.080	"	"	"	"	"	"	
Fluoranthene	**0.39**	0.040	"	"	"	"	"	"	
Fluorene	ND	0.040	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	**0.17**	0.080	"	8	"	"	04/25/19	"	
Naphthalene	ND	0.080	"	4	"	"	04/24/19	"	
Phenanthrene	**0.15**	0.040	"	"	"	"	"	"	
Pyrene	**0.81**	0.080	"	8	"	"	04/25/19	"	
Surrogate: p-Terphenyl-d14		*110 %*	*(13 - 180)*		"	"	*04/24/19*	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-38 (Solid)
RB8-4

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by ICP									
Lead	**46**	0.48	mg/kg	1	B9E0122	05/06/19	05/07/19	EPA 6010B	
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									
Acenaphthene	ND	0.0050	mg/kg	1	B9D0848	04/30/19	05/02/19	EPA 8270-SIM	
Acenaphthylene	ND	0.0050	"	"	"	"	"	"	
Anthracene	ND	0.0050	"	"	"	"	"	"	
Benz (a) anthracene	ND	0.0050	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.0050	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.0050	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	0.010	"	"	"	"	"	"	
Chrysene	ND	0.0050	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.010	"	"	"	"	"	"	
Fluoranthene	ND	0.0050	"	"	"	"	"	"	
Fluorene	ND	0.0050	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Phenanthrene	ND	0.0050	"	"	"	"	"	"	
Pyrene	**0.0076**	0.0050	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*104 %*	*(13 - 180)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-39 (Solid)
RB12-1

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Metals by CVAA									
Mercury	**0.47**	0.098	mg/kg	1	B9D0617	04/22/19	04/23/19	EPA 7471A	
Total Metals by ICP									
Antimony	ND	2.5	mg/kg	1	B9D0587	04/19/19	04/23/19	EPA 6010B	
Arsenic	**4.7**	2.0	"	"	"	"	"	"	
Barium	**150**	0.99	"	"	"	"	"	"	
Beryllium	ND	0.50	"	"	"	"	"	"	
Cadmium	**1.8**	0.25	"	"	"	"	"	"	
Chromium	**17**	0.50	"	"	"	"	"	"	
Cobalt	**5.6**	0.50	"	"	"	"	"	"	
Copper	**54**	0.99	"	"	"	"	"	"	
Lead	**260**	0.50	"	"	"	"	"	"	**N-02, N-03**
Molybdenum	ND	0.50	"	"	"	"	"	"	
Nickel	**19**	0.25	"	"	"	"	"	"	
Selenium	ND	2.0	"	"	"	"	"	"	
Silver	ND	0.50	"	"	"	"	"	"	
Thallium	ND	0.99	"	"	"	"	"	"	
Vanadium	**20**	0.99	"	"	"	"	"	"	
Zinc	**630**	0.99	"	"	"	"	"	"	
STLC Metals by ICP									
Lead	**13**	0.050	mg/L	1	B9E0157	05/06/19	05/06/19	STLC/EPA 6010B	**N-07**
TCLP Metals by ICP									
Lead	**0.69**	0.050	mg/L	1	B9E0076	05/02/19	05/02/19	EPA 1311/EPA 6010B	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-39 (Solid)

RB12-1

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic TPH by GC/FID									
TPH Gasoline (C4-C12)	ND	0.50	mg/kg	1	B9D0618	04/22/19	04/23/19	EPA 8015M	
Surrogate: 4-Bromofluorobenzene		*50.2 %*	*(36 - 163)*		"	"	"	"	
Semi-Volatile Organic TPH by GC/FID									
TPH Diesel (C13-C22)	**120**	10	mg/kg	1	B9D0549	04/19/19	04/19/19	EPA 8015M	
TPH Motor Oil (C23-C40)	**1700**	50	"	"	"	"	"	"	
Surrogate: o-Terphenyl		*81.1 %*	*(67 - 134)*		"	"	"	"	
Volatile Organic Compounds by GC/MS									
t-Amyl Methyl Ether	ND	0.0050	mg/kg	1	B9D0578	04/19/19	04/19/19	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Bromobenzene	ND	0.0050	"	"	"	"	"	"	
Bromochloromethane	ND	0.0050	"	"	"	"	"	"	
Bromodichloromethane	ND	0.0050	"	"	"	"	"	"	
Bromoform	ND	0.0050	"	"	"	"	"	"	
Bromomethane	ND	0.0050	"	"	"	"	"	"	
t-Butyl alcohol	ND	0.10	"	"	"	"	"	"	
n-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.0050	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.0050	"	"	"	"	"	"	
Chlorobenzene	ND	0.0050	"	"	"	"	"	"	
Chloroethane	ND	0.0050	"	"	"	"	"	"	
Chloroform	ND	0.0050	"	"	"	"	"	"	
Chloromethane	ND	0.0050	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.0050	"	"	"	"	"	"	
Dibromochloromethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.0050	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.0050	"	"	"	"	"	"	
Dibromomethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.0050	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.0050	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.0050	"	"	"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-39 (Solid)

RB12-1

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS (Continued)									
cis-1,2-Dichloroethene	ND	0.0050	mg/kg	1	B9D0578	04/19/19	04/19/19	EPA 8260B	
trans-1,2-Dichloroethene	ND	0.0050	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,3-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.0050	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.0050	"	"	"	"	"	"	
Diisopropyl Ether	ND	0.0050	"	"	"	"	"	"	
Ethanol	ND	4.0	"	"	"	"	"	"	
Ethyl t-Butyl Ether	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.0050	"	"	"	"	"	"	
4-Isopropyl Toluene	ND	0.0050	"	"	"	"	"	"	
Isopropylbenzene	ND	0.0050	"	"	"	"	"	"	
Methylene chloride	ND	0.0050	"	"	"	"	"	"	
Methyl-t-butyl ether	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0050	"	"	"	"	"	"	
n-Propylbenzene	ND	0.0050	"	"	"	"	"	"	
Styrene	ND	0.0050	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.0050	"	"	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.0050	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.0050	"	"	"	"	"	"	
Trichloroethene (TCE)	ND	0.0050	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.0050	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.0050	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Vinyl chloride	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		*103 %*	*(73 - 132)*		"	"	"	"	
Surrogate: Toluene-d8		*90.7 %*	*(70 - 126)*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*91.1 %*	*(78 - 118)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

1901966-39 (Solid)

RB12-1

Analyte	Result	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Polychlorinated Biphenyls by GC/ECD									C-01, C-06
PCB-1016	ND	0.020	mg/kg	1	B9D0538	04/18/19	04/19/19	EPA 8082	
PCB-1221	ND	0.020	"	"	"	"	"	"	
PCB-1232	ND	0.020	"	"	"	"	"	"	
PCB-1242	ND	0.020	"	"	"	"	"	"	
PCB-1248	ND	0.020	"	"	"	"	"	"	
PCB-1254	ND	0.020	"	"	"	"	"	"	
PCB-1260	ND	0.020	"	"	"	"	"	"	
Surrogate: Decachlorobiphenyl		*117 %*	*(10 - 163)*		"	"	"	"	
Surrogate: 2,4,5,6 Tetrachloro-m-xylene		*93.6 %*	*(10 - 150)*		"	"	"	"	
Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring									
Acenaphthene	ND	0.010	mg/kg	2	B9D0665	04/23/19	04/25/19	EPA 8270-SIM	
Acenaphthylene	ND	0.010	"	"	"	"	"	"	
Anthracene	ND	0.010	"	"	"	"	"	"	
Benz (a) anthracene	**0.013**	0.010	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.010	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.010	"	"	"	"	"	"	
Benzo (a) pyrene	**0.024**	0.020	"	4	"	"	04/24/19	"	ISlowA
Benzo (g,h,i) perylene	**0.057**	0.040	"	"	"	"	"	"	ISlowA
Chrysene	**0.025**	0.010	"	2	"	"	04/25/19	"	
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	"	
Fluoranthene	**0.033**	0.010	"	"	"	"	"	"	
Fluorene	ND	0.010	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	**0.014**	0.010	"	"	"	"	"	"	ISlowA
Naphthalene	ND	0.020	"	"	"	"	"	"	
Phenanthrene	**0.011**	0.010	"	"	"	"	"	"	
Pyrene	**0.047**	0.010	"	"	"	"	"	"	
Surrogate: p-Terphenyl-d14		*87.5 %*	*(13 - 180)*		"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Total Metals by CVAA - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0617 - EPA 7471A Preparation: EPA 7471A Prep 04/22/19 09:48										
Blank (B9D0617-BLK1)				Analyzed: 04/23/19 12:18						
Mercury	ND	0.10	mg/kg							
LCS (B9D0617-BS1)				Analyzed: 04/23/19 12:14						
Mercury	0.847	0.10	mg/kg	0.833		102	85-115			
LCS Dup (B9D0617-BSD1)				Analyzed: 04/23/19 12:16						
Mercury	0.849	0.10	mg/kg	0.833		102	85-115	0.216	20	
Duplicate (B9D0617-DUP1)	**Source: 1902029-08**			Analyzed: 04/23/19 12:22						
Mercury	0.0160	0.076	mg/kg		0.0260			47.5	20	QR-04
Matrix Spike (B9D0617-MS1)	**Source: 1902029-08**			Analyzed: 04/23/19 12:24						
Mercury	0.703	0.082	mg/kg	0.685	0.0260	98.8	75-125			
Matrix Spike Dup (B9D0617-MSD1)	**Source: 1902029-08**			Analyzed: 04/23/19 12:26						
Mercury	0.881	0.096	mg/kg	0.804	0.0260	106	75-125	22.5	20	QR-02
Post Spike (B9D0617-PS1)	**Source: 1902029-08**			Analyzed: 04/23/19 12:28						
Mercury	5.24		ug/L	5.00	0.202	101	85-115			
Batch B9D0688 - EPA 7471A Preparation: EPA 7471A Prep 04/24/19 09:22										
Blank (B9D0688-BLK1)				Analyzed: 04/24/19 13:27						
Mercury	ND	0.10	mg/kg							
LCS (B9D0688-BS1)				Analyzed: 04/24/19 13:21						
Mercury	0.880	0.10	mg/kg	0.833		106	85-115			
LCS Dup (B9D0688-BSD1)				Analyzed: 04/24/19 13:23						
Mercury	0.965	0.10	mg/kg	0.833		116	85-115	9.14	20	QM-09
Duplicate (B9D0688-DUP1)	**Source: 1902016-01**			Analyzed: 04/24/19 13:31						
Mercury	ND	0.082	mg/kg		ND				20	
Matrix Spike (B9D0688-MS1)	**Source: 1902016-01**			Analyzed: 04/24/19 13:33						
Mercury	0.755	0.082	mg/kg	0.679	ND	111	75-125			
Matrix Spike Dup (B9D0688-MSD1)	**Source: 1902016-01**			Analyzed: 04/24/19 13:35						
Mercury	0.816	0.091	mg/kg	0.755	ND	108	75-125	7.86	20	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Total Metals by CVAA - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0688 - EPA 7471A Preparation: EPA 7471A Prep 04/24/19 09:22										
Post Spike (B9D0688-PS1) **Source: 1902016-01** Analyzed: 04/24/19 13:37										
Mercury	5.38		ug/L	5.00	0.0468	107	85-115			
Batch B9E0123 - EPA 7471A Preparation: EPA 7471A Prep 05/06/19 08:37										
Blank (B9E0123-BLK1) Analyzed: 05/06/19 12:59										
Mercury	ND	0.10	mg/kg							
LCS (B9E0123-BS1) Analyzed: 05/06/19 12:55										
Mercury	0.817	0.10	mg/kg	0.833		98.0	85-115			
LCS Dup (B9E0123-BSD1) Analyzed: 05/06/19 12:57										
Mercury	0.849	0.10	mg/kg	0.833		102	85-115	3.84	20	
Duplicate (B9E0123-DUP1) **Source: 1902178-01** Analyzed: 05/06/19 13:04										
Mercury	0.0660	0.099	mg/kg		0.0676			2.43	20	
Matrix Spike (B9E0123-MS1) **Source: 1902178-01** Analyzed: 05/06/19 13:06										
Mercury	0.873	0.098	mg/kg	0.814	0.0676	98.9	75-125			
Matrix Spike Dup (B9E0123-MSD1) **Source: 1902178-01** Analyzed: 05/06/19 13:08										
Mercury	0.832	0.091	mg/kg	0.762	0.0676	100	75-125	4.90	20	
Post Spike (B9E0123-PS1) **Source: 1902178-01** Analyzed: 05/06/19 13:10										
Mercury	4.90		ug/L	5.00	0.443	89.2	85-115			

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Total Metals by ICP - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0566 - EPA 6010B Preparation: EPA 3050B 04/19/19 09:23										
Blank (B9D0566-BLK1) Analyzed: 04/23/19 16:24										
Antimony	ND	2.5	mg/kg							
Arsenic	ND	2.0	"							
Barium	ND	1.0	"							
Beryllium	ND	0.50	"							
Cadmium	ND	0.25	"							
Chromium	ND	0.50	"							
Cobalt	ND	0.50	"							
Copper	ND	1.0	"							
Lead	ND	0.50	"							
Molybdenum	ND	0.50	"							
Nickel	ND	0.25	"							
Selenium	ND	2.0	"							
Silver	ND	0.50	"							
Thallium	ND	1.0	"							
Vanadium	ND	1.0	"							
Zinc	ND	1.0	"							
LCS (B9D0566-BS1) Analyzed: 04/23/19 16:27										
Antimony	96.2	2.5	mg/kg	100		96.2	80-120			
Arsenic	95.1	2.0	"	100		95.1	80-120			
Barium	98.0	1.0	"	100		98.0	80-120			
Beryllium	96.6	0.50	"	100		96.6	80-120			
Cadmium	98.2	0.25	"	100		98.2	80-120			
Chromium	97.1	0.50	"	100		97.1	80-120			
Cobalt	99.1	0.50	"	100		99.1	80-120			
Copper	99.8	1.0	"	100		99.8	80-120			
Lead	99.6	0.50	"	100		99.6	80-120			
Molybdenum	96.6	0.50	"	100		96.6	80-120			
Nickel	98.6	0.25	"	100		98.6	80-120			
Selenium	94.4	2.0	"	100		94.4	80-120			
Silver	4.91	0.50	"	5.00		98.2	80-120			
Thallium	98.0	1.0	"	100		98.0	80-120			
Vanadium	96.3	1.0	"	100		96.3	80-120			
Zinc	97.6	1.0	"	100		97.6	80-120			

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Total Metals by ICP - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0566 - EPA 6010B Preparation: EPA 3050B 04/19/19 09:23										
LCS Dup (B9D0566-BSD1)			Analyzed: 04/23/19 16:29							
Antimony	95.6	2.5	mg/kg	100		95.6	80-120	0.521	20	
Arsenic	95.8	2.0	"	100		95.8	80-120	0.733	20	
Barium	98.1	1.0	"	100		98.1	80-120	0.0510	20	
Beryllium	96.7	0.50	"	100		96.7	80-120	0.155	20	
Cadmium	98.0	0.25	"	100		98.0	80-120	0.255	20	
Chromium	96.2	0.50	"	100		96.2	80-120	0.879	20	
Cobalt	98.8	0.50	"	100		98.8	80-120	0.253	20	
Copper	98.9	1.0	"	100		98.9	80-120	0.906	20	
Lead	99.6	0.50	"	100		99.6	80-120	0.00	20	
Molybdenum	97.4	0.50	"	100		97.4	80-120	0.824	20	
Nickel	98.4	0.25	"	100		98.4	80-120	0.254	20	
Selenium	94.8	2.0	"	100		94.8	80-120	0.476	20	
Silver	4.85	0.50	"	5.00		97.0	80-120	1.23	20	
Thallium	98.4	1.0	"	100		98.4	80-120	0.408	20	
Vanadium	95.5	1.0	"	100		95.5	80-120	0.834	20	
Zinc	97.0	1.0	"	100		97.0	80-120	0.617	20	
Duplicate (B9D0566-DUP1)	**Source: 1901964-05**		Analyzed: 04/23/19 17:06							
Antimony	ND	2.3	mg/kg		ND				20	
Arsenic	2.59	1.9	"		2.01			25.3	20	QR-04
Barium	17.6	0.93	"		16.5			6.60	20	
Beryllium	ND	0.46	"		ND				20	
Cadmium	1.17	0.23	"		1.32			12.6	20	
Chromium	20.7	0.46	"		22.9			10.1	20	
Cobalt	0.819	0.46	"		1.11			29.7	20	QR-04
Copper	3.19	0.93	"		3.12			2.17	20	
Lead	2.56	0.46	"		2.51			1.88	20	
Molybdenum	2.51	0.46	"		1.28			64.8	20	QR-04
Nickel	9.79	0.23	"		10.6			7.55	20	
Selenium	ND	1.9	"		ND				20	
Silver	ND	0.46	"		ND				20	
Thallium	1.58	0.93	"		1.73			9.40	20	
Vanadium	11.9	0.93	"		13.1			9.40	20	
Zinc	17.8	0.93	"		18.0			0.997	20	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Total Metals by ICP - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0566 - EPA 6010B Preparation: EPA 3050B 04/19/19 09:23										
Matrix Spike (B9D0566-MS1)	**Source: 1901964-05**		Analyzed: 04/23/19 16:31							
Antimony	57.4	2.3	mg/kg	91.5	ND	62.7	10-103			
Arsenic	89.0	1.8	"	91.5	2.01	95.1	75-122			
Barium	107	0.91	"	91.5	16.5	98.9	23-186			
Beryllium	87.6	0.46	"	91.5	ND	95.8	70-127			
Cadmium	89.4	0.23	"	91.5	1.32	96.3	73-120			
Chromium	115	0.46	"	91.5	22.9	101	47-159			
Cobalt	88.5	0.46	"	91.5	1.11	95.5	67-125			
Copper	93.6	0.91	"	91.5	3.12	98.9	60-147			
Lead	89.9	0.46	"	91.5	2.51	95.6	57-134			
Molybdenum	87.7	0.46	"	91.5	1.28	94.5	59-121			
Nickel	97.7	0.23	"	91.5	10.6	95.2	40-154			
Selenium	85.2	1.8	"	91.5	ND	93.1	60-125			
Silver	4.32	0.46	"	4.57	ND	94.4	39-137			
Thallium	85.1	0.91	"	91.5	1.73	91.1	57-126			
Vanadium	103	0.91	"	91.5	13.1	97.8	67-137			
Zinc	105	0.91	"	91.5	18.0	95.4	45-151			
Matrix Spike Dup (B9D0566-MSD1)	**Source: 1901964-05**		Analyzed: 04/23/19 16:34							
Antimony	61.1	2.4	mg/kg	97.8	ND	62.4	10-103	6.23	20	
Arsenic	91.4	2.0	"	97.8	2.01	91.3	75-122	2.68	20	
Barium	108	0.98	"	97.8	16.5	93.4	23-186	0.902	20	
Beryllium	89.3	0.49	"	97.8	ND	91.3	70-127	1.91	20	
Cadmium	91.6	0.24	"	97.8	1.32	92.3	73-120	2.48	20	
Chromium	115	0.49	"	97.8	22.9	94.4	47-159	0.308	20	
Cobalt	90.5	0.49	"	97.8	1.11	91.3	67-125	2.17	20	
Copper	95.7	0.98	"	97.8	3.12	94.6	60-147	2.22	20	
Lead	92.7	0.49	"	97.8	2.51	92.2	57-134	3.04	20	
Molybdenum	90.5	0.49	"	97.8	1.28	91.1	59-121	3.05	20	
Nickel	98.2	0.24	"	97.8	10.6	89.6	40-154	0.534	20	
Selenium	88.0	2.0	"	97.8	ND	90.0	60-125	3.27	20	
Silver	4.51	0.49	"	4.89	ND	92.1	39-137	4.25	20	
Thallium	89.1	0.98	"	97.8	1.73	89.3	57-126	4.65	20	
Vanadium	104	0.98	"	97.8	13.1	92.6	67-137	1.12	20	
Zinc	107	0.98	"	97.8	18.0	90.7	45-151	1.41	20	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Total Metals by ICP - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0566 - EPA 6010B Preparation: EPA 3050B 04/19/19 09:23										
Post Spike (B9D0566-PS1)	**Source: 1901964-05**		Analyzed: 04/23/19 16:36							
Antimony	1.86		mg/L	2.00	0.00841	92.6	75-125			
Arsenic	1.92		"	2.00	0.0396	94.0	75-125			
Barium	2.23		"	2.00	0.325	95.4	75-125			
Beryllium	1.87		"	2.00	0.00372	93.5	75-125			
Cadmium	1.92		"	2.00	0.0261	94.6	75-125			
Chromium	2.31		"	2.00	0.453	93.0	75-125			
Cobalt	1.91		"	2.00	0.0218	94.5	75-125			
Copper	2.00		"	2.00	0.0615	97.1	75-125			
Lead	1.94		"	2.00	0.0496	94.4	75-125			
Molybdenum	1.90		"	2.00	0.0253	93.6	75-125			
Nickel	2.08		"	2.00	0.208	93.8	75-125			
Selenium	1.85		"	2.00	-0.0202	92.6	75-125			
Silver	0.0931		"	0.100	-0.00186	93.1	75-125			
Thallium	1.87		"	2.00	0.0342	91.9	75-125			
Vanadium	2.11		"	2.00	0.258	92.8	75-125			
Zinc	2.22		"	2.00	0.355	93.4	75-125			
Batch B9D0587 - EPA 6010B Preparation: EPA 3050B 04/19/19 15:06										
Blank (B9D0587-BLK1)			Analyzed: 04/23/19 18:48							
Antimony	ND	2.5	mg/kg							
Arsenic	ND	2.0	"							
Barium	ND	1.0	"							
Beryllium	ND	0.50	"							
Cadmium	ND	0.25	"							
Chromium	ND	0.50	"							
Cobalt	ND	0.50	"							
Copper	ND	1.0	"							
Lead	ND	0.50	"							
Molybdenum	ND	0.50	"							
Nickel	ND	0.25	"							
Selenium	ND	2.0	"							
Silver	ND	0.50	"							
Thallium	ND	1.0	"							
Vanadium	ND	1.0	"							
Zinc	ND	1.0	"							

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Total Metals by ICP - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0587 - EPA 6010B Preparation: EPA 3050B 04/19/19 15:06										
LCS (B9D0587-BS1)				Analyzed: 04/23/19 18:25						
Antimony	95.8	2.5	mg/kg	100		95.8	80-120			
Arsenic	95.5	2.0	"	100		95.5	80-120			
Barium	97.5	1.0	"	100		97.5	80-120			
Beryllium	95.0	0.50	"	100		95.0	80-120			
Cadmium	98.2	0.25	"	100		98.2	80-120			
Chromium	95.1	0.50	"	100		95.1	80-120			
Cobalt	99.0	0.50	"	100		99.0	80-120			
Copper	96.4	1.0	"	100		96.4	80-120			
Lead	99.4	0.50	"	100		99.4	80-120			
Molybdenum	96.5	0.50	"	100		96.5	80-120			
Nickel	98.8	0.25	"	100		98.8	80-120			
Selenium	93.8	2.0	"	100		93.8	80-120			
Silver	4.74	0.50	"	5.00		94.8	80-120			
Thallium	95.8	1.0	"	100		95.8	80-120			
Vanadium	93.2	1.0	"	100		93.2	80-120			
Zinc	96.8	1.0	"	100		96.8	80-120			
LCS Dup (B9D0587-BSD1)				Analyzed: 04/23/19 18:28						
Antimony	96.6	2.5	mg/kg	100		96.6	80-120	0.779	20	
Arsenic	96.9	2.0	"	100		96.9	80-120	1.46	20	
Barium	99.4	1.0	"	100		99.4	80-120	1.93	20	
Beryllium	97.0	0.50	"	100		97.0	80-120	2.08	20	
Cadmium	100	0.25	"	100		100	80-120	1.82	20	
Chromium	97.7	0.50	"	100		97.7	80-120	2.70	20	
Cobalt	101	0.50	"	100		101	80-120	1.85	20	
Copper	99.0	1.0	"	100		99.0	80-120	2.66	20	
Lead	101	0.50	"	100		101	80-120	1.99	20	
Molybdenum	97.8	0.50	"	100		97.8	80-120	1.39	20	
Nickel	100	0.25	"	100		100	80-120	1.61	20	
Selenium	96.4	2.0	"	100		96.4	80-120	2.84	20	
Silver	4.82	0.50	"	5.00		96.5	80-120	1.78	20	
Thallium	98.4	1.0	"	100		98.4	80-120	2.68	20	
Vanadium	96.2	1.0	"	100		96.2	80-120	3.17	20	
Zinc	98.8	1.0	"	100		98.8	80-120	1.94	20	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Total Metals by ICP - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0587 - EPA 6010B Preparation: EPA 3050B 04/19/19 15:06										
Duplicate (B9D0587-DUP1) **Source: 1901966-29** Analyzed: 04/23/19 18:54										
Antimony	ND	2.4	mg/kg		ND				20	
Arsenic	3.18	1.9	"		2.45			25.7	20	QR-04
Barium	66.2	0.97	"		60.8			8.49	20	
Beryllium	0.429	0.49	"		0.398			7.35	20	
Cadmium	ND	0.24	"		ND				20	
Chromium	15.0	0.49	"		12.8			15.6	20	
Cobalt	6.72	0.49	"		5.42			21.5	20	QR-04
Copper	8.58	0.97	"		8.39			2.18	20	
Lead	11.8	0.49	"		10.3			13.9	20	
Molybdenum	ND	0.49	"		ND				20	
Nickel	12.1	0.24	"		11.1			8.29	20	
Selenium	ND	1.9	"		ND				20	
Silver	ND	0.49	"		ND				20	
Thallium	1.41	0.97	"		1.01			33.7	20	QR-04
Vanadium	26.3	0.97	"		21.2			21.5	20	QR-04
Zinc	25.0	0.97	"		23.3			6.95	20	
Matrix Spike (B9D0587-MS1) **Source: 1901966-29** Analyzed: 04/23/19 18:30										
Antimony	33.0	2.4	mg/kg	97.4	ND	33.9	10-103			
Arsenic	94.9	1.9	"	97.4	2.45	95.0	75-122			
Barium	166	0.97	"	97.4	60.8	108	23-186			
Beryllium	93.4	0.49	"	97.4	0.398	95.5	70-127			
Cadmium	93.0	0.24	"	97.4	ND	95.6	73-120			
Chromium	111	0.49	"	97.4	12.8	101	47-159			
Cobalt	100	0.49	"	97.4	5.42	97.4	67-125			
Copper	107	0.97	"	97.4	8.39	101	60-147			
Lead	106	0.49	"	97.4	10.3	98.0	57-134			
Molybdenum	86.6	0.49	"	97.4	ND	88.9	59-121			
Nickel	108	0.24	"	97.4	11.1	99.6	40-154			
Selenium	87.8	1.9	"	97.4	ND	90.1	60-125			
Silver	4.39	0.49	"	4.87	ND	90.1	39-137			
Thallium	87.3	0.97	"	97.4	1.01	88.6	57-126			
Vanadium	121	0.97	"	97.4	21.2	102	67-137			
Zinc	119	0.97	"	97.4	23.3	98.3	45-151			

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Total Metals by ICP - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0587 - EPA 6010B Preparation: EPA 3050B 04/19/19 15:06										
Matrix Spike Dup (B9D0587-MSD1)	**Source: 1901966-29**		Analyzed: 04/23/19 18:33							
Antimony	28.6	2.3	mg/kg	92.3	ND	31.0	10-103	14.3	20	
Arsenic	89.9	1.8	"	92.3	2.45	94.7	75-122	5.50	20	
Barium	163	0.92	"	92.3	60.8	111	23-186	1.77	20	
Beryllium	88.1	0.46	"	92.3	0.398	95.1	70-127	5.82	20	
Cadmium	87.5	0.23	"	92.3	ND	94.8	73-120	6.19	20	
Chromium	104	0.46	"	92.3	12.8	99.1	47-159	6.19	20	
Cobalt	95.8	0.46	"	92.3	5.42	97.9	67-125	4.58	20	
Copper	102	0.92	"	92.3	8.39	101	60-147	5.26	20	
Lead	97.0	0.46	"	92.3	10.3	94.0	57-134	8.58	20	
Molybdenum	81.7	0.46	"	92.3	ND	88.5	59-121	5.79	20	
Nickel	103	0.23	"	92.3	11.1	99.8	40-154	4.64	20	
Selenium	82.9	1.8	"	92.3	ND	89.8	60-125	5.73	20	
Silver	4.08	0.46	"	4.61	ND	88.4	39-137	7.30	20	
Thallium	82.6	0.92	"	92.3	1.01	88.4	57-126	5.57	20	
Vanadium	114	0.92	"	92.3	21.2	100	67-137	5.97	20	
Zinc	112	0.92	"	92.3	23.3	96.6	45-151	5.73	20	
Post Spike (B9D0587-PS1)	**Source: 1901966-29**		Analyzed: 04/23/19 18:35							
Antimony	89.7	2.5	mg/kg	99.4	ND	90.2	75-125			
Arsenic	96.3	2.0	"	99.4	2.45	94.4	75-125			
Barium	157	0.99	"	99.4	60.8	97.0	75-125			
Beryllium	93.0	0.50	"	99.4	0.398	93.2	75-125			
Cadmium	93.9	0.25	"	99.4	ND	94.5	75-125			
Chromium	106	0.50	"	99.4	12.8	93.7	75-125			
Cobalt	99.7	0.50	"	99.4	5.42	94.8	75-125			
Copper	105	0.99	"	99.4	8.39	97.2	75-125			
Lead	104	0.50	"	99.4	10.3	94.5	75-125			
Molybdenum	92.6	0.50	"	99.4	ND	93.2	75-125			
Nickel	105	0.25	"	99.4	11.1	94.3	75-125			
Selenium	90.4	2.0	"	99.4	ND	91.0	75-125			
Silver	4.32	0.50	"	4.97	ND	87.0	75-125			
Thallium	89.0	0.99	"	99.4	1.01	88.6	75-125			
Vanadium	114	0.99	"	99.4	21.2	93.4	75-125			
Zinc	117	0.99	"	99.4	23.3	94.1	75-125			

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Total Metals by ICP - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9E0122 - EPA 6010B Preparation: EPA 3050B 05/06/19 08:31										
Blank (B9E0122-BLK1)			Analyzed: 05/06/19 14:11							
Arsenic	ND	2.0	mg/kg							
Barium	ND	1.0	"							
Chromium	ND	0.50	"							
Lead	ND	0.50	"							
Thallium	ND	1.0	"							
Zinc	ND	1.0	"							
LCS (B9E0122-BS1)			Analyzed: 05/06/19 14:00							
Arsenic	109	2.0	mg/kg	100		109	80-120			
Barium	113	1.0	"	100		113	80-120			
Chromium	112	0.50	"	100		112	80-120			
Lead	114	0.50	"	100		114	80-120			
Thallium	114	1.0	"	100		114	80-120			
Zinc	113	1.0	"	100		113	80-120			
LCS Dup (B9E0122-BSD1)			Analyzed: 05/06/19 14:13							
Arsenic	112	2.0	mg/kg	100		112	80-120	2.27	20	
Barium	113	1.0	"	100		113	80-120	0.0444	20	
Chromium	113	0.50	"	100		113	80-120	0.935	20	
Lead	116	0.50	"	100		116	80-120	1.13	20	
Thallium	108	1.0	"	100		108	80-120	5.61	20	
Zinc	115	1.0	"	100		115	80-120	1.23	20	
Duplicate (B9E0122-DUP1)	**Source: 1902230-01**		Analyzed: 05/06/19 14:19							
Arsenic	3.96	1.9	mg/kg		3.33			17.3	20	
Barium	84.3	0.96	"		82.0			2.79	20	
Chromium	12.5	0.48	"		14.3			13.1	20	
Lead	3.04	0.48	"		3.08			1.26	20	
Thallium	3.23	0.96	"		3.43			5.85	20	
Zinc	41.5	0.96	"		44.3			6.66	20	
Matrix Spike (B9E0122-MS1)	**Source: 1902230-01**		Analyzed: 05/06/19 14:16							
Arsenic	115	2.0	mg/kg	98.6	3.33	113	75-122			
Barium	197	0.99	"	98.6	82.0	116	23-186			
Chromium	124	0.49	"	98.6	14.3	112	47-159			
Lead	111	0.49	"	98.6	3.08	110	57-134			
Thallium	108	0.99	"	98.6	3.43	107	57-126			
Zinc	154	0.99	"	98.6	44.3	112	45-151			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Total Metals by ICP - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9E0122 - EPA 6010B Preparation: EPA 3050B 05/06/19 08:31										
Matrix Spike Dup (B9E0122-MSD1)	**Source: 1902230-01**		Analyzed: 05/06/19 14:29							
Arsenic	110	1.9	mg/kg	95.7	3.33	112	75-122	3.96	20	
Barium	189	0.96	"	95.7	82.0	112	23-186	4.14	20	
Chromium	120	0.48	"	95.7	14.3	110	47-159	3.65	20	
Lead	108	0.48	"	95.7	3.08	109	57-134	3.10	20	
Thallium	104	0.96	"	95.7	3.43	105	57-126	4.06	20	
Zinc	150	0.96	"	95.7	44.3	111	45-151	2.79	20	
Post Spike (B9E0122-PS1)	**Source: 1902230-01**		Analyzed: 05/06/19 14:21							
Arsenic	2.03		mg/L	2.00	0.0693	98.2	75-125			
Barium	3.70		"	2.00	1.71	99.7	75-125			
Chromium	2.24		"	2.00	0.298	96.9	75-125			
Lead	1.99		"	2.00	0.0642	96.5	75-125			
Thallium	1.91		"	2.00	0.0713	91.7	75-125			
Zinc	2.92		"	2.00	0.922	100	75-125			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

STLC Metals by CVAA - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9E0176 - STLC/EPA 7470A Preparation: EPA 7471A Leachate 05/07/19 09:23										
Blank (B9E0176-BLK1)				Analyzed: 05/07/19 13:11						
Mercury	ND	0.0010	mg/L							
LCS (B9E0176-BS1)				Analyzed: 05/07/19 13:07						
Mercury	0.0510	0.0010	mg/L	0.0500		102	85-115			
LCS Dup (B9E0176-BSD1)				Analyzed: 05/07/19 13:09						
Mercury	0.0460	0.0010	mg/L	0.0500		92.0	85-115	10.2	20	
Duplicate (B9E0176-DUP1)	**Source: 1901966-14**			Analyzed: 05/07/19 13:15						
Mercury	ND	0.0010	mg/L		ND				20	
Leach Fluid Blank (B9E0176-LBK1)				Analyzed: 05/07/19 13:23						
Mercury	ND	0.0010	mg/L							
Matrix Spike (B9E0176-MS1)	**Source: 1901966-14**			Analyzed: 05/07/19 13:17						
Mercury	0.0455	0.0010	mg/L	0.0500	ND	91.0	75-125			
Matrix Spike Dup (B9E0176-MSD1)	**Source: 1901966-14**			Analyzed: 05/07/19 13:19						
Mercury	0.0502	0.0010	mg/L	0.0500	ND	100	75-125	9.88	20	
Post Spike (B9E0176-PS1)	**Source: 1901966-14**			Analyzed: 05/07/19 13:21						
Mercury	5.00		ug/L	5.00	0.0388	99.2	85-115			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

STLC Metals by ICP - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9E0157 - STLC/EPA 6010B Preparation: EPA 3010A Leachate 05/06/19 15:59										
Blank (B9E0157-BLK1)			Analyzed: 05/06/19 16:44							
Barium	ND	0.010	mg/L							
Chromium	ND	0.010	"							
Lead	ND	0.010	"							
Zinc	ND	0.050	"							
LCS (B9E0157-BS1)			Analyzed: 05/06/19 16:49							
Barium	2.09	0.010	mg/L	2.00		104	80-120			
Chromium	2.09	0.010	"	2.00		104	80-120			
Lead	2.15	0.010	"	2.00		107	80-120			
Zinc	2.09	0.050	"	2.00		105	80-120			
LCS Dup (B9E0157-BSD1)			Analyzed: 05/06/19 16:52							
Barium	2.14	0.010	mg/L	2.00		107	80-120	2.46	20	
Chromium	2.13	0.010	"	2.00		107	80-120	2.04	20	
Lead	2.20	0.010	"	2.00		110	80-120	2.16	20	
Zinc	2.14	0.050	"	2.00		107	80-120	2.27	20	
Duplicate (B9E0157-DUP1) **Source: 1901966-08**			Analyzed: 05/06/19 17:13							
Barium	13.0	0.050	mg/L		12.9			1.12	20	
Chromium	0.202	0.050	"		0.188			7.18	20	
Lead	102	0.050	"		101			0.494	20	
Zinc	29.9	0.25	"		29.6			0.840	20	
Leach Fluid Blank (B9E0157-LBK1)			Analyzed: 05/06/19 16:46							
Barium	0.155	0.050	mg/L							B-01
Chromium	ND	0.050	"							
Lead	ND	0.050	"							
Zinc	0.114	0.25	"							B-02
Matrix Spike (B9E0157-MS1) **Source: 1901966-08**			Analyzed: 05/06/19 16:54							
Barium	23.3	0.050	mg/L	10.0	12.9	104	70-132			
Chromium	10.8	0.050	"	10.0	0.188	106	82-123			
Lead	111	0.050	"	10.0	101	102	79-121			
Zinc	40.2	0.25	"	10.0	29.6	105	72-140			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

STLC Metals by ICP - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9E0157 - STLC/EPA 6010B Preparation: EPA 3010A Leachate 05/06/19 15:59										
Matrix Spike Dup (B9E0157-MSD1) **Source: 1901966-08** Analyzed: 05/06/19 16:57										
Barium	23.2	0.050	mg/L	10.0	12.9	103	70-132	0.538	20	
Chromium	10.8	0.050	"	10.0	0.188	107	82-123	0.323	20	
Lead	111	0.050	"	10.0	101	98.0	79-121	0.360	20	
Zinc	40.0	0.25	"	10.0	29.6	104	72-140	0.299	20	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

TCLP Metals by ICP - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9E0076 - EPA 1311/EPA 6010B Preparation: EPA 3010A Leachate 05/02/19 14:05										
Blank (B9E0076-BLK1)			Analyzed: 05/02/19 15:10							
Chromium	ND	0.010	mg/L							
Lead	ND	0.010	"							
LCS (B9E0076-BS1)			Analyzed: 05/02/19 15:15							
Chromium	2.11	0.010	mg/L	2.00		106	80-120			
Lead	2.14	0.010	"	2.00		107	80-120			
LCS Dup (B9E0076-BSD1)			Analyzed: 05/02/19 15:18							
Chromium	2.03	0.010	mg/L	2.00		102	80-120	3.76	20	
Lead	2.13	0.010	"	2.00		107	80-120	0.562	20	
Duplicate (B9E0076-DUP1) **Source: 1901966-08**			Analyzed: 05/02/19 15:39							
Chromium	ND	0.050	mg/L		ND				20	
Lead	0.811	0.050	"		0.828			2.07	20	
Leach Fluid Blank (B9E0076-LBK1)			Analyzed: 05/02/19 15:12							
Chromium	ND	0.050	mg/L							
Lead	ND	0.050	"							
Matrix Spike (B9E0076-MS1) **Source: 1901966-08**			Analyzed: 05/02/19 15:20							
Chromium	10.4	0.050	mg/L	10.0	ND	104	82-123			
Lead	11.1	0.050	"	10.0	0.828	102	79-121			
Matrix Spike Dup (B9E0076-MSD1) **Source: 1901966-08**			Analyzed: 05/02/19 15:31							
Chromium	10.4	0.050	mg/L	10.0	ND	104	82-123	0.240	20	
Lead	11.1	0.050	"	10.0	0.828	102	79-121	0.181	20	
Batch B9E0807 - EPA 1311/EPA 6010B Preparation: EPA 3010A Leachate 05/28/19 11:37										
Blank (B9E0807-BLK1)			Analyzed: 05/28/19 13:17							
Lead	ND	0.010	mg/L							
LCS (B9E0807-BS1)			Analyzed: 05/28/19 12:59							
Lead	2.09	0.010	mg/L	2.00		105	80-120			
LCS Dup (B9E0807-BSD1)			Analyzed: 05/28/19 13:02							
Lead	2.09	0.010	mg/L	2.00		105	80-120	0.00	20	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

TCLP Metals by ICP - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9E0807 - EPA 1311/EPA 6010B Preparation: EPA 3010A Leachate 05/28/19 11:37										
Duplicate (B9E0807-DUP1)	**Source: 1901966-13**			Analyzed: 05/28/19 13:28						
Lead	ND	0.050	mg/L		0.0300				20	
Leach Fluid Blank (B9E0807-LBK1)				Analyzed: 05/28/19 13:20						
Lead	ND	0.050	mg/L							
Matrix Spike (B9E0807-MS1)	**Source: 1901966-13**			Analyzed: 05/28/19 13:04						
Lead	10.1	0.050	mg/L	10.0	0.0300	101	78-119			
Matrix Spike Dup (B9E0807-MSD1)	**Source: 1901966-13**			Analyzed: 05/28/19 13:07						
Lead	10.2	0.050	mg/L	10.0	0.0300	101	78-119	0.691	20	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Volatile Organic TPH by GC/FID - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0596 - EPA 8015M Preparation: EPA 5035/5030B MEOH GC 04/19/19 16:42										
Blank (B9D0596-BLK1)			Analyzed: 04/19/19 17:54							
TPH Gasoline (C4-C12)	ND	0.50	mg/kg							
Surrogate: 4-Bromofluorobenzene	*0.109*		"	*0.125*		*87.5*	*36-163*			
LCS (B9D0596-BS1)			Analyzed: 04/19/19 16:56							
TPH Gasoline (C4-C12)	0.477	0.50	mg/kg	0.498		95.9	64-161			
Surrogate: 4-Bromofluorobenzene	*0.119*		"	*0.125*		*95.7*	*36-163*			
LCS Dup (B9D0596-BSD1)			Analyzed: 04/19/19 17:25							
TPH Gasoline (C4-C12)	0.484	0.50	mg/kg	0.499		96.9	64-161	1.27	20	
Surrogate: 4-Bromofluorobenzene	*0.119*		"	*0.125*		*95.4*	*36-163*			
Duplicate (B9D0596-DUP1)	**Source: 1901966-01**		Analyzed: 04/19/19 18:52							
TPH Gasoline (C4-C12)	ND	0.49	mg/kg		ND				20	
Surrogate: 4-Bromofluorobenzene	*0.0940*		"	*0.122*		*76.8*	*36-163*			
Matrix Spike (B9D0596-MS1)	**Source: 1901966-01**		Analyzed: 04/19/19 23:43							
TPH Gasoline (C4-C12)	0.237	0.50	mg/kg	0.498	ND	47.6	10-161			
Surrogate: 4-Bromofluorobenzene	*0.109*		"	*0.125*		*87.3*	*36-163*			
Matrix Spike Dup (B9D0596-MSD1)	**Source: 1901966-01**		Analyzed: 04/20/19 00:12							
TPH Gasoline (C4-C12)	0.293	0.49	mg/kg	0.488	ND	59.9	10-161	21.1	20	QR-02
Surrogate: 4-Bromofluorobenzene	*0.105*		"	*0.122*		*86.2*	*36-163*			
Batch B9D0618 - EPA 8015M Preparation: EPA 5035/5030B MEOH GC 04/22/19 09:51										
Blank (B9D0618-BLK1)			Analyzed: 04/22/19 11:57							
TPH Gasoline (C4-C12)	ND	0.50	mg/kg							
Surrogate: 4-Bromofluorobenzene	*0.107*		"	*0.125*		*85.9*	*36-163*			
LCS (B9D0618-BS1)			Analyzed: 04/22/19 10:59							
TPH Gasoline (C4-C12)	0.452	0.50	mg/kg	0.499		90.6	64-161			
Surrogate: 4-Bromofluorobenzene	*0.117*		"	*0.125*		*93.4*	*36-163*			
LCS Dup (B9D0618-BSD1)			Analyzed: 04/22/19 11:28							
TPH Gasoline (C4-C12)	0.454	0.50	mg/kg	0.500		90.7	64-161	0.332	20	
Surrogate: 4-Bromofluorobenzene	*0.117*		"	*0.125*		*93.7*	*36-163*			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Volatile Organic TPH by GC/FID - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0618 - EPA 8015M Preparation: EPA 5035/5030B MEOH GC 04/22/19 09:51										
Duplicate (B9D0618-DUP1)	**Source: 1901890-02RE1**			Analyzed: 04/22/19 12:55						
TPH Gasoline (C4-C12)	ND	0.50	mg/kg		ND				20	
Surrogate: 4-Bromofluorobenzene	*0.0537*		"	*0.124*		*43.2*	*36-163*			
Matrix Spike (B9D0618-MS1)	**Source: 1901966-21**			Analyzed: 04/23/19 08:46						
TPH Gasoline (C4-C12)	9.16	0.50	mg/kg	0.495	3.41	NR	10-161			**QM-4X**
Surrogate: 4-Bromofluorobenzene	*19.7*		"	*0.124*		*NR*	*36-163*			***S-02***
Matrix Spike Dup (B9D0618-MSD1)	**Source: 1901966-21**			Analyzed: 04/23/19 09:15						
TPH Gasoline (C4-C12)	3.96	0.50	mg/kg	0.499	3.41	110	10-161	79.3	20	**QR-04**
Surrogate: 4-Bromofluorobenzene	*9.22*		"	*0.125*		*NR*	*36-163*			***S-02***
Batch B9E0113 - EPA 8015M Preparation: EPA 5035/5030B MEOH GC 05/03/19 15:32										
Blank (B9E0113-BLK1)				Analyzed: 05/04/19 01:34						
TPH Gasoline (C4-C12)	ND	0.50	mg/kg							
Surrogate: 4-Bromofluorobenzene	*0.123*		"	*0.125*		*98.5*	*36-163*			
LCS (B9E0113-BS1)				Analyzed: 05/04/19 00:36						
TPH Gasoline (C4-C12)	0.588	0.50	mg/kg	0.500		118	64-161			
Surrogate: 4-Bromofluorobenzene	*0.129*		"	*0.125*		*103*	*36-163*			
LCS Dup (B9E0113-BSD1)				Analyzed: 05/04/19 01:05						
TPH Gasoline (C4-C12)	0.600	0.50	mg/kg	0.500		120	64-161	2.01	20	
Surrogate: 4-Bromofluorobenzene	*0.129*		"	*0.125*		*103*	*36-163*			
Duplicate (B9E0113-DUP1)	**Source: 1901966-07**			Analyzed: 05/04/19 02:32						
TPH Gasoline (C4-C12)	ND	0.49	mg/kg		ND				20	
Surrogate: 4-Bromofluorobenzene	*0.0774*		"	*0.123*		*63.2*	*36-163*			
Matrix Spike (B9E0113-MS1)	**Source: 1901966-07**			Analyzed: 05/04/19 13:11						
TPH Gasoline (C4-C12)	0.351	0.50	mg/kg	0.500	ND	70.1	10-161			
Surrogate: 4-Bromofluorobenzene	*0.106*		"	*0.125*		*84.6*	*36-163*			
Matrix Spike Dup (B9E0113-MSD1)	**Source: 1901966-07**			Analyzed: 05/04/19 13:40						
TPH Gasoline (C4-C12)	0.274	0.49	mg/kg	0.490	ND	55.9	10-161	24.6	20	**QR-02**
Surrogate: 4-Bromofluorobenzene	*0.104*		"	*0.123*		*85.0*	*36-163*			

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Semi-Volatile Organic TPH by GC/FID - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0534 - EPA 8015M Preparation: EPA 3550C 04/18/19 13:15										
Blank (B9D0534-BLK1)				Analyzed: 04/18/19 18:58						
TPH Diesel (C13-C22)	ND	10	mg/kg							
TPH Motor Oil (C23-C40)	ND	50	"							
Surrogate: o-Terphenyl	*49.7*		*"*	*50.0*		*99.4*	*67-134*			
LCS (B9D0534-BS1)				Analyzed: 04/18/19 18:00						
TPH Diesel (C13-C22)	509	10	mg/kg	500		102	74-125			
TPH Motor Oil (C23-C40)	533	50	"	500		107	84-125			
Surrogate: o-Terphenyl	*49.6*		*"*	*50.0*		*99.2*	*67-134*			
LCS Dup (B9D0534-BSD1)				Analyzed: 04/18/19 18:15						
TPH Diesel (C13-C22)	515	10	mg/kg	500		103	74-125	1.12	20	
TPH Motor Oil (C23-C40)	532	50	"	500		106	84-125	0.284	20	
Surrogate: o-Terphenyl	*47.5*		*"*	*50.0*		*95.1*	*67-134*			
Duplicate (B9D0534-DUP1)	**Source: 1901966-23**			Analyzed: 04/18/19 16:48						
TPH Diesel (C13-C22)	ND	10	mg/kg		ND				20	
TPH Motor Oil (C23-C40)	ND	50	"		ND				20	
Surrogate: o-Terphenyl	*49.0*		*"*	*49.9*		*98.2*	*67-134*			
Matrix Spike (B9D0534-MS1)	**Source: 1901966-23**			Analyzed: 04/18/19 18:29						
TPH Diesel (C13-C22)	519	10	mg/kg	499	ND	104	48-150			
TPH Motor Oil (C23-C40)	549	50	"	499	ND	110	78-136			
Surrogate: o-Terphenyl	*49.3*		*"*	*49.9*		*98.9*	*67-134*			
Matrix Spike Dup (B9D0534-MSD1)	**Source: 1901966-23**			Analyzed: 04/18/19 18:44						
TPH Diesel (C13-C22)	510	10	mg/kg	498	ND	102	48-150	1.76	20	
TPH Motor Oil (C23-C40)	552	50	"	498	ND	111	78-136	0.525	20	
Surrogate: o-Terphenyl	*49.1*		*"*	*49.8*		*98.5*	*67-134*			
Batch B9D0549 - EPA 8015M Preparation: EPA 3550C 04/18/19 15:58										
Blank (B9D0549-BLK1)				Analyzed: 04/18/19 21:50						
TPH Diesel (C13-C22)	ND	10	mg/kg							
TPH Motor Oil (C23-C40)	ND	50	"							
Surrogate: o-Terphenyl	*49.1*		*"*	*50.0*		*98.2*	*67-134*			

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Semi-Volatile Organic TPH by GC/FID - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0549 - EPA 8015M Preparation: EPA 3550C 04/18/19 15:58										
LCS (B9D0549-BS1)				Analyzed: 04/18/19 20:52						
TPH Diesel (C13-C22)	508	10	mg/kg	500		102	74-125			
TPH Motor Oil (C23-C40)	532	50	"	500		106	84-125			
Surrogate: o-Terphenyl	*49.6*		*"*	*50.0*		*99.1*	*67-134*			
LCS Dup (B9D0549-BSD1)				Analyzed: 04/18/19 21:07						
TPH Diesel (C13-C22)	495	10	mg/kg	500		98.9	74-125	2.61	20	
TPH Motor Oil (C23-C40)	521	50	"	500		104	84-125	2.03	20	
Surrogate: o-Terphenyl	*48.2*		*"*	*50.0*		*96.4*	*67-134*			
Duplicate (B9D0549-DUP1)	**Source: 1901966-35**			Analyzed: 04/18/19 22:05						
TPH Diesel (C13-C22)	ND	9.9	mg/kg		ND				20	
TPH Motor Oil (C23-C40)	ND	50	"		ND				20	
Surrogate: o-Terphenyl	*49.2*		*"*	*49.7*		*99.1*	*67-134*			
Matrix Spike (B9D0549-MS1)	**Source: 1901966-35**			Analyzed: 04/18/19 21:21						
TPH Diesel (C13-C22)	499	10	mg/kg	499	ND	100	48-150			
TPH Motor Oil (C23-C40)	532	50	"	499	ND	107	78-136			
Surrogate: o-Terphenyl	*47.1*		*"*	*49.9*		*94.6*	*67-134*			
Matrix Spike Dup (B9D0549-MSD1)	**Source: 1901966-35**			Analyzed: 04/18/19 21:36						
TPH Diesel (C13-C22)	492	9.9	mg/kg	496	ND	99.3	48-150	1.52	20	
TPH Motor Oil (C23-C40)	513	50	"	496	ND	103	78-136	3.67	20	
Surrogate: o-Terphenyl	*48.1*		*"*	*49.6*		*97.0*	*67-134*			
Batch B9E0073 - EPA 8015M Preparation: EPA 3550C 05/02/19 15:57										
Blank (B9E0073-BLK1)				Analyzed: 05/02/19 17:56						
TPH Diesel (C13-C22)	ND	10	mg/kg							
TPH Motor Oil (C23-C40)	ND	50	"							
Surrogate: o-Terphenyl	*42.2*		*"*	*50.0*		*84.4*	*67-134*			
LCS (B9E0073-BS1)				Analyzed: 05/03/19 12:28						
TPH Diesel (C13-C22)	511	10	mg/kg	500		102	74-125			
TPH Motor Oil (C23-C40)	520	50	"	500		104	84-125			
Surrogate: o-Terphenyl	*50.5*		*"*	*50.0*		*101*	*67-134*			

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Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Semi-Volatile Organic TPH by GC/FID - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9E0073 - EPA 8015M Preparation: EPA 3550C 05/02/19 15:57										
LCS Dup (B9E0073-BSD1)			Analyzed: 05/03/19 12:42							
TPH Diesel (C13-C22)	505	10	mg/kg	500		101	74-125	1.17	20	
TPH Motor Oil (C23-C40)	519	50	"	500		104	84-125	0.241	20	
Surrogate: o-Terphenyl	*50.0*		*"*	*50.0*		*100*	*67-134*			
Duplicate (B9E0073-DUP1)	**Source: 1902231-06**		Analyzed: 05/02/19 18:10							
TPH Diesel (C13-C22)	ND	10	mg/kg		ND				20	
TPH Motor Oil (C23-C40)	ND	50	"		ND				20	
Surrogate: o-Terphenyl	*41.2*		*"*	*49.8*		*82.8*	*67-134*			
Matrix Spike (B9E0073-MS1)	**Source: 1902231-06**		Analyzed: 05/02/19 17:27							
TPH Diesel (C13-C22)	439	9.9	mg/kg	497	ND	88.5	48-150			
TPH Motor Oil (C23-C40)	432	50	"	497	ND	87.0	78-136			
Surrogate: o-Terphenyl	*42.2*		*"*	*49.7*		*85.1*	*67-134*			
Matrix Spike Dup (B9E0073-MSD1)	**Source: 1902231-06**		Analyzed: 05/02/19 17:42							
TPH Diesel (C13-C22)	429	10	mg/kg	499	ND	86.0	48-150	2.30	20	
TPH Motor Oil (C23-C40)	421	50	"	499	ND	84.5	78-136	2.42	20	
Surrogate: o-Terphenyl	*43.0*		*"*	*49.9*		*86.1*	*67-134*			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Batch B9D0564 - EPA 8260B Preparation: EPA 5035/5030B MEOH 04/19/19 09:11

Blank (B9D0564-BLK1) Analyzed: 04/19/19 12:00

t-Amyl Methyl Ether	ND	0.0050	mg/kg
Benzene	ND	0.0050	"
Bromobenzene	ND	0.0050	"
Bromochloromethane	ND	0.0050	"
Bromodichloromethane	ND	0.0050	"
Bromoform	ND	0.0050	"
Bromomethane	ND	0.0050	"
t-Butyl alcohol	ND	0.10	"
n-Butylbenzene	ND	0.0050	"
sec-Butylbenzene	ND	0.0050	"
tert-Butylbenzene	ND	0.0050	"
Carbon tetrachloride	ND	0.0050	"
Chlorobenzene	ND	0.0050	"
Chloroethane	ND	0.0050	"
Chloroform	ND	0.0050	"
Chloromethane	ND	0.0050	"
2-Chlorotoluene	ND	0.0050	"
4-Chlorotoluene	ND	0.0050	"
Dibromochloromethane	ND	0.0050	"
1,2-Dibromo-3-chloropropane	ND	0.0050	"
1,2-Dibromoethane (EDB)	ND	0.0050	"
Dibromomethane	ND	0.0050	"
1,2-Dichlorobenzene	ND	0.0050	"
1,3-Dichlorobenzene	ND	0.0050	"
1,4-Dichlorobenzene	ND	0.0050	"
Dichlorodifluoromethane	ND	0.0050	"
1,1-Dichloroethane	ND	0.0050	"
1,2-Dichloroethane	ND	0.0050	"
1,1-Dichloroethene	ND	0.0050	"
cis-1,2-Dichloroethene	ND	0.0050	"
trans-1,2-Dichloroethene	ND	0.0050	"
1,2-Dichloropropane	ND	0.0050	"
1,3-Dichloropropane	ND	0.0050	"
2,2-Dichloropropane	ND	0.0050	"
1,1-Dichloropropene	ND	0.0050	"
cis-1,3-Dichloropropene	ND	0.0050	"
trans-1,3-Dichloropropene	ND	0.0050	"
Diisopropyl Ether	ND	0.0050	"
Ethanol	ND	4.0	"
Ethyl t-Butyl Ether	ND	0.0050	"
Ethylbenzene	ND	0.0050	"
Hexachlorobutadiene	ND	0.0050	"
4-Isopropyl Toluene	ND	0.0050	"

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0564 - EPA 8260B Preparation: EPA 5035/5030B MEOH 04/19/19 09:11										
Blank (B9D0564-BLK1) Analyzed: 04/19/19 12:00										
Isopropylbenzene	ND	0.0050	mg/kg							
Methylene chloride	ND	0.0050	"							
Methyl-t-butyl ether	ND	0.0050	"							
Naphthalene	ND	0.0050	"							
n-Propylbenzene	ND	0.0050	"							
Styrene	ND	0.0050	"							
1,1,1,2-Tetrachloroethane	ND	0.0050	"							
1,1,2,2-Tetrachloroethane	ND	0.0050	"							
Tetrachloroethene (PCE)	ND	0.0050	"							
Toluene	ND	0.0050	"							
1,2,3-Trichlorobenzene	ND	0.0050	"							
1,2,4-Trichlorobenzene	ND	0.0050	"							
1,1,1-Trichloroethane	ND	0.0050	"							
1,1,2-Trichloroethane	ND	0.0050	"							
Trichloroethene (TCE)	ND	0.0050	"							
Trichlorofluoromethane	ND	0.0050	"							
1,2,3-Trichloropropane	ND	0.0050	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Vinyl chloride	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Surrogate: Dibromofluoromethane	*0.0416*		"	*0.0499*		*83.4*	*73-132*			
Surrogate: Toluene-d8	*0.0497*		"	*0.0499*		*99.6*	*70-126*			
Surrogate: 4-Bromofluorobenzene	*0.0497*		"	*0.0499*		*99.6*	*78-118*			
LCS (B9D0564-BS1) Analyzed: 04/19/19 10:04										
Benzene	0.0217	0.0050	mg/kg	0.0199		109	74-135			
Chlorobenzene	0.0235	0.0050	"	0.0199		118	79-130			
1,1-Dichloroethene	0.0184	0.0050	"	0.0199		92.2	40-158			
Toluene	0.0227	0.0050	"	0.0199		114	70-137			
Trichloroethene (TCE)	0.0229	0.0050	"	0.0199		115	79-142			
Surrogate: Dibromofluoromethane	*0.0430*		"	*0.0498*		*86.4*	*73-132*			
Surrogate: Toluene-d8	*0.0495*		"	*0.0498*		*99.4*	*70-126*			
Surrogate: 4-Bromofluorobenzene	*0.0496*		"	*0.0498*		*99.7*	*78-118*			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0564 - EPA 8260B Preparation: EPA 5035/5030B MEOH 04/19/19 09:11										
LCS Dup (B9D0564-BSD1)				Analyzed: 04/19/19 10:33						
Benzene	0.0214	0.0050	mg/kg	0.0200		107	74-135	1.28	20	
Chlorobenzene	0.0236	0.0050	"	0.0200		118	79-130	0.707	20	
1,1-Dichloroethene	0.0180	0.0050	"	0.0200		90.4	40-158	1.77	20	
Toluene	0.0225	0.0050	"	0.0200		113	70-137	1.21	20	
Trichloroethene (TCE)	0.0227	0.0050	"	0.0200		114	79-142	0.850	20	
Surrogate: Dibromofluoromethane	*0.0447*		*"*	*0.0499*		*89.6*	*73-132*			
Surrogate: Toluene-d8	*0.0496*		*"*	*0.0499*		*99.4*	*70-126*			
Surrogate: 4-Bromofluorobenzene	*0.0515*		*"*	*0.0499*		*103*	*78-118*			
Duplicate (B9D0564-DUP1)	**Source: 1901966-06**			Analyzed: 04/19/19 14:00						
t-Amyl Methyl Ether	ND	0.0050	mg/kg		ND				20	
Benzene	ND	0.0050	"		ND				20	
Bromobenzene	ND	0.0050	"		ND				20	
Bromochloromethane	ND	0.0050	"		ND				20	
Bromodichloromethane	ND	0.0050	"		ND				20	
Bromoform	ND	0.0050	"		ND				20	
Bromomethane	ND	0.0050	"		ND				20	
t-Butyl alcohol	ND	0.099	"		ND				20	
n-Butylbenzene	ND	0.0050	"		ND				20	
sec-Butylbenzene	ND	0.0050	"		ND				20	
tert-Butylbenzene	ND	0.0050	"		ND				20	
Carbon tetrachloride	ND	0.0050	"		ND				20	
Chlorobenzene	ND	0.0050	"		ND				20	
Chloroethane	ND	0.0050	"		ND				20	
Chloroform	ND	0.0050	"		ND				20	
Chloromethane	ND	0.0050	"		ND				20	
2-Chlorotoluene	ND	0.0050	"		ND				20	
4-Chlorotoluene	ND	0.0050	"		ND				20	
Dibromochloromethane	ND	0.0050	"		ND				20	
1,2-Dibromo-3-chloropropane	ND	0.0050	"		ND				20	
1,2-Dibromoethane (EDB)	ND	0.0050	"		ND				20	
Dibromomethane	ND	0.0050	"		ND				20	
1,2-Dichlorobenzene	ND	0.0050	"		ND				20	
1,3-Dichlorobenzene	ND	0.0050	"		ND				20	
1,4-Dichlorobenzene	ND	0.0050	"		ND				20	
Dichlorodifluoromethane	ND	0.0050	"		ND				20	
1,1-Dichloroethane	ND	0.0050	"		ND				20	
1,2-Dichloroethane	ND	0.0050	"		ND				20	
1,1-Dichloroethene	ND	0.0050	"		ND				20	
cis-1,2-Dichloroethene	ND	0.0050	"		ND				20	
trans-1,2-Dichloroethene	ND	0.0050	"		ND				20	
1,2-Dichloropropane	ND	0.0050	"		ND				20	
1,3-Dichloropropane	ND	0.0050	"		ND				20	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0564 - EPA 8260B Preparation: EPA 5035/5030B MEOH 04/19/19 09:11										
Duplicate (B9D0564-DUP1) **Source: 1901966-06** Analyzed: 04/19/19 14:00										
2,2-Dichloropropane	ND	0.0050	mg/kg		ND				20	
1,1-Dichloropropene	ND	0.0050	"		ND				20	
cis-1,3-Dichloropropene	ND	0.0050	"		ND				20	
trans-1,3-Dichloropropene	ND	0.0050	"		ND				20	
Diisopropyl Ether	ND	0.0050	"		ND				20	
Ethanol	ND	4.0	"		ND				20	
Ethyl t-Butyl Ether	ND	0.0050	"		ND				20	
Ethylbenzene	ND	0.0050	"		ND				20	
Hexachlorobutadiene	ND	0.0050	"		ND				20	
4-Isopropyl Toluene	0.0991	0.0050	"		0.121			19.5	20	
Isopropylbenzene	ND	0.0050	"		ND				20	
Methylene chloride	ND	0.0050	"		ND				20	
Methyl-t-butyl ether	ND	0.0050	"		ND				20	
Naphthalene	ND	0.0050	"		ND				20	
n-Propylbenzene	ND	0.0050	"		ND				20	
Styrene	ND	0.0050	"		ND				20	
1,1,1,2-Tetrachloroethane	ND	0.0050	"		ND				20	
1,1,2,2-Tetrachloroethane	ND	0.0050	"		ND				20	
Tetrachloroethene (PCE)	ND	0.0050	"		ND				20	
Toluene	ND	0.0050	"		ND				20	
1,2,3-Trichlorobenzene	ND	0.0050	"		ND				20	
1,2,4-Trichlorobenzene	ND	0.0050	"		ND				20	
1,1,1-Trichloroethane	ND	0.0050	"		ND				20	
1,1,2-Trichloroethane	ND	0.0050	"		ND				20	
Trichloroethene (TCE)	ND	0.0050	"		ND				20	
Trichlorofluoromethane	ND	0.0050	"		ND				20	
1,2,3-Trichloropropane	ND	0.0050	"		ND				20	
1,2,4-Trimethylbenzene	ND	0.0050	"		ND				20	
1,3,5-Trimethylbenzene	ND	0.0050	"		ND				20	
Vinyl chloride	ND	0.0050	"		ND				20	
Xylenes (total)	ND	0.0050	"		ND				20	
Surrogate: Dibromofluoromethane	*0.0418*		"	*0.0496*		*84.2*	*73-132*			
Surrogate: Toluene-d8	*0.0490*		"	*0.0496*		*98.7*	*70-126*			
Surrogate: 4-Bromofluorobenzene	*0.0495*		"	*0.0496*		*99.8*	*78-118*			

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0564 - EPA 8260B Preparation: EPA 5035/5030B MEOH 04/19/19 09:11										
Matrix Spike (B9D0564-MS1) **Source: 1901966-08** Analyzed: 04/19/19 19:49										
Benzene	0.0410	0.0050	mg/kg	0.0398	ND	103	40-148			
Chlorobenzene	0.0424	0.0050	"	0.0398	ND	106	37-149			
1,1-Dichloroethene	0.0358	0.0050	"	0.0398	ND	89.9	10-169			
Toluene	0.0420	0.0050	"	0.0398	ND	105	37-149			
Trichloroethene (TCE)	0.0441	0.0050	"	0.0398	ND	111	34-162			
Surrogate: Dibromofluoromethane	*0.0491*		"	*0.0498*		*98.6*	*73-132*			
Surrogate: Toluene-d8	*0.0501*		"	*0.0498*		*101*	*70-126*			
Surrogate: 4-Bromofluorobenzene	*0.0504*		"	*0.0498*		*101*	*78-118*			
Batch B9D0578 - EPA 8260B Preparation: EPA 5035/5030B MEOH 04/19/19 14:05										
Blank (B9D0578-BLK2) Analyzed: 04/19/19 17:11										
t-Amyl Methyl Ether	ND	0.0050	mg/kg							
Benzene	ND	0.0050	"							
Bromobenzene	ND	0.0050	"							
Bromochloromethane	ND	0.0050	"							
Bromodichloromethane	ND	0.0050	"							
Bromoform	ND	0.0050	"							
Bromomethane	ND	0.0050	"							
t-Butyl alcohol	ND	0.099	"							
n-Butylbenzene	ND	0.0050	"							
sec-Butylbenzene	ND	0.0050	"							
tert-Butylbenzene	ND	0.0050	"							
Carbon tetrachloride	ND	0.0050	"							
Chlorobenzene	ND	0.0050	"							
Chloroethane	ND	0.0050	"							
Chloroform	ND	0.0050	"							
Chloromethane	ND	0.0050	"							
2-Chlorotoluene	ND	0.0050	"							
4-Chlorotoluene	ND	0.0050	"							
Dibromochloromethane	ND	0.0050	"							
1,2-Dibromo-3-chloropropane	ND	0.0050	"							
1,2-Dibromoethane (EDB)	ND	0.0050	"							
Dibromomethane	ND	0.0050	"							
1,2-Dichlorobenzene	ND	0.0050	"							
1,3-Dichlorobenzene	ND	0.0050	"							
1,4-Dichlorobenzene	ND	0.0050	"							
Dichlorodifluoromethane	ND	0.0050	"							
1,1-Dichloroethane	ND	0.0050	"							
1,2-Dichloroethane	ND	0.0050	"							
1,1-Dichloroethene	ND	0.0050	"							
cis-1,2-Dichloroethene	ND	0.0050	"							
trans-1,2-Dichloroethene	ND	0.0050	"							

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0578 - EPA 8260B Preparation: EPA 5035/5030B MEOH 04/19/19 14:05										
Blank (B9D0578-BLK2)			Analyzed: 04/19/19 17:11							
1,2-Dichloropropane	ND	0.0050	mg/kg							
1,3-Dichloropropane	ND	0.0050	"							
2,2-Dichloropropane	ND	0.0050	"							
1,1-Dichloropropene	ND	0.0050	"							
cis-1,3-Dichloropropene	ND	0.0050	"							
trans-1,3-Dichloropropene	ND	0.0050	"							
Diisopropyl Ether	ND	0.0050	"							
Ethanol	ND	4.0	"							
Ethyl t-Butyl Ether	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Hexachlorobutadiene	ND	0.0050	"							
4-Isopropyl Toluene	ND	0.0050	"							
Isopropylbenzene	ND	0.0050	"							
Methylene chloride	ND	0.0050	"							
Methyl-t-butyl ether	ND	0.0050	"							
Naphthalene	ND	0.0050	"							
n-Propylbenzene	ND	0.0050	"							
Styrene	ND	0.0050	"							
1,1,1,2-Tetrachloroethane	ND	0.0050	"							
1,1,2,2-Tetrachloroethane	ND	0.0050	"							
Tetrachloroethene (PCE)	ND	0.0050	"							
Toluene	ND	0.0050	"							
1,2,3-Trichlorobenzene	ND	0.0050	"							
1,2,4-Trichlorobenzene	ND	0.0050	"							
1,1,1-Trichloroethane	ND	0.0050	"							
1,1,2-Trichloroethane	ND	0.0050	"							
Trichloroethene (TCE)	ND	0.0050	"							
Trichlorofluoromethane	ND	0.0050	"							
1,2,3-Trichloropropane	ND	0.0050	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Vinyl chloride	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Surrogate: Dibromofluoromethane	*0.0509*		"	*0.0495*		*103*	*73-132*			
Surrogate: Toluene-d8	*0.0516*		"	*0.0495*		*104*	*70-126*			
Surrogate: 4-Bromofluorobenzene	*0.0490*		"	*0.0495*		*98.9*	*78-118*			

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0578 - EPA 8260B Preparation: EPA 5035/5030B MEOH 04/19/19 14:05										
LCS (B9D0578-BS1)				Analyzed: 04/19/19 14:24						
Benzene	0.0432	0.0050	mg/kg	0.0399		108	74-135			
Chlorobenzene	0.0406	0.0050	"	0.0399		102	79-130			
1,1-Dichloroethene	0.0364	0.0050	"	0.0399		91.3	40-158			
Toluene	0.0388	0.0050	"	0.0399		97.1	70-137			
Trichloroethene (TCE)	0.0395	0.0050	"	0.0399		98.9	79-142			
Surrogate: Dibromofluoromethane	*0.0509*		"	*0.0499*		*102*	*73-132*			
Surrogate: Toluene-d8	*0.0506*		"	*0.0499*		*101*	*70-126*			
Surrogate: 4-Bromofluorobenzene	*0.0515*		"	*0.0499*		*103*	*78-118*			
LCS Dup (B9D0578-BSD1)				Analyzed: 04/19/19 14:52						
Benzene	0.0453	0.0050	mg/kg	0.0399		114	74-135	4.78	20	
Chlorobenzene	0.0449	0.0050	"	0.0399		112	79-130	10.1	20	
1,1-Dichloroethene	0.0376	0.0050	"	0.0399		94.2	40-158	3.13	20	
Toluene	0.0422	0.0050	"	0.0399		106	70-137	8.39	20	
Trichloroethene (TCE)	0.0468	0.0050	"	0.0399		117	79-142	17.0	20	
Surrogate: Dibromofluoromethane	*0.0505*		"	*0.0499*		*101*	*73-132*			
Surrogate: Toluene-d8	*0.0496*		"	*0.0499*		*99.4*	*70-126*			
Surrogate: 4-Bromofluorobenzene	*0.0509*		"	*0.0499*		*102*	*78-118*			
Matrix Spike (B9D0578-MS1)	**Source: 1901966-39**			Analyzed: 04/19/19 21:47						
Benzene	0.0379	0.0050	mg/kg	0.0399	ND	95.0	40-148			
Chlorobenzene	0.0270	0.0050	"	0.0399	ND	67.7	37-149			
1,1-Dichloroethene	0.0352	0.0050	"	0.0399	ND	88.3	10-169			
Toluene	0.0300	0.0050	"	0.0399	ND	75.2	37-149			
Trichloroethene (TCE)	0.0322	0.0050	"	0.0399	ND	80.7	34-162			
Surrogate: Dibromofluoromethane	*0.0524*		"	*0.0499*		*105*	*73-132*			
Surrogate: Toluene-d8	*0.0511*		"	*0.0499*		*102*	*70-126*			
Surrogate: 4-Bromofluorobenzene	*0.0487*		"	*0.0499*		*97.6*	*78-118*			
Matrix Spike Dup (B9D0578-MSD1)	**Source: 1901966-39**			Analyzed: 04/19/19 22:15						
Benzene	0.0440	0.0050	mg/kg	0.0398	ND	111	40-148	14.9	20	
Chlorobenzene	0.0307	0.0050	"	0.0398	ND	77.2	37-149	12.7	20	
1,1-Dichloroethene	0.0433	0.0050	"	0.0398	ND	109	10-169	20.6	20	QR-02
Toluene	0.0327	0.0050	"	0.0398	ND	82.3	37-149	8.62	20	
Trichloroethene (TCE)	0.0403	0.0050	"	0.0398	ND	101	34-162	22.2	20	QR-02
Surrogate: Dibromofluoromethane	*0.0528*		"	*0.0497*		*106*	*73-132*			
Surrogate: Toluene-d8	*0.0476*		"	*0.0497*		*95.7*	*70-126*			
Surrogate: 4-Bromofluorobenzene	*0.0450*		"	*0.0497*		*90.6*	*78-118*			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes

Batch B9E0098 - EPA 8260B Preparation: EPA 5035/5030B MEOH 05/03/19 09:39

Blank (B9E0098-BLK1) Analyzed: 05/03/19 11:59

t-Amyl Methyl Ether	ND	0.0050	mg/kg
Benzene	ND	0.0050	"
Bromobenzene	ND	0.0050	"
Bromochloromethane	ND	0.0050	"
Bromodichloromethane	ND	0.0050	"
Bromoform	ND	0.0050	"
Bromomethane	ND	0.0050	"
t-Butyl alcohol	ND	0.10	"
n-Butylbenzene	ND	0.0050	"
sec-Butylbenzene	ND	0.0050	"
tert-Butylbenzene	ND	0.0050	"
Carbon tetrachloride	ND	0.0050	"
Chlorobenzene	ND	0.0050	"
Chloroethane	ND	0.0050	"
Chloroform	ND	0.0050	"
Chloromethane	ND	0.0050	"
2-Chlorotoluene	ND	0.0050	"
4-Chlorotoluene	ND	0.0050	"
Dibromochloromethane	ND	0.0050	"
1,2-Dibromo-3-chloropropane	ND	0.0050	"
1,2-Dibromoethane (EDB)	ND	0.0050	"
Dibromomethane	ND	0.0050	"
1,2-Dichlorobenzene	ND	0.0050	"
1,3-Dichlorobenzene	ND	0.0050	"
1,4-Dichlorobenzene	ND	0.0050	"
Dichlorodifluoromethane	ND	0.0050	"
1,1-Dichloroethane	ND	0.0050	"
1,2-Dichloroethane	ND	0.0050	"
1,1-Dichloroethene	ND	0.0050	"
cis-1,2-Dichloroethene	ND	0.0050	"
trans-1,2-Dichloroethene	ND	0.0050	"
1,2-Dichloropropane	ND	0.0050	"
1,3-Dichloropropane	ND	0.0050	"
2,2-Dichloropropane	ND	0.0050	"
1,1-Dichloropropene	ND	0.0050	"
cis-1,3-Dichloropropene	ND	0.0050	"
trans-1,3-Dichloropropene	ND	0.0050	"
Diisopropyl Ether	ND	0.0050	"
Ethanol	ND	4.0	"
Ethyl t-Butyl Ether	ND	0.0050	"
Ethylbenzene	ND	0.0050	"
Hexachlorobutadiene	ND	0.0050	"
4-Isopropyl Toluene	ND	0.0050	"

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9E0098 - EPA 8260B Preparation: EPA 5035/5030B MEOH 05/03/19 09:39										
Blank (B9E0098-BLK1) Analyzed: 05/03/19 11:59										
Isopropylbenzene	ND	0.0050	mg/kg							
Methylene chloride	ND	0.0050	"							
Methyl-t-butyl ether	ND	0.0050	"							
Naphthalene	ND	0.0050	"							
n-Propylbenzene	ND	0.0050	"							
Styrene	ND	0.0050	"							
1,1,1,2-Tetrachloroethane	ND	0.0050	"							
1,1,2,2-Tetrachloroethane	ND	0.0050	"							
Tetrachloroethene (PCE)	ND	0.0050	"							
Toluene	ND	0.0050	"							
1,2,3-Trichlorobenzene	ND	0.0050	"							
1,2,4-Trichlorobenzene	ND	0.0050	"							
1,1,1-Trichloroethane	ND	0.0050	"							
1,1,2-Trichloroethane	ND	0.0050	"							
Trichloroethene (TCE)	ND	0.0050	"							
Trichlorofluoromethane	ND	0.0050	"							
1,2,3-Trichloropropane	ND	0.0050	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Vinyl chloride	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Surrogate: Dibromofluoromethane	*0.0510*		"	*0.0500*		*102*	*73-132*			
Surrogate: Toluene-d8	*0.0453*		"	*0.0500*		*90.6*	*70-126*			
Surrogate: 4-Bromofluorobenzene	*0.0499*		"	*0.0500*		*99.8*	*78-118*			
LCS (B9E0098-BS1) Analyzed: 05/03/19 10:02										
Benzene	0.0231	0.0050	mg/kg	0.0200		115	74-135			
Chlorobenzene	0.0232	0.0050	"	0.0200		116	79-130			
1,1-Dichloroethene	0.0202	0.0050	"	0.0200		101	40-158			
Toluene	0.0212	0.0050	"	0.0200		106	70-137			
Trichloroethene (TCE)	0.0211	0.0050	"	0.0200		105	79-142			
Surrogate: Dibromofluoromethane	*0.0513*		"	*0.0500*		*103*	*73-132*			
Surrogate: Toluene-d8	*0.0461*		"	*0.0500*		*92.2*	*70-126*			
Surrogate: 4-Bromofluorobenzene	*0.0517*		"	*0.0500*		*103*	*78-118*			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9E0098 - EPA 8260B Preparation: EPA 5035/5030B MEOH 05/03/19 09:39										
LCS Dup (B9E0098-BSD1)				Analyzed: 05/03/19 10:31						
Benzene	0.0207	0.0050	mg/kg	0.0200		103	74-135	11.0	20	
Chlorobenzene	0.0210	0.0050	"	0.0200		105	79-130	10.1	20	
1,1-Dichloroethene	0.0177	0.0050	"	0.0200		88.4	40-158	13.1	20	
Toluene	0.0191	0.0050	"	0.0200		95.4	70-137	10.3	20	
Trichloroethene (TCE)	0.0204	0.0050	"	0.0200		102	79-142	3.47	20	
Surrogate: Dibromofluoromethane	*0.0528*		*"*	*0.0500*		*106*	*73-132*			
Surrogate: Toluene-d8	*0.0453*		*"*	*0.0500*		*90.6*	*70-126*			
Surrogate: 4-Bromofluorobenzene	*0.0513*		*"*	*0.0500*		*103*	*78-118*			
Duplicate (B9E0098-DUP1)	**Source: 1902178-03**			Analyzed: 05/03/19 15:53						
t-Amyl Methyl Ether	ND	0.0050	mg/kg		ND				20	
Benzene	ND	0.0050	"		ND				20	
Bromobenzene	ND	0.0050	"		ND				20	
Bromochloromethane	ND	0.0050	"		ND				20	
Bromodichloromethane	ND	0.0050	"		ND				20	
Bromoform	ND	0.0050	"		ND				20	
Bromomethane	ND	0.0050	"		ND				20	
t-Butyl alcohol	ND	0.099	"		ND				20	
n-Butylbenzene	ND	0.0050	"		0.00204				20	
sec-Butylbenzene	ND	0.0050	"		ND				20	
tert-Butylbenzene	ND	0.0050	"		ND				20	
Carbon tetrachloride	ND	0.0050	"		ND				20	
Chlorobenzene	ND	0.0050	"		ND				20	
Chloroethane	ND	0.0050	"		ND				20	
Chloroform	ND	0.0050	"		ND				20	
Chloromethane	ND	0.0050	"		ND				20	
2-Chlorotoluene	ND	0.0050	"		ND				20	
4-Chlorotoluene	ND	0.0050	"		ND				20	
Dibromochloromethane	ND	0.0050	"		ND				20	
1,2-Dibromo-3-chloropropane	ND	0.0050	"		ND				20	
1,2-Dibromoethane (EDB)	ND	0.0050	"		ND				20	
Dibromomethane	ND	0.0050	"		ND				20	
1,2-Dichlorobenzene	ND	0.0050	"		ND				20	
1,3-Dichlorobenzene	ND	0.0050	"		ND				20	
1,4-Dichlorobenzene	ND	0.0050	"		ND				20	
Dichlorodifluoromethane	ND	0.0050	"		ND				20	
1,1-Dichloroethane	ND	0.0050	"		ND				20	
1,2-Dichloroethane	ND	0.0050	"		ND				20	
1,1-Dichloroethene	ND	0.0050	"		ND				20	
cis-1,2-Dichloroethene	ND	0.0050	"		ND				20	
trans-1,2-Dichloroethene	ND	0.0050	"		ND				20	
1,2-Dichloropropane	ND	0.0050	"		ND				20	
1,3-Dichloropropane	ND	0.0050	"		ND				20	

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9E0098 - EPA 8260B Preparation: EPA 5035/5030B MEOH 05/03/19 09:39										
Duplicate (B9E0098-DUP1) **Source: 1902178-03** Analyzed: 05/03/19 15:53										
2,2-Dichloropropane	ND	0.0050	mg/kg		ND				20	
1,1-Dichloropropene	ND	0.0050	"		ND				20	
cis-1,3-Dichloropropene	ND	0.0050	"		ND				20	
trans-1,3-Dichloropropene	ND	0.0050	"		ND				20	
Diisopropyl Ether	ND	0.0050	"		ND				20	
Ethanol	ND	4.0	"		ND				20	
Ethyl t-Butyl Ether	ND	0.0050	"		ND				20	
Ethylbenzene	ND	0.0050	"		ND				20	
Hexachlorobutadiene	ND	0.0050	"		ND				20	
4-Isopropyl Toluene	ND	0.0050	"		ND				20	
Isopropylbenzene	ND	0.0050	"		ND				20	
Methylene chloride	ND	0.0050	"		ND				20	
Methyl-t-butyl ether	ND	0.0050	"		ND				20	
Naphthalene	0.0109	0.0050	"		0.0117			6.76	20	
n-Propylbenzene	0.00258	0.0050	"		0.00248			4.33	20	
Styrene	ND	0.0050	"		ND				20	
1,1,1,2-Tetrachloroethane	ND	0.0050	"		ND				20	
1,1,2,2-Tetrachloroethane	ND	0.0050	"		ND				20	
Tetrachloroethene (PCE)	ND	0.0050	"		ND				20	
Toluene	ND	0.0050	"		ND				20	
1,2,3-Trichlorobenzene	ND	0.0050	"		ND				20	
1,2,4-Trichlorobenzene	ND	0.0050	"		ND				20	
1,1,1-Trichloroethane	ND	0.0050	"		ND				20	
1,1,2-Trichloroethane	ND	0.0050	"		ND				20	
Trichloroethene (TCE)	ND	0.0050	"		ND				20	
Trichlorofluoromethane	ND	0.0050	"		ND				20	
1,2,3-Trichloropropane	ND	0.0050	"		ND				20	
1,2,4-Trimethylbenzene	ND	0.0050	"		ND				20	
1,3,5-Trimethylbenzene	ND	0.0050	"		ND				20	
Vinyl chloride	ND	0.0050	"		ND				20	
Xylenes (total)	ND	0.0050	"		ND				20	
Surrogate: Dibromofluoromethane	*0.0528*		"	*0.0497*		*106*	*73-132*			
Surrogate: Toluene-d8	*0.0476*		"	*0.0497*		*95.8*	*70-126*			
Surrogate: 4-Bromofluorobenzene	*0.0480*		"	*0.0497*		*96.6*	*78-118*			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9E0098 - EPA 8260B Preparation: EPA 5035/5030B MEOH 05/03/19 09:39										
Matrix Spike (B9E0098-MS1) **Source: 1902231-01** Analyzed: 05/03/19 19:48										
Benzene	0.0222	0.0049	mg/kg	0.0198	ND	112	40-148			
Chlorobenzene	0.0182	0.0049	"	0.0198	ND	92.2	37-149			
1,1-Dichloroethene	0.0165	0.0049	"	0.0198	ND	83.4	10-169			
Toluene	0.0174	0.0049	"	0.0198	ND	88.0	37-149			
Trichloroethene (TCE)	0.0183	0.0049	"	0.0198	ND	92.4	34-162			
Surrogate: Dibromofluoromethane	*0.0549*		*"*	*0.0494*		*111*	*73-132*			
Surrogate: Toluene-d8	*0.0479*		*"*	*0.0494*		*97.0*	*70-126*			
Surrogate: 4-Bromofluorobenzene	*0.0502*		*"*	*0.0494*		*102*	*78-118*			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Polychlorinated Biphenyls by GC/ECD - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0538 - EPA 8082 Preparation: EPA 3550C 04/18/19 09:56										
Blank (B9D0538-BLK1)			Analyzed: 04/18/19 15:39							
PCB-1016	ND	0.020	mg/kg							
PCB-1221	ND	0.020	"							
PCB-1232	ND	0.020	"							
PCB-1242	ND	0.020	"							
PCB-1248	ND	0.020	"							
PCB-1254	ND	0.020	"							
PCB-1260	ND	0.020	"							
Surrogate: Decachlorobiphenyl	*0.00822*		"	*0.00833*		*98.6*	*11-167*			
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	*0.00550*		"	*0.00833*		*66.0*	*13-150*			
LCS (B9D0538-BS1)			Analyzed: 04/18/19 15:01							
PCB-1016	0.0610	0.020	mg/kg	0.0667		91.6	49-104			
PCB-1260	0.0608	0.020	"	0.0667		91.2	57-120			
Surrogate: Decachlorobiphenyl	*0.00825*		"	*0.00833*		*99.0*	*11-167*			
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	*0.00596*		"	*0.00833*		*71.5*	*13-150*			
LCS Dup (B9D0538-BSD1)			Analyzed: 04/18/19 15:14							
PCB-1016	0.0612	0.020	mg/kg	0.0667		91.7	49-104	0.211	30	
PCB-1260	0.0658	0.020	"	0.0667		98.7	57-120	7.92	30	
Surrogate: Decachlorobiphenyl	*0.00843*		"	*0.00833*		*101*	*11-167*			
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	*0.00606*		"	*0.00833*		*72.7*	*13-150*			
Duplicate (B9D0538-DUP1)	**Source: 1901995-01**		Analyzed: 04/18/19 17:22							
PCB-1016	ND	0.020	mg/kg		ND				30	
PCB-1221	ND	0.020	"		ND				30	
PCB-1232	ND	0.020	"		ND				30	
PCB-1242	ND	0.020	"		ND				30	
PCB-1248	ND	0.020	"		ND				30	
PCB-1254	ND	0.020	"		ND				30	
PCB-1260	ND	0.020	"		ND				30	
Surrogate: Decachlorobiphenyl	*0.00656*		"	*0.00833*		*78.7*	*11-167*			
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	*0.00618*		"	*0.00833*		*74.1*	*13-150*			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Polychlorinated Biphenyls by GC/ECD - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0538 - EPA 8082 Preparation: EPA 3550C 04/18/19 09:56										
Matrix Spike (B9D0538-MS1)	**Source: 1901995-01**		Analyzed: 04/18/19 17:34							
PCB-1016	0.0589	0.020	mg/kg	0.0666	ND	88.4	52-107			
PCB-1260	0.0559	0.020	"	0.0666	ND	83.9	46-122			
Surrogate: Decachlorobiphenyl	*0.00786*		"	*0.00833*		*94.4*	*11-167*			
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	*0.00567*		"	*0.00833*		*68.0*	*13-150*			
Matrix Spike Dup (B9D0538-MSD1)	**Source: 1901995-01**		Analyzed: 04/18/19 17:47							
PCB-1016	0.0559	0.020	mg/kg	0.0666	ND	83.8	52-107	5.29	30	
PCB-1260	0.0519	0.020	"	0.0666	ND	77.9	46-122	7.40	30	
Surrogate: Decachlorobiphenyl	*0.00754*		"	*0.00833*		*90.5*	*11-167*			
Surrogate: 2,4,5,6 Tetrachloro-m-xylene	*0.00612*		"	*0.00833*		*73.5*	*13-150*			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0605 - EPA 8270-SIM Preparation: EPA 3550C MS 04/22/19 09:49										
Blank (B9D0605-BLK1) Analyzed: 04/22/19 17:42										
Acenaphthene	ND	0.0050	mg/kg							
Acenaphthylene	ND	0.0050	"							
Anthracene	ND	0.0050	"							
Benz (a) anthracene	ND	0.0050	"							
Benzo (b) fluoranthene	ND	0.0050	"							
Benzo (k) fluoranthene	ND	0.0050	"							
Benzo (a) pyrene	ND	0.0050	"							
Benzo (g,h,i) perylene	ND	0.010	"							
Chrysene	ND	0.0050	"							
Dibenz (a,h) anthracene	ND	0.010	"							
Fluoranthene	ND	0.0050	"							
Fluorene	ND	0.0050	"							
Indeno (1,2,3-cd) pyrene	ND	0.0050	"							
Naphthalene	ND	0.010	"							
Phenanthrene	ND	0.0050	"							
Pyrene	ND	0.0050	"							
Surrogate: p-Terphenyl-d14	*0.0267*		*"*	*0.0267*		*100*	*13-180*			
LCS (B9D0605-BS1) Analyzed: 04/22/19 16:18										
Acenaphthene	0.0200	0.0050	mg/kg	0.0266		75.0	30-116			
Acenaphthylene	0.0203	0.0050	"	0.0266		76.3	26-118			
Anthracene	0.0220	0.0050	"	0.0266		82.5	45-135			
Benz (a) anthracene	0.0280	0.0050	"	0.0266		105	70-135			
Benzo (b) fluoranthene	0.0310	0.0050	"	0.0266		116	61-145			
Benzo (k) fluoranthene	0.0290	0.0050	"	0.0266		109	70-157			
Benzo (a) pyrene	0.0260	0.0050	"	0.0266		97.5	69-146			
Benzo (g,h,i) perylene	0.0273	0.010	"	0.0266		102	50-164			
Chrysene	0.0273	0.0050	"	0.0266		102	78-142			
Dibenz (a,h) anthracene	0.0230	0.010	"	0.0266		86.3	50-159			
Fluoranthene	0.0266	0.0050	"	0.0266		100	73-125			
Fluorene	0.0213	0.0050	"	0.0266		80.0	29-122			
Indeno (1,2,3-cd) pyrene	0.0230	0.0050	"	0.0266		86.3	52-164			
Naphthalene	0.0177	0.010	"	0.0266		66.3	22-113			
Phenanthrene	0.0227	0.0050	"	0.0266		85.0	36-125			
Pyrene	0.0266	0.0050	"	0.0266		100	72-127			
Surrogate: p-Terphenyl-d14	*0.0263*		*"*	*0.0266*		*98.8*	*13-180*			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0605 - EPA 8270-SIM Preparation: EPA 3550C MS 04/22/19 09:49										
LCS Dup (B9D0605-BSD1)				Analyzed: 04/22/19 16:39						
Acenaphthene	0.0200	0.0050	mg/kg	0.0267		75.0	30-116	0.0333	30	
Acenaphthylene	0.0200	0.0050	"	0.0267		75.0	26-118	1.62	30	
Anthracene	0.0223	0.0050	"	0.0267		83.8	45-135	1.54	30	
Benz (a) anthracene	0.0280	0.0050	"	0.0267		105	70-135	0.0333	30	
Benzo (b) fluoranthene	0.0323	0.0050	"	0.0267		121	61-145	4.24	30	
Benzo (k) fluoranthene	0.0283	0.0050	"	0.0267		106	70-157	2.29	30	
Benzo (a) pyrene	0.0270	0.0050	"	0.0267		101	69-146	3.81	30	
Benzo (g,h,i) perylene	0.0250	0.010	"	0.0267		93.8	50-164	8.88	30	
Chrysene	0.0277	0.0050	"	0.0267		104	78-142	1.25	30	
Dibenz (a,h) anthracene	0.0223	0.010	"	0.0267		83.8	50-159	2.91	30	
Fluoranthene	0.0267	0.0050	"	0.0267		100	73-125	0.0333	30	
Fluorene	0.0210	0.0050	"	0.0267		78.7	29-122	1.54	30	
Indeno (1,2,3-cd) pyrene	0.0220	0.0050	"	0.0267		82.5	52-164	4.41	30	
Naphthalene	0.0173	0.010	"	0.0267		65.0	22-113	1.87	30	
Phenanthrene	0.0230	0.0050	"	0.0267		86.3	36-125	1.49	30	
Pyrene	0.0273	0.0050	"	0.0267		102	72-127	2.50	30	
Surrogate: p-Terphenyl-d14	*0.0270*		*"*	*0.0267*		*101*	*13-180*			
Duplicate (B9D0605-DUP1)	**Source: 1902029-05**			Analyzed: 04/22/19 18:24						
Acenaphthene	ND	0.0050	mg/kg		ND				30	
Acenaphthylene	ND	0.0050	"		ND				30	
Anthracene	ND	0.0050	"		ND				30	
Benz (a) anthracene	ND	0.0050	"		ND				30	
Benzo (b) fluoranthene	ND	0.0050	"		ND				30	
Benzo (k) fluoranthene	ND	0.0050	"		ND				30	
Benzo (a) pyrene	ND	0.0050	"		ND				30	
Benzo (g,h,i) perylene	ND	0.010	"		ND				30	
Chrysene	ND	0.0050	"		ND				30	
Dibenz (a,h) anthracene	ND	0.010	"		ND				30	
Fluoranthene	ND	0.0050	"		ND				30	
Fluorene	ND	0.0050	"		ND				30	
Indeno (1,2,3-cd) pyrene	ND	0.0050	"		ND				30	
Naphthalene	ND	0.010	"		ND				30	
Phenanthrene	ND	0.0050	"		ND				30	
Pyrene	ND	0.0050	"		ND				30	
Surrogate: p-Terphenyl-d14	*0.0270*		*"*	*0.0267*		*101*	*13-180*			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0605 - EPA 8270-SIM Preparation: EPA 3550C MS 04/22/19 09:49										
Matrix Spike (B9D0605-MS1) **Source: 1902029-05** Analyzed: 04/22/19 17:00										
Acenaphthene	0.0153	0.0050	mg/kg	0.0266	ND	57.5	23-126			
Acenaphthylene	0.0153	0.0050	"	0.0266	ND	57.5	20-126			
Anthracene	0.0200	0.0050	"	0.0266	ND	75.0	44-142			
Benz (a) anthracene	0.0256	0.0050	"	0.0266	ND	96.3	40-161			
Benzo (b) fluoranthene	0.0279	0.0050	"	0.0266	ND	105	33-179			
Benzo (k) fluoranthene	0.0239	0.0050	"	0.0266	ND	90.0	44-184			
Benzo (a) pyrene	0.0219	0.0050	"	0.0266	ND	82.5	50-156			
Benzo (g,h,i) perylene	0.0183	0.010	"	0.0266	ND	68.8	10-169			
Chrysene	0.0243	0.0050	"	0.0266	ND	91.3	42-163			
Dibenz (a,h) anthracene	0.0170	0.010	"	0.0266	ND	63.8	17-157			
Fluoranthene	0.0243	0.0050	"	0.0266	ND	91.3	43-154			
Fluorene	0.0186	0.0050	"	0.0266	ND	70.0	29-130			
Indeno (1,2,3-cd) pyrene	0.0170	0.0050	"	0.0266	ND	63.8	11-169			
Naphthalene	0.0136	0.010	"	0.0266	ND	51.2	10-123			
Phenanthrene	0.0210	0.0050	"	0.0266	ND	78.7	29-146			
Pyrene	0.0249	0.0050	"	0.0266	ND	93.7	42-152			
Surrogate: p-Terphenyl-d14	*0.0273*		*"*	*0.0266*		*102*	*13-180*			
Matrix Spike Dup (B9D0605-MSD1) **Source: 1902029-05** Analyzed: 04/22/19 17:21										
Acenaphthene	0.0166	0.0050	mg/kg	0.0266	ND	62.5	23-126	8.23	30	
Acenaphthylene	0.0173	0.0050	"	0.0266	ND	65.0	20-126	12.1	30	
Anthracene	0.0219	0.0050	"	0.0266	ND	82.5	44-142	9.42	30	
Benz (a) anthracene	0.0282	0.0050	"	0.0266	ND	106	40-161	9.78	30	
Benzo (b) fluoranthene	0.0292	0.0050	"	0.0266	ND	110	33-179	4.55	30	
Benzo (k) fluoranthene	0.0276	0.0050	"	0.0266	ND	104	44-184	14.1	30	
Benzo (a) pyrene	0.0233	0.0050	"	0.0266	ND	87.5	50-156	5.78	30	
Benzo (g,h,i) perylene	0.0176	0.010	"	0.0266	ND	66.2	10-169	3.80	30	
Chrysene	0.0269	0.0050	"	0.0266	ND	101	42-163	10.3	30	
Dibenz (a,h) anthracene	0.0189	0.010	"	0.0266	ND	71.3	17-157	11.0	30	
Fluoranthene	0.0266	0.0050	"	0.0266	ND	100	43-154	9.05	30	
Fluorene	0.0196	0.0050	"	0.0266	ND	73.8	29-130	5.12	30	
Indeno (1,2,3-cd) pyrene	0.0183	0.0050	"	0.0266	ND	68.8	11-169	7.45	30	
Naphthalene	0.0130	0.010	"	0.0266	ND	48.8	10-123	5.10	30	
Phenanthrene	0.0226	0.0050	"	0.0266	ND	85.0	29-146	7.53	30	
Pyrene	0.0266	0.0050	"	0.0266	ND	100	42-152	6.35	30	
Surrogate: p-Terphenyl-d14	*0.0256*		*"*	*0.0266*		*96.2*	*13-180*			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0665 - EPA 8270-SIM Preparation: EPA 3550C MS 04/23/19 14:20										
Blank (B9D0665-BLK1) Analyzed: 04/24/19 13:49										
Acenaphthene	ND	0.0050	mg/kg							
Acenaphthylene	ND	0.0050	"							
Anthracene	ND	0.0050	"							
Benz (a) anthracene	ND	0.0050	"							
Benzo (b) fluoranthene	ND	0.0050	"							
Benzo (k) fluoranthene	ND	0.0050	"							
Benzo (a) pyrene	ND	0.0050	"							
Benzo (g,h,i) perylene	ND	0.010	"							
Chrysene	ND	0.0050	"							
Dibenz (a,h) anthracene	ND	0.010	"							
Fluoranthene	ND	0.0050	"							
Fluorene	ND	0.0050	"							
Indeno (1,2,3-cd) pyrene	ND	0.0050	"							
Naphthalene	ND	0.010	"							
Phenanthrene	ND	0.0050	"							
Pyrene	ND	0.0050	"							
Surrogate: p-Terphenyl-d14	*0.0243*		*"*	*0.0266*		*91.3*	*13-180*			
LCS (B9D0665-BS1) Analyzed: 04/24/19 13:05										
Acenaphthene	0.0107	0.0050	mg/kg	0.0266		40.0	30-116			
Acenaphthylene	0.0113	0.0050	"	0.0266		42.5	26-118			
Anthracene	0.0150	0.0050	"	0.0266		56.3	45-135			
Benz (a) anthracene	0.0233	0.0050	"	0.0266		87.5	70-135			
Benzo (b) fluoranthene	0.0230	0.0050	"	0.0266		86.3	61-145			
Benzo (k) fluoranthene	0.0276	0.0050	"	0.0266		104	70-157			
Benzo (a) pyrene	0.0247	0.0050	"	0.0266		92.5	69-146			
Benzo (g,h,i) perylene	0.0290	0.010	"	0.0266		109	50-164			
Chrysene	0.0273	0.0050	"	0.0266		102	78-142			
Dibenz (a,h) anthracene	0.0253	0.010	"	0.0266		95.0	50-159			
Fluoranthene	0.0223	0.0050	"	0.0266		83.7	73-125			
Fluorene	0.0113	0.0050	"	0.0266		42.5	29-122			
Indeno (1,2,3-cd) pyrene	0.0260	0.0050	"	0.0266		97.5	52-164			
Naphthalene	0.00999	0.010	"	0.0266		37.5	22-113			
Phenanthrene	0.0160	0.0050	"	0.0266		60.0	36-125			
Pyrene	0.0230	0.0050	"	0.0266		86.3	72-127			
Surrogate: p-Terphenyl-d14	*0.0263*		*"*	*0.0266*		*98.8*	*13-180*			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0665 - EPA 8270-SIM Preparation: EPA 3550C MS 04/23/19 14:20										
LCS Dup (B9D0665-BSD1)				Analyzed: 04/24/19 13:27						
Acenaphthene	0.0123	0.0050	mg/kg	0.0266		46.2	30-116	14.4	30	
Acenaphthylene	0.0130	0.0050	"	0.0266		48.8	26-118	13.6	30	
Anthracene	0.0160	0.0050	"	0.0266		60.0	45-135	6.39	30	
Benz (a) anthracene	0.0240	0.0050	"	0.0266		90.0	70-135	2.75	30	
Benzo (b) fluoranthene	0.0236	0.0050	"	0.0266		88.7	61-145	2.79	30	
Benzo (k) fluoranthene	0.0283	0.0050	"	0.0266		106	70-157	2.31	30	
Benzo (a) pyrene	0.0273	0.0050	"	0.0266		102	69-146	10.2	30	
Benzo (g,h,i) perylene	0.0303	0.010	"	0.0266		114	50-164	4.43	30	
Chrysene	0.0276	0.0050	"	0.0266		104	78-142	1.15	30	
Dibenz (a,h) anthracene	0.0270	0.010	"	0.0266		101	50-159	6.30	30	
Fluoranthene	0.0243	0.0050	"	0.0266		91.2	73-125	8.50	30	
Fluorene	0.0130	0.0050	"	0.0266		48.8	29-122	13.6	30	
Indeno (1,2,3-cd) pyrene	0.0283	0.0050	"	0.0266		106	52-164	8.52	30	
Naphthalene	0.0117	0.010	"	0.0266		43.7	22-113	15.3	30	
Phenanthrene	0.0150	0.0050	"	0.0266		56.3	36-125	6.52	30	
Pyrene	0.0246	0.0050	"	0.0266		92.5	72-127	6.93	30	
Surrogate: p-Terphenyl-d14	*0.0263*		*"*	*0.0266*		*98.8*	*13-180*			
Duplicate (B9D0665-DUP1)	**Source: 1901966-27**			Analyzed: 04/24/19 20:30						**R-05**
Acenaphthene	ND	0.020	mg/kg		ND				30	
Acenaphthylene	ND	0.020	"		ND				30	
Anthracene	ND	0.020	"		ND				30	
Benz (a) anthracene	ND	0.020	"		ND				30	
Benzo (b) fluoranthene	0.0160	0.020	"		ND			120	30	**QR-03**
Benzo (k) fluoranthene	ND	0.020	"		ND				30	
Benzo (a) pyrene	ND	0.020	"		ND				30	
Benzo (g,h,i) perylene	0.0253	0.040	"		ND				30	
Chrysene	ND	0.020	"		ND				30	
Dibenz (a,h) anthracene	ND	0.040	"		ND				30	
Fluoranthene	0.0133	0.020	"		ND			66.8	30	**QR-03**
Fluorene	ND	0.020	"		ND				30	
Indeno (1,2,3-cd) pyrene	ND	0.020	"		ND				30	
Naphthalene	ND	0.040	"		ND				30	
Phenanthrene	ND	0.020	"		ND				30	
Pyrene	0.0160	0.020	"		ND			70.6	30	**QR-03**
Surrogate: p-Terphenyl-d14	*0.0253*		*"*	*0.0267*		*95.0*	*13-180*			

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0665 - EPA 8270-SIM Preparation: EPA 3550C MS 04/23/19 14:20										
Matrix Spike (B9D0665-MS1) **Source: 1901966-27** Analyzed: 04/24/19 21:14										
Acenaphthene	0.0226	0.020	mg/kg	0.0266	ND	85.0	23-126			
Acenaphthylene	0.0240	0.020	"	0.0266	ND	90.0	20-126			
Anthracene	0.0240	0.020	"	0.0266	ND	90.0	44-142			
Benz (a) anthracene	0.0280	0.020	"	0.0266	ND	105	40-161			
Benzo (b) fluoranthene	0.0386	0.020	"	0.0266	ND	145	33-179			
Benzo (k) fluoranthene	0.0293	0.020	"	0.0266	ND	110	44-184			
Benzo (a) pyrene	0.0360	0.020	"	0.0266	ND	135	50-156			
Benzo (g,h,i) perylene	0.0813	0.040	"	0.0266	ND	305	10-169			QM-07
Chrysene	0.0306	0.020	"	0.0266	ND	115	42-163			
Dibenz (a,h) anthracene	0.0413	0.040	"	0.0266	ND	155	17-157			
Fluoranthene	0.0333	0.020	"	0.0266	ND	125	43-154			
Fluorene	0.0213	0.020	"	0.0266	ND	80.0	29-130			
Indeno (1,2,3-cd) pyrene	0.0386	0.020	"	0.0266	ND	145	11-169			
Naphthalene	ND	0.040	"	0.0266	ND		10-123			QM-12
Phenanthrene	0.0280	0.020	"	0.0266	ND	105	29-146			
Pyrene	0.0346	0.020	"	0.0266	ND	130	42-152			
Surrogate: p-Terphenyl-d14	*0.0213*		*"*	*0.0266*		*80.0*	*13-180*			
Matrix Spike Dup (B9D0665-MSD1) **Source: 1901966-27** Analyzed: 04/24/19 20:52										
Acenaphthene	0.0227	0.020	mg/kg	0.0266	ND	85.0	23-126	0.0333	30	
Acenaphthylene	0.0227	0.020	"	0.0266	ND	85.0	20-126	5.68	30	
Anthracene	0.0253	0.020	"	0.0266	ND	95.0	44-142	5.44	30	
Benz (a) anthracene	0.0306	0.020	"	0.0266	ND	115	40-161	9.12	30	
Benzo (b) fluoranthene	0.0320	0.020	"	0.0266	ND	120	33-179	18.8	30	
Benzo (k) fluoranthene	0.0346	0.020	"	0.0266	ND	130	44-184	16.7	30	
Benzo (a) pyrene	0.0293	0.020	"	0.0266	ND	110	50-156	20.4	30	
Benzo (g,h,i) perylene	0.0386	0.040	"	0.0266	ND	145	10-169	71.1	30	QR-04
Chrysene	0.0306	0.020	"	0.0266	ND	115	42-163	0.0333	30	
Dibenz (a,h) anthracene	0.0213	0.040	"	0.0266	ND	80.0	17-157	63.8	30	QR-02
Fluoranthene	0.0240	0.020	"	0.0266	ND	90.0	43-154	32.5	30	QR-02
Fluorene	0.0266	0.020	"	0.0266	ND	100	29-130	22.3	30	
Indeno (1,2,3-cd) pyrene	0.0240	0.020	"	0.0266	ND	90.0	11-169	46.8	30	QR-02
Naphthalene	ND	0.040	"	0.0266	ND		10-123		30	QM-12
Phenanthrene	0.0293	0.020	"	0.0266	ND	110	29-146	4.68	30	
Pyrene	0.0253	0.020	"	0.0266	ND	95.0	42-152	31.1	30	QR-02
Surrogate: p-Terphenyl-d14	*0.0187*		*"*	*0.0266*		*70.0*	*13-180*			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0848 - EPA 8270-SIM Preparation: EPA 3550C MS 04/30/19 10:06										
Blank (B9D0848-BLK1) Analyzed: 04/30/19 19:56										
Acenaphthene	ND	0.0050	mg/kg							
Acenaphthylene	ND	0.0050	"							
Anthracene	ND	0.0050	"							
Benz (a) anthracene	ND	0.0050	"							
Benzo (b) fluoranthene	ND	0.0050	"							
Benzo (k) fluoranthene	ND	0.0050	"							
Benzo (a) pyrene	ND	0.0050	"							
Benzo (g,h,i) perylene	ND	0.010	"							
Chrysene	ND	0.0050	"							
Dibenz (a,h) anthracene	ND	0.010	"							
Fluoranthene	ND	0.0050	"							
Fluorene	ND	0.0050	"							
Indeno (1,2,3-cd) pyrene	ND	0.0050	"							
Naphthalene	ND	0.010	"							
Phenanthrene	ND	0.0050	"							
Pyrene	ND	0.0050	"							
Surrogate: p-Terphenyl-d14	*0.0360*		"	*0.0266*		*135*	*13-180*			
LCS (B9D0848-BS1) Analyzed: 04/30/19 18:33										
Acenaphthene	0.0133	0.0050	mg/kg	0.0266		50.0	30-116			
Acenaphthylene	0.0126	0.0050	"	0.0266		47.5	26-118			
Anthracene	0.0140	0.0050	"	0.0266		52.5	45-135			
Benz (a) anthracene	0.0280	0.0050	"	0.0266		105	70-135			
Benzo (b) fluoranthene	0.0276	0.0050	"	0.0266		104	61-145			
Benzo (k) fluoranthene	0.0250	0.0050	"	0.0266		93.7	70-157			
Benzo (a) pyrene	0.0240	0.0050	"	0.0266		90.0	69-146			
Benzo (g,h,i) perylene	0.0280	0.010	"	0.0266		105	50-164			
Chrysene	0.0196	0.0050	"	0.0266		73.8	78-142			QM-08
Dibenz (a,h) anthracene	0.0330	0.010	"	0.0266		124	50-159			
Fluoranthene	0.0233	0.0050	"	0.0266		87.5	73-125			
Fluorene	0.0140	0.0050	"	0.0266		52.5	29-122			
Indeno (1,2,3-cd) pyrene	0.0260	0.0050	"	0.0266		97.5	52-164			
Naphthalene	0.0130	0.010	"	0.0266		48.8	22-113			
Phenanthrene	0.0163	0.0050	"	0.0266		61.2	36-125			
Pyrene	0.0233	0.0050	"	0.0266		87.5	72-127			
Surrogate: p-Terphenyl-d14	*0.0280*		"	*0.0266*		*105*	*13-180*			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0848 - EPA 8270-SIM Preparation: EPA 3550C MS 04/30/19 10:06										
LCS Dup (B9D0848-BSD1)				Analyzed: 04/30/19 18:54						
Acenaphthene	0.0183	0.0050	mg/kg	0.0266		68.8	30-116	31.6	30	QR-02
Acenaphthylene	0.0163	0.0050	"	0.0266		61.2	26-118	25.4	30	
Anthracene	0.0170	0.0050	"	0.0266		63.7	45-135	19.4	30	
Benz (a) anthracene	0.0276	0.0050	"	0.0266		104	70-135	1.13	30	
Benzo (b) fluoranthene	0.0356	0.0050	"	0.0266		134	61-145	25.3	30	
Benzo (k) fluoranthene	0.0320	0.0050	"	0.0266		120	70-157	24.6	30	
Benzo (a) pyrene	0.0237	0.0050	"	0.0266		88.8	69-146	1.33	30	
Benzo (g,h,i) perylene	0.0260	0.010	"	0.0266		97.5	50-164	7.34	30	
Chrysene	0.0253	0.0050	"	0.0266		95.0	78-142	25.3	30	
Dibenz (a,h) anthracene	0.0306	0.010	"	0.0266		115	50-159	7.26	30	
Fluoranthene	0.0237	0.0050	"	0.0266		88.8	73-125	1.49	30	
Fluorene	0.0273	0.0050	"	0.0266		102	29-122	64.6	30	QR-02
Indeno (1,2,3-cd) pyrene	0.0243	0.0050	"	0.0266		91.2	52-164	6.56	30	
Naphthalene	0.0170	0.010	"	0.0266		63.7	22-113	26.7	30	
Phenanthrene	0.0217	0.0050	"	0.0266		81.2	36-125	28.1	30	
Pyrene	0.0280	0.0050	"	0.0266		105	72-127	18.2	30	
Surrogate: p-Terphenyl-d14	*0.0256*		*"*	*0.0266*		*96.3*	*13-180*			
Duplicate (B9D0848-DUP1)	**Source: 1902128-13**			Analyzed: 04/30/19 20:16						
Acenaphthene	ND	0.0050	mg/kg		ND				30	
Acenaphthylene	ND	0.0050	"		ND				30	
Anthracene	ND	0.0050	"		ND				30	
Benz (a) anthracene	ND	0.0050	"		ND				30	
Benzo (b) fluoranthene	ND	0.0050	"		ND				30	
Benzo (k) fluoranthene	ND	0.0050	"		ND				30	
Benzo (a) pyrene	ND	0.0050	"		ND				30	
Benzo (g,h,i) perylene	ND	0.010	"		ND				30	
Chrysene	ND	0.0050	"		ND				30	
Dibenz (a,h) anthracene	ND	0.010	"		ND				30	
Fluoranthene	ND	0.0050	"		ND				30	
Fluorene	ND	0.0050	"		ND				30	
Indeno (1,2,3-cd) pyrene	ND	0.0050	"		ND				30	
Naphthalene	ND	0.010	"		ND				30	
Phenanthrene	ND	0.0050	"		ND				30	
Pyrene	ND	0.0050	"		ND				30	
Surrogate: p-Terphenyl-d14	*0.0186*		*"*	*0.0266*		*70.0*	*13-180*			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Polynuclear Aromatic Compounds by GC/MS with Selected Ion Monitoring - Quality Control

Analyte	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0848 - EPA 8270-SIM Preparation: EPA 3550C MS 04/30/19 10:06										
Matrix Spike (B9D0848-MS1) **Source: 1902128-13** Analyzed: 04/30/19 19:14										
Acenaphthene	0.0107	0.0050	mg/kg	0.0266	ND	40.0	23-126			
Acenaphthylene	0.0110	0.0050	"	0.0266	ND	41.2	20-126			
Anthracene	0.0127	0.0050	"	0.0266	ND	47.5	44-142			
Benz (a) anthracene	0.0283	0.0050	"	0.0266	ND	106	40-161			
Benzo (b) fluoranthene	0.0233	0.0050	"	0.0266	ND	87.5	33-179			
Benzo (k) fluoranthene	0.0210	0.0050	"	0.0266	ND	78.8	44-184			
Benzo (a) pyrene	0.0260	0.0050	"	0.0266	ND	97.5	50-156			
Benzo (g,h,i) perylene	0.0296	0.010	"	0.0266	ND	111	10-169			
Chrysene	0.0240	0.0050	"	0.0266	ND	90.0	42-163			
Dibenz (a,h) anthracene	0.0350	0.010	"	0.0266	ND	131	17-157			
Fluoranthene	0.0207	0.0050	"	0.0266	ND	77.5	43-154			
Fluorene	0.0113	0.0050	"	0.0266	ND	42.5	29-130			
Indeno (1,2,3-cd) pyrene	0.0270	0.0050	"	0.0266	ND	101	11-169			
Naphthalene	0.00966	0.010	"	0.0266	ND	36.2	10-123			
Phenanthrene	0.0147	0.0050	"	0.0266	ND	55.0	29-146			
Pyrene	0.0220	0.0050	"	0.0266	ND	82.5	42-152			
Surrogate: p-Terphenyl-d14	*0.0256*		*"*	*0.0266*		*96.3*	*13-180*			
Matrix Spike Dup (B9D0848-MSD1) **Source: 1902128-13** Analyzed: 04/30/19 19:35										
Acenaphthene	0.0173	0.0050	mg/kg	0.0266	ND	65.0	23-126	47.6	30	**QR-02**
Acenaphthylene	0.0170	0.0050	"	0.0266	ND	63.7	20-126	42.9	30	**QR-02**
Anthracene	0.0187	0.0050	"	0.0266	ND	70.0	44-142	38.3	30	**QR-02**
Benz (a) anthracene	0.0260	0.0050	"	0.0266	ND	97.5	40-161	8.59	30	
Benzo (b) fluoranthene	0.0256	0.0050	"	0.0266	ND	96.3	33-179	9.52	30	
Benzo (k) fluoranthene	0.0237	0.0050	"	0.0266	ND	88.8	44-184	11.9	30	
Benzo (a) pyrene	0.0233	0.0050	"	0.0266	ND	87.5	50-156	10.8	30	
Benzo (g,h,i) perylene	0.0463	0.010	"	0.0266	ND	174	10-169	43.9	30	**QM-11, QR-04**
Chrysene	0.0230	0.0050	"	0.0266	ND	86.3	42-163	4.26	30	
Dibenz (a,h) anthracene	0.0550	0.010	"	0.0266	ND	206	17-157	44.4	30	**QM-11, QR-04**
Fluoranthene	0.0250	0.0050	"	0.0266	ND	93.7	43-154	19.0	30	
Fluorene	0.0167	0.0050	"	0.0266	ND	62.5	29-130	38.1	30	**QR-02**
Indeno (1,2,3-cd) pyrene	0.0433	0.0050	"	0.0266	ND	162	11-169	46.4	30	**QR-02**
Naphthalene	0.0157	0.010	"	0.0266	ND	58.8	10-123	47.4	30	**QR-02**
Phenanthrene	0.0190	0.0050	"	0.0266	ND	71.2	29-146	25.7	30	
Pyrene	0.0243	0.0050	"	0.0266	ND	91.2	42-152	10.1	30	
Surrogate: p-Terphenyl-d14	*0.0293*		*"*	*0.0266*		*110*	*13-180*			

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180 N. Ashwood Ave.	Project Number: 18-06506/604 E. Ortega St., Santa Barbara, CA	1901966
Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Notes and Definitions

QB-01	The method blank contains analyte at a concentration above the RL/PQL; however, concentration is less than 10% of the sample result, which is negligible according to method criteria.
B-02	The method blank contains analyte at a J-flag concentration.
B-02n	The method blank contains analyte at a J-flag concentration. Concentration is less than 10% of the sample result, which is negligible according to method criteria.
C-01	To reduce matrix interference, the sample extract has undergone sulfuric acid clean-up, method 3665, which is specific to hydrocarbon contamination.
C-06	To reduce matrix interference, the sample extract has undergone pentane clean-up, which is specific to contamination from high molecular weight material (asphaltenes).
CCHI	The CCV for this analyte failed high. Analyte result is ND. Data is not impacted.
D-04	The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
HT-03	This sample was analyzed outside of the EPA recommended holding time per the client's request.
HT-04	This sample was extracted outside of the EPA recommended holding time per the client's request.
ISlowA	The internal standard associated with this analyte fails the method criteria on the low side. Results may be biased high.
N-01	Analyte concentration exceeds TTLC.
N-02	Analyte concentration below TTLC but above 10x STLC.
B-01	The method blank contains analyte at a concentration above the RL/PQL.
N-07	STLC analyte concentration exceeds STLC limit.
S-LOW	Low surrogate recovery confirmed as a matrix effect by a second analysis.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS and/or LCSD recovery and/or RPD values.
QM-08	The spike recovery was outside acceptance limits for the LCS. The batch was accepted based on acceptable LCSD recovery.
QM-09	The spike recovery was outside acceptance limits for the LCSD. The batch was accepted based on acceptable LCS recovery.
QM-11	Spike recovery fails high. Sample results are ND. Data results are not impacted.
QM-12	The spike recoveries for the MS and/or MSD are not available due to sample dilution required from high analyte concentration and/or matrix interference(s).
QM-4X	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-04	The RPD exceeded the QC control limits.

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Ventura CA, 93003	Project Manager: Nico Navarro	05/31/2019 12:54

Notes and Definitions

R-01	The Reporting Limit has been raised to account for matrix interference.
R-05	The sample was diluted due to the presence of high levels of non-target analytes resulting in elevated reporting limits.
S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
N-03	Analyte concentration above 20x TCLP.
RL	Reporting Limit (Quantitation Limit)
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference

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Oilfield Environmental and Compliance

307 Roemer Way Suite 300, Santa Maria, CA 93454
Phone: (805) 922-4772 Fax: (805) 925-3376 www.oecusa.com

101 Adkisson Way, Taft, CA 93268
Phone: (661) 762-9143

CHAIN OF CUSTODY

Company: RINCON CONSULTANTS
Address: 180 N. ASHWOOD AVE
City/State/ZIP: VENTURA, CA 93003
Phone: 805.223.5066 Fax: —— E-mail: nnavarro@rinconconsultants.com
Report To: NICO NAVARRO Sampler: NICO NAVARRO
Report Format(s): FAX- ☐ PDF (std)- ☒ Colt/LUFT EDF- ☐ EDD- ☐
Turnaround Time: 10 Days- ☐ 5 Days (std)- ☒ 3 Days- ☐ 2 Days- ☐ 1 Day- ☐ ASAP- ☐
NOTE: Samples received after 4:00PM will be considered as received the next business day

Project Name/#: ORTEGA PARK / 18-06506
Site:

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPH by EPA 8015M	PAH by EPA 8270	Title 22 - EPA 6010B metals	EPA Mercury 7471A	VOCs by EPA 8260B	PCBs by EPA 8082	Special Instructions:
1901960 01	4.16.19 / 830	S		RB1-2							HOLD
02	/ 830			RB1-4							
03	/ 900			RB2-2							
04	/ 900			RB2-4							
05	/ 910			RB3-2							
06	/ 910			RB3-4							
07	/ 925			RB7-2							
08	/ 925			RB7-4							
09	/ 945			RB4-2							
10	/ 945			RB4-4							
11	/ 950			RB6-2							
12	/ 950	↓		RB6-4							↓

Relinquished By:	Nico Navarro	Date: 4.16.19	Time: 17:15
Received By:		Date: 4/16/19	Time: 1715
Relinquished By:		Date: 4/16/19	Time: 1912
Received By:	OEC FRIDGE	Date: 4/16/19	Time: 1912
Relinquished By:	OEC FRIDGE	Date: 4/17/19	Time: 0755
Received By:		Date: 4/17/19	Time: 0755

Matrix Key**:
A = air / vapor
AQ = aqueous
DW = drinking water
F = filter
GW = ground water
P = product / oil
PW = product water
S = solid / sediment
SW = surface water
WP = wipe
WW = waste water

Comments/PO#:

Oilfield Environmental and Compliance

307 Roemer Way Suite 300, Santa Maria, CA 93454
Phone: (805) 922-4772 Fax: (805) 925-3376 www.oecusa.com

101 Adkisson Way, Taft, CA 93268
Phone: (661) 762-9143

CHAIN OF CUSTODY

Company: RINCON CONSULTANTS
Address: 180 N. ASHWOOD AVE
City/State/ZIP: VENTURA, CA 93003
Phone: 805-223-5066 Fax: — E-mail: nnavarro@rinconconsultants.com
Report To: NICO NAVARRO Sampler: NICO NAVARRO
Report Format(s): FAX- ☐ PDF (std)- ☒ Colt/LUFT EDF- ☐ EDD- ☐
Turnaround Time: 10 Days- ☐ 5 Days (std)- ☒ 3 Days- ☐ 2 Days- ☐ 1 Day- ☐ ASAP- ☐
NOTE: Samples received after 4:00PM will be considered as received the next business day

Project Name/#: ORTEGA PARK / 18-06506
Site:

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPH by EPA 8015M	PAH by EPA 8270	Title 22 Metals - EPA 6010B	Mercury by EPA 7471A	VOCs by EPA 8260B	PCBs by EPA 8082	Special Instructions:
1901904 13	4.16.19/1000	S	1	RB5-2							HOLD
14	/1000			RB5-4							
15	/1020			RB9-2							
16	/1020			RB9-4							
17	/1030			RB10-2							
18	/1030			RB10-4							
19	/1345			HP4-5							
20	/1350			HP4-10							
21	/1410			RB15-2							
22	/1415			RB15-4							
23	/1420			RB14-2							
24	/1420			RB14-4							

Relinquished By:	Nico Navarro	Date: 4.16.19	Time: 17:15
Received By:		Date: 4/16/19	Time: 1715
Relinquished By:		Date: 4/16/19	Time: 1912
Received By:	OEC FRIDGE	Date: 4/16/19	Time: 1912
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Turnaround Time: 10 Days- ☐ 5 Days (std)- ☒ 3 Days- ☐ 2 Days- ☐ 1 Day- ☐ ASAP- ☐
NOTE: Samples received after 4:00PM will be considered as received the next business day

Project Name/#: ORTEGA PARK / 18-06506
Site:

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPH by EPA 8015M	PAH by EPA 8270	Title 22 - EPA 6010B Metals	Mercury - EPA 7471A	VOCs by EPA 8260B	PCBs by EPA 8082	Special Instructions
1901961 25	4.16.19/1045	S	1	HP5-5							HOLD
26	/1050			HP5-10							
27	/1150			RB11-2							
28	/1150			RB11-4							
29	/1220			HP3-5							
30	/1225			HP3-10							
31	/1435			HP2-5							
32	/1440			HP2-10							
33	/1450			HP1-5							
34	/1455			HP1-10							
35	/1510			RB13-2							
36	/1510			RB13-4							

Relinquished By:	Nico Navarro	Date: 4.16.19	Time: 1915
Received By:		Date: 4/16/19	Time: 1915
Relinquished By:		Date: 4/16/19	Time: 1912
Received By:	OEC FRIDGE	Date: 4/16/19	Time: 1912
Relinquished By:	OEC	Date: 4/17/19	Time: 0755
Received By:		Date: 4/17/19	Time: 0755

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Page 4 of 4

Company: RINCON CONSULTANTS
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Report To: NICO NAVARRO Sampler: NICO NAVARRO
Report Format(s): FAX- ☐ PDF (std)- ☒ Colt/LUFT EDF- ☐ EDD- ☐
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Project Name/#: ORTEGA PARK / 18-06506
Site:

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPH by EPA 8015M	PAH by EPA 8270	Title 22 metals - EPA 6010B	Mercury EPA 7471A	VOCs by EPA 8260B	PCBs by EPA 8082	Special Instructions:
1901961	4.16.19/1525	S	1	RB8-2							HOLD
	/1525			RB8-4							
	/1518			RB12							
	4/16/19 NN										

Relinquished By: Nico Navarro Date: 4.16.19 Time: 1715
Received By: Date: 4/16/19 Time: 1715
Relinquished By: Date: 4/16/19 Time: 1912
Received By: OEC FRIDGE Date: 4/16/19 Time: 1912
Relinquished By: OEC FRIDGE Date: 4/17/19 Time: 0755
Received By: Date: 4/17/19 Time: 0755

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Comments/PO#:

Rev. 09/23/2014

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101 Adkisson Way, Taft, CA 93268
Phone: (661) 762-9143

CHAIN OF CUSTODY

Page 1 of 4

Company: Rincon Consultants
Address: 180 N. Ashwood Ave
City/State/ZIP: Ventura, CA 93003
Phone: 805.223.5066 Fax: —— E-mail: nnavarro@rinconconsultants.com
Report To: Nico Navarro Sampler: Nico Navarro
Report Format(s): FAX- ☐ PDF (std)- ☒ Colt/LUFT EDF- ☐ EDD- ☐
Turnaround Time: 10 Days- ☐ 5 Days (std)- ☒ 3 Days- ☐ 2 Days- ☐ 1 Day- ☐ ASAP- ☐
NOTE: Samples received after 4:00PM will be considered as received the next business day

Project Name/#: Ortega Park / 18-06506
Site: 604 E Ortega St, Santa Barbara, CA

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPH by EPA 8015M	PAH by EPA 8270	Title 22 – EPA 6010B metals	Mercury EPA 7471A	VOC* by EPA 8260B	PCBs by EPA 8082	Hold (4/17/19)	Special Instructions:
1901960 01	4.16.19/830	S	1	RB1-2	X	X	X	X				Report MDL
02	/ 830			RB1-4							X	HOLD
03	/ 900			RB2-2	X	X	X	X				
04	/ 900			RB2-4							X	
05	/ 910			RB3-2							X	
06	/ 910			RB3-4	X	X	X	X	X	X		
07	/ 925			RB7-2							X	
08	/ 925			RB7-4	X	X	X	X	X	X		
09	/ 945			RB4-2							X	
10	/ 945			RB4-4	X	X	X	X	X	X		
11	/ 950			RB6-2							X	
12	/ 950			RB6-4	X	X	X	X	X			

Relinquished By:	Nico Navarro	Date: 4.16.19	Time: 17:15
Received By:		Date: 4/16/19	Time: 1715
Relinquished By:		Date: 4/16/19	Time: 1912
Received By:	OEC FRIDGE	Date: 4/16/19	Time: 1912
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Comments/PO#:
* Including oxygenates
X Requested 4/17/19 (CW)

Rev. 09/23/2014

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101 Adkisson Way, Taft, CA 93268
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CHAIN OF CUSTODY

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Address: 180 N. ASHWOOD AVE
City/State/ZIP: VENTURA, CA 93003
Phone: 805-223-5066 Fax: — E-mail: nnavarro@rinconconsultants.com
Report To: NICO NAVARRO Sampler: NICO NAVARRO
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Turnaround Time: 10 Days- ☐ 5 Days (std)- ☒ 3 Days- ☐ 2 Days- ☐ 1 Day- ☐ ASAP- ☐
NOTE: Samples received after 4:00PM will be considered as received the next business day

Project Name/#: ORTEGA PARK / 18-06506
Site: 604 E Ortega St, Santa Barbara, CA

Special Instructions: Report MDL

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPH by EPA 8015M	PAH by EPA 8270	Title 22 Metals - EPA 6010B	Mercury by EPA 7471A	VOC's by EPA 8260B*	PCBs by EPA 8082	Hold (4/17/19)				
190416-13	4.16.19/1000	S	1	RB5-2							X				HOLD
14	/1000			RB5-4	X	X	X	X	X						
15	/1020			RB9-2							X				
16	/1020			RB9-4	X	X	X	X	X	X					
17	/1030			RB10-2	X	X	X	X	X						
18	/1030			RB10-4							X				
19	/1345			HP4-5	X	X	X	X							
20	/1350			HP4-10	X	X	X	X	X						
21	/1410			RB15-2	X	X	X	X							
22	/1415			RB15-4							X				
23	/1420			RB14-2	X	X	X	X							
24	/1420			RB14-4							X				

Relinquished By:	[signature]	Date: 4.16.19	Time: 17:15
Received By:	[signature]	Date: 4/16/19	Time: 1715
Relinquished By:	[signature]	Date: 4/16/19	Time: 1912
Received By:	OEC FRIDGE	Date: 4/16/19	Time: 1912
Relinquished By:	OEC FRIDGE	Date: 4/17/19	Time: 0755
Received By:	[signature]	Date: 4/17/19	Time: 0755

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Comments/PO#:
* Including oxygenates
X Requested 4/17/19 ow

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Project Name/#: ORTEGA PARK / 18-06506
Site: 604 E Ortega St, Santa Barbara, CA

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPH by EPA 8015M	PAH by EPA 8270	Title 22 Metals - EPA 6010B	Mercury - EPA 7471A	VOC* by EPA 8260B	PCB's by EPA 8082	Hold (4/17/19)	Special Instructions:
19041166 26	4.16.19/1045	S	1	HP5-5	X	X	X	X				HOLD
27	/1050			HP5-10	X	X	X	X				
28	/1150			RB11-2	X	X	X	X				
29	/1150			RB11-4							X	
30	/1220			HP3-5	X	X	X	X				
31	/1225			HP3-10	X	X	X	X				
32	/1435			HP2-5	X	X	X	X				
33	/1440			HP2-10	X	X	X	X				
34	/1450			HP1-5	X	X	X	X	X			
35	/1455			HP1-10	X	X	X	X				
36	/1510			RB13-2	X	X	X	X				
37	/1510			RB13-4							X	

Relinquished By:	Nico Navarro	Date: 4.16.19	Time: 1915
Received By:		Date: 4/16/19	Time: 1715
Relinquished By:		Date: 4/16/19	Time: 1912
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Comments/PO#:
* Including oxygenates
X Requested 4/17/19 ☑

Rev. 09/23/2014

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Site: 604 E Ortega st, Santa Barbara, CA

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPH by EPA 8015M	PAH by EPA 8270	Title 22 - EPA 6010B metals	Mercury EPA 7471A	VOCs by EPA 8260B	PCBs by EPA 8082	Hold 4/17/19				Special Instructions:
1901904	4.16.19/1525	S	1	RB8-2	X	X	X	X							Report MDL
05	/1525			RB8-4							X				HOLD
06	/1518			RB12-1	X	X	X	X	X	X					
	NN 4/17/19														

Relinquished By: Nico Navarro Date: 4.16.19 Time: 1715
Received By: Date: 4/16/19 Time: 1715
Relinquished By: Date: 4/16/19 Time: 1912
Received By: OEC FRIDGE Date: 4/16/19 Time: 1912
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Received By: Date: 4/17/19 Time: 0755

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WP = wipe
WW = waste water

Comments/PO#:
* Including oxygenates
X Requested 4/17/19 (AW)

CLIENT: Rincon

WORK ORDER: 19019666 TEMPERATURE: 3.5 °C SAMPLE RECEIPT

Recorded Corrected; Acceptable Range: 0°C to 6°C [see exception notes below]

COC RECEIVED DATE/TIME: 4/17/19 755

LOGIN DATE/TIME: 4/17/19 1130

REFRIGERATOR(S): 8

SAMPLE TRANSPORT

- ☑ OEC Courier/Sampler
- ☐ Delivery (Other than OEC)
- ☐ After-Hours Outside Drop-Off [Brought Inside]
  - Initials/Date/Time: _____
- ☐ Shipment Carrier: _____
  - Tracking #: _____

CUSTODY SEALS ☑ None Present

Cooler(s): ☐ Present, Intact ☐ Present, Not Intact ☐ None

Sample(s): ☐ Present, Intact ☐ Present, Not Intact ☐ None

SAMPLE RECEIPT, CONDITION, PRESERVATION

- ☑ Samples Received on Ice Within Temperature Range [Acceptable]
- ☐ Samples Received Outside Temperature Range [Acceptable]
  - ☐ Direct from Field, on Ice
  - ☐ Ambient: Air or Filter Matrix
  - ☐ Received Ambient, Placed on Ice for Transport
  - ☐ Sample Temperature Acceptable for Analysis Requested
- ☐ Samples Received Outside Temperature Range [Exception] *.
  - ☐ Insufficient Ice or Unknown Cause
- ☐ Excessive Free Liquid in Sample Bags or Cooler

(*) Narration Comment Required	YES	NO	N/A
Completed COC(s) Received With Samples	☑	☐ *	
Correct Container(s)/Preserve for Analysis	☑	☐ *	
Container(s) Intact and in Good Condition	☑	☐ *	
Container Label(s) Consistent with COC	☑ CH	☐ *	4/17/19
OEC Preservation Added **	☐	☑	
Sample Quantity Sufficient & Appropriate	☑	☐ *	
VOA Containers Free of Headspace	☐	☐ *	☑
Tedlar Bag(s) Free of Condensation	☐	☐ *	☑

☐ See attached **PROBLEM CHAIN** for additional narration comments

(**) OEC Presrv. ID

CONTAINERS, COC CHANGES, AND/OR CORRECTIONS

OEC CONTAINER ID	CONTAINER DESCRIPTION	PRESERVATIVE	CHECKS: Cl⁻, S⁻ &/or pH	MATRIX	COMMENTS	INITIALS (Narration Comments Only)
01-39A	1- Plastic tube Ea	—	—	S	8 * SAMPLE 39A IS LABELED RB12-1 COC RB12 CC	
					* CLIENT RESPONDED & REQUESTED THAT "RB12-1" BE USED AS SAMPLE ID.	EM 04/17
1,3,6,8,10,12B	1-20mL VOA EA	—	—	S	(VOA-1)	
14,16-17,19-21B	↓	—	—	↓	↓	
23,25-27,29-35B		—	—			
37,39B	↓	—	—	↓	↓	

Rev. 02/25/2019

RECEIPT LOGIN BY: JK

RECEIPT REVIEWED BY: CH

Oilfield Environmental and Compliance

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CHAIN OF CUSTODY

Page 1 of 4

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NOTE: Samples received after 4:00PM will be considered as received the next business day

Project Name/#: ORTEGA PARK / 18-06506
Site: 604 E Ortega St, Santa Barbara, CA

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPH by EPA 8015M	PAH by EPA 8270	Title 22 – EPA 6010B metals	Mercury EPA 7471A	VOCs by EPA 8260B	PCBs by EPA 8082	Hold (4/17/19)	Total As, Ba, Cr	STLC Cr	Total Pb	Special Instructions:
1904166 01	4.16.19 / 830	S	1	RB1-2	X	X	X	X							HOLD
02	/ 830			RB1-4							X				
03	/ 900			RB2-2	X	X	X	X							
04	/ 900			RB2-4							X				
05	/ 910			RB3-2		▲					X				
06	/ 910			RB3-4	X	X	X	X	X	X					
07	/ 925			RB7-2	▲	▲					X	▲		▲	
08	/ 925			RB7-4	X	X	X	X	X	X					
09	/ 945			RB4-2	▲						X				
10	/ 945			RB4-4	X	X	X	X	X	X					
11	/ 950			RB6-2	▲	▲			▲		X				
12	/ 950			RB6-4	X	X	X	X	X						

Special Instructions: Report MDL ▲added 4.30.19 am2

Relinquished By: Nico Navarro Date: 4.16.19 Time: 14:15
Received By: Date: 4/16/19 Time: 1715
Relinquished By: Date: 4/16/19 Time: 1912
Received By: OEC FRIDGE Date: 4/16/19 Time: 1912
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Comments/PO#:
* Including oxygenates
X Requested 4/17/19 (W)

Rev. 09/23/2014

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Phone: (805) 922-4772 Fax: (805) 925-3376 www.oecusa.com

101 Adkisson Way, Taft, CA 93268
Phone: (661) 762-9143

CHAIN OF CUSTODY

Company: RINCON CONSULTANTS
Address: 180 N. ASHWOOD AVE
City/State/ZIP: VENTURA, CA 93003
Phone: 805.223.5066 Fax: —— E-mail: nnavarro@rinconconsultants.com
Report To: NICO NAVARRO Sampler: NICO NAVARRO
Report Format(s): FAX- ☐ PDF (std)- ☒ Colt/LUFT EDF- ☐ EDD- ☐
Turnaround Time: 10 Days- ☐ 5 Days (std)- ☒ 3 Days- ☐ 2 Days- ☐ 1 Day- ☐ ASAP- ☐
NOTE: Samples received after 4:00PM will be considered as received the next business day

Project Name/#: ORTEGA PARK / 18-06506
Site:

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPH by EPA 8015M	PAH by EPA 8270	Title 22 - EPA metals	EPA Mercury 7471A	VOCs by EPA 8260B	PCBs by EPA 8082	STLC 17 LUFT Pb	TOTAL Zn	STLC Zn		Special Instructions
1901901	4.16.19/830	S		RB1-2											HOLD
02	/ 830			RB1-4											
03	/ 900			RB2-2											
04	/ 900			RB2-4											
05	/ 910			RB3-2											
06	/ 910			RB3-4											
07	/ 925			RB7-2											
08	/ 925			RB7-4							▲				
09	/ 945			RB4-2											
10	/ 945			RB4-4											
11	/ 950			RB6-2								▲			
12	/ 950			RB6-4							▲		▲		

Relinquished By:	Nico Navarro	Date: 4.16.19	Time: 17:15
Received By:		Date: 4/16/19	Time: 1715
Relinquished By:		Date: 4/16/19	Time: 1912
Received By:	OEC FRIDGE	Date: 4/16/19	Time: 1912
Relinquished By:	OEC FRIDGE	Date: 4/17/19	Time: 0755
Received By:		Date: 4/17/19	Time: 0755

Matrix Key:**
A = air / vapor
AQ = aqueous
DW = drinking water
F = filter
GW = ground water
P = product / oil
PW = product water
S = solid / sediment
SW = surface water
WP = wipe
WW = waste water

Comments/PO#:

Oilfield Environmental and Compliance

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Phone: (805) 922-4772 Fax: (805) 925-3376 www.oecusa.com

101 Adkisson Way, Taft, CA 93268
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CHAIN OF CUSTODY

Page 2 of 4

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Report To: NICO NAVARRO Sampler: NICO NAVARRO
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Project Name/#: ORTEGA PARK / 18-06506
Site: 604 E Ortega St, Santa Barbara, CA

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPH by EPA 8015M	PAH by EPA 8270	Title 22 Metals - EPA 6010B	Mercury by EPA 7471A	VOC by EPA 8260B	PCBs by EPA 8082	Hold (4/17/19)	TOTAL Cr	STLC / TCLP Cr	TOTAL Pb	Special Instructions:
1904100-13	4.16.19/1000	S	1	RB5-2		▲					X	▲		▲	HOLD
14	/1000			RB5-4	X	X	X	X	X				▲		
15	/1020			RB9-2	▲						X			▲	
16	/1020			RB9-4	X	X	X	X	X	X					
17	/1030			RB10-2	X	X	X	X	X						
18	/1030			RB10-4	▲						X			▲	
19	/1345			HP4-5	X	X	X	X							
20	/1350			HP4-10	X	X	X	X	X						
21	/1410			RB15-2	X	X	X	X							
22	/1415			RB15-4							X				
23	/1420	↓	↓	RB14-2	X	X	X	X							↓
24	/1420			RB14-4							X				

Relinquished By: [signature] Date: 4.16.19 Time: 17:15
Received By: [signature] Date: 4/16/19 Time: 1715
Relinquished By: [signature] Date: 4/16/19 Time: 1912
Received By: OEC FRIDGE Date: 4/16/19 Time: 1912
Relinquished By: OEC FRIDGE Date: 4/17/19 Time: 0755
Received By: [signature] Date: 4/17/19 Time: 0755

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WP = wipe
WW = waste water

Comments/PO#:
* Including oxygenates
X Requested 4/17/19 ew

Rev. 09/23/2014

Oilfield Environmental and Compliance

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101 Adkisson Way, Taft, CA 93268
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Project Name/#: ORTEGA PARK / 18-06506
Site:

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPH by EPA 8015M	PAH by EPA 8270	Title 26 Metals - EPA 6010B	Mercury by 7471A	VOCs by EPA 8260B	PCBs by EPA 8082	STLC/TCLP Pb	Total Hg	STLC Hg	Total Thallium	Special Instructions:
1901910 13	4.16.19/1000	S	1	RB5-2								▲			HOLD
14	/1000			RB5-4							▲		▲*		
15	/1020			RB9-2										▲	
16	/1020			RB9-4							▲				
17	/1030			RB10-2							▲				
18	/1030			RB10-4											
19	/1345			HP4-5											
20	/1350			HP4-10							▲				
21	/1410			RB15-2											
22	/1415			RB15-4											
23	/1420			RB14-2											
24	/1420			RB14-4										▲	

Relinquished By:	Nico Navarro	Date: 4.16.19	Time: 17:15
Received By:		Date: 4/16/19	Time: 1715
Relinquished By:		Date: 4/16/19	Time: 1912
Received By:	OEC FRIDGE	Date: 4/16/19	Time: 1912
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Comments/PO#:
*TCLP only

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Turnaround Time: 10 Days- ☐ 5 Days (std)- ☒ 3 Days- ☐ 2 Days- ☐ 1 Day- ☐ ASAP- ☐
NOTE: Samples received after 4:00PM will be considered as received the next business day

Project Name/#: ORTEGA PARK / 18-06506
Site: 604 E Ortega St, Santa Barbara, CA

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPH by EPA 8015M	PAH by EPA 8270	Title 22 - EPA 6010B Metals	EPA Mercury - 7471A	VOC by EPA 8260B	PCBs by EPA 8082	Hold (4/17/19)	STLC/TCLP Pb	Total Thallium		Special Instructions:
1904166-19	4-16-19/1045	S	1	HP5-5	X	X	X	X							HOLD
20	/1050			HP5-10	X	X	X	X							
21	/1150			RB11-2	X	X	X	X							
22	/1150			RB11-4							X		▲		
23	/1220			HP3-5	X	X	X	X							
24	/1225			HP3-10	X	X	X	X				▲			
25	/1435			HP2-5	X	X	X	X							
26	/1440			HP2-10	X	X	X	X							
27	/1450			HP1-5	X	X	X	X	X						
28	/1455			HP1-10	X	X	X	X							
29	/1510			RB13-2	X	X	X	X							
30	/1510	↓	↓	RB13-4							X				↓

Report MDL

Relinquished By:	Nico Navarro	Date: 4.16.19	Time: 1915
Received By:		Date: 4/16/19	Time: 1915
Relinquished By:		Date: 4/16/19	Time: 1912
Received By:	OEC FRIDGE	Date: 4/16/19	Time: 1912
Relinquished By:	OEC	Date: 4/17/19	Time: 0755
Received By:		Date: 4/17/19	Time: 0755

Matrix Key:**
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Comments/PO#:
* Including oxygenates
X Requested 4/17/19 CW

Oilfield Environmental and Compliance

307 Roemer Way Suite 300, Santa Maria, CA 93454
Phone: (805) 922-4772 Fax: (805) 925-3376 www.oecusa.com

101 Adkisson Way, Taft, CA 93268
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Page 4 of 4

Company: RINCON CONSULTANTS
Address: 180 N. ASHWOOD AVE
City/State/ZIP: VENTURA, CA 93003
Phone: 805-223-5066 Fax: —— E-mail: nnavarro@rinconconsultants.com
Report To: NICO NAVARRO Sampler: NICO NAVARRO
Report Format(s): FAX- ☐ PDF (std)- ☒ Coit/LUFT EDF- ☐ EDD- ☐
Turnaround Time: 10 Days- ☐ 5 Days (std)- ☒ 3 Days- ☐ 2 Days- ☐ 1 Day- ☐ ASAP- ☐
NOTE: Samples received after 4:00PM will be considered as received the next business day

Project Name/#: ORTEGA PARK / 18-06506
Site: 604 E Ortega st, Santa Barbara, CA

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPH by EPA 8015M	PAH by EPA 8270	Title 22 Metals - EPA 6010B	Mercury EPA 7471A	VOCs by EPA 8260B	PCBs by EPA 8082	Hold (4/17/19)	Total Pb	STLC/TCLP Pb	Special Instructions:
1901901	4.16.19/1525	S	1	RB8-2	X	X	X	X					▲	HOLD
32	/1525			RB8-4		▲					X	▲		
33	/1518			RB12-1	X	X	X	X	X	X			▲	

Report MDL

Relinquished By:	Nico Navarro	Date: 4.16.19	Time: 1715
Received By:		Date: 4/16/19	Time: 1715
Relinquished By:		Date: 4/16/19	Time: 1912
Received By:	OEC FRIDGE	Date: 4/16/19	Time: 1912
Relinquished By:	OEC FRIDGE	Date: 4/17/19	Time: 0755
Received By:		Date: 4/17/19	Time: 0755

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Comments/PO#:
* Including oxygenates
X Requested 4/17/19 (CW)

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101 Adkisson Way, Taft, CA 93268
Phone: (661) 762-9143

CHAIN OF CUSTODY

Page 1 of 4

Company: Rincon Consultants
Address: 180 N. Ashwood Ave
City/State/ZIP: Ventura, CA 93003
Phone: 805.223.5066 Fax: —— E-mail: nnavarro@rinconconsultants.com
Report To: Nico Navarro Sampler: Nico Navarro
Report Format(s): FAX- ☐ PDF (std)- ☒ Colt/LUFT EDF- ☐ EDD- ☐
Turnaround Time: 10 Days- ☐ 5 Days (std)- ☒ 3 Days- ☐ 2 Days- ☐ 1 Day- ☐ ASAP- ☐
NOTE: Samples received after 4:00PM will be considered as received the next business day

Project Name/#: Ortega Park / 18-06506
Site: 604 E Ortega St, Santa Barbara, CA

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPH by EPA 8015M	PAH by EPA 8270	Title 22 – EPA 6010B metals	Mercury EPA 7471A	VOCs* by EPA 8260B	PCBs by EPA 8082	Hold (4/17/19)	Total As, Ba, Cr	STLC Cr	TCLP Pb
1901916-01	4.16.19/830	S	1	RB1-2	X	X	X	X						
02	/ 830			RB1-4							X			
03	/ 900			RB2-2	X	X	X	X						
04	/ 900			RB2-4							X			
05	/ 910			RB3-2		▲					X			
06	/ 910			RB3-4	X	X	X	X	X	X				
07	/ 925			RB7-2	▲	▲					X	▲		▲
08	/ 925			RB7-4	X	X	X	X	X	X			▲	
09	/ 945			RB4-2	▲						X			
10	/ 945			RB4-4	X	X	X	X	X	X				
11	/ 950			RB6-2	▲	▲			▲		X			
12	/ 950			RB6-4	X	X	X	X	X					

Special Instructions:
Report MDL
▲ added 4.30.19 amz
▲ added per client 5/23/19 MWS
HOLD

Relinquished By:	Nico Navarro	Date: 4.16.19	Time: 17:15
Received By:		Date: 4/16/19	Time: 1715
Relinquished By:		Date: 4/16/19	Time: 1912
Received By:	OEC FRIDGE	Date: 4/16/19	Time: 1912
Relinquished By:	OEC FRIDGE	Date: 4/17/19	Time: 0755
Received By:		Date: 4/17/19	Time: 0755

Matrix Key**:
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WW = waste water

Comments/PO#:
* Including oxygenates
X Requested 4/17/19 (MW)

Rev. 09/23/2014

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101 Adkisson Way, Taft, CA 93268
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CHAIN OF CUSTODY

Page 1 of 4

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Project Name/#: ORTEGA PARK / 18-06506
Site:

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPH by EPA 8015M	PAH by EPA 8270	Title 22 - EPA 6010B metals	EPA Mercury 7471A	VOCs by EPA 8260B	PCBs by EPA 8082	STLC 17 LUFT Pb	TOTAL Zn	STLC Zn		Special Instructions
1901966 01	4.16.19/830	S		RB1-2											HOLD
02	/ 830			RB1-4											
03	/ 900			RB2-2											
04	/ 900			RB2-4											
05	/ 910			RB3-2											
06	/ 910			RB3-4											
07	/ 925			RB7-2											
08	/ 925			RB7-4							▲				
09	/ 945			RB4-2											
10	/ 945			RB4-4											
11	/ 950			RB6-2								▲			
12	/ 950			RB6-4							▲		▲		

Relinquished By: Nico Navarro Date: 4.16.19 Time: 17:15
Received By: [signature] Date: 4/16/19 Time: 1715
Relinquished By: [signature] Date: 4/16/19 Time: 1912
Received By: OEC FRIDGE Date: 4/16/19 Time: 1912
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Comments/PO#:

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Project Name/#: ORTEGA PARK / 18-06506
Site: 604 E Ortega St, Santa Barbara, CA

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPH by EPA 8015M	PAH by EPA 8270	Title 22 Metals EPA 6010B	Mercury by 7471A	VOC by EPA 8260B	PCBs by EPA 8082	Hold (4/17/19)	TOTAL CR	STLC / TCLP CR	TOTAL PB	Special Instructions:
1901900 13	4.16.19/1000	S	1	RB5-2		▲					X	▲		▲	▲HOLD
14	/1000			RB5-4	X	X	X	X	X				▲		
15	/1020			RB9-2	▲						X			▲	
16	/1020			RB9-4	X	X	X	X	X	X					
17	/1030			RB10-2	X	X	X	X	X						
18	/1030			RB10-4	▲						X			▲	▲'
19	/1345			HP4-5	X	X	X	X							
20	/1350			HP4-10	X	X	X	X	X						
21	/1410			RB15-2	X	X	X	X							
22	/1415			RB15-4							X				
23	/1420	↓	↓	RB14-2	X	X	X	X							
24	/1420	↓	↓	RB14-4							X				

Special Instructions: Report MDL

Relinquished By: [signature] Date: 4/16/19 Time: 17:15
Received By: [signature] Date: 4/16/19 Time: 1715
Relinquished By: [signature] Date: 4/16/19 Time: 1912
Received By: OEC FRIDGE Date: 4/16/19 Time: 1912
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Received By: [signature] Date: 4/17/19 Time: 0755

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Comments/PO#:
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X Requested 4/17/19 ☺

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Site:

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPH by EPA 8015M	PAH by EPA 8270	Title 22 Metals - EPA 6010B	Mercury by 7471A	VOCs by EPA 8260B	PCBs by EPA 8082	STLC TCLP Pb	TOTAL Hg	STLC Hg	TOTAL Thallium	Special Instructions:
1901904 13	4.16.19/1000	S	1	RB5-2								▲			HOLD
14	/1000			RB5-4							▲*		▲*		
15	/1020			RB9-2										▲	
16	/1020			RB9-4							▲				
17	/1030			RB10-2							▲				
18	/1030			RB10-4											
19	/1345			HP4-5											
20	/1350			HP4-10							▲				
21	/1410			RB15-2											
22	/1415			RB15-4											
23	/1420			RB14-2											↓
24	/1420			RB14-4										▲	

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Received By:	Date: 4/16/19	Time: 1715
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Received By: OEC FRIDGE	Date: 4/16/19	Time: 1912
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Comments/PO#:
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Project Name/#: ORTEGA PARK / 18-06506
Site: 604 E Ortega St, Santa Barbara, CA

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPH by EPA 8015M	PAH by EPA 8270	Title 22 Metals - EPA 6010B	Mercury - EPA 7471A	VOC* by EPA 8260B	PCBs by EPA 8082	Hold (4/17/19)	STLC 17 LLP 8s	Total Thallium		Special Instructions:
19041601 25	4.16.19/1045	S	1	HP5-5	X	X	X	X							HOLD
26	/1050			HP5-10	X	X	X	X							
27	/1150			RB11-2	X	X	X	X							
28	/1150			RB11-4							X		▲		
29	/1220			HP3-5	X	X	X	X							
30	/1225			HP3-10	X	X	X	X				▲			
31	/1435			HP2-5	X	X	X	X							
32	/1440			HP2-10	X	X	X	X							
33	/1450			HP1-5	X	X	X	X	X						
34	/1455			HP1-10	X	X	X	X							
35	/1510			RB13-2	X	X	X	X							
36	/1510	↓	↓	RB13-4							X				↓

Relinquished By:	Nico Navarro	Date: 4.16.19	Time: 1915
Received By:		Date: 4/16/19	Time: 1915
Relinquished By:		Date: 4/16/19	Time: 1912
Received By:	OEC FRIDGE	Date: 4/16/19	Time: 1912
Relinquished By:	OEC	Date: 4/17/19	Time: 0755
Received By:		Date: 4/17/19	Time: 0755

Matrix Key**:
A = air / vapor
AQ = aqueous
DW = drinking water
F = filter
GW = ground water
P = product / oil
PW = product water
S = solid / sediment
SW = surface water
WP = wipe
WW = waste water

Comments/PO#:
* Including organates
X Requested 4/17/19 ☺

Oilfield Environmental and Compliance

307 Roemer Way Suite 300, Santa Maria, CA 93454
Phone: (805) 922-4772 Fax: (805) 925-3376 www.oecusa.com

101 Adkisson Way, Taft, CA 93268
Phone: (661) 762-9143

CHAIN OF CUSTODY

Page 4 of 4

Company: RINCON CONSULTANTS
Address: 180 N. ASHWOOD AVE
City/State/ZIP: VENTURA, CA 93003
Phone: 805-223.5066 Fax: —— E-mail: nnavarro@rinconconsultants.com
Report To: NICO NAVARRO Sampler: NICO NAVARRO
Report Format(s): FAX- ☐ PDF (std)- ☒ Coit/LUFT EDF- ☐ EDD- ☐
Turnaround Time: 10 Days- ☐ 5 Days (std)- ☒ 3 Days- ☐ 2 Days- ☐ 1 Day- ☐ ASAP- ☐
NOTE: Samples received after 4:00PM will be considered as received the next business day

Project Name/#: ORTEGA PARK / 18-06506
Site: 604 E Ortega st, Santa Barbara, CA

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPH by EPA 8015M	PAH by EPA 8270	Title 22 Metals EPA 6010B	Mercury EPA 7471A	VOCs by EPA 8260B	PCBs by EPA 8082	Hold 4/17/19	TOTAL Pb	STLC/TCLP Pb		Special Instructions:
1904100-32	4.16.19/1525	S	1	RB8-2	X	X	X	X					▲		HOLD
33	/1525			RB8-4		▲					X	▲			
34	/1518	↓	↓	RB12-1	X	X	X	X	X	X			▲		
HOLD 4/17/19	↓ NN														↓

Report MDL

Relinquished By: Nico Navarro Date: 4.16.19 Time: 1715
Received By: [signature] Date: 4/16/19 Time: 1715
Relinquished By: [signature] Date: 4/16/19 Time: 1912
Received By: OEC FRIDGE Date: 4/16/19 Time: 1912
Relinquished By: OEC FRIDGE Date: 4/17/19 Time: 0755
Received By: [signature] Date: 4/17/19 Time: 0755

Matrix Key:**
A = air / vapor
AQ = aqueous
DW = drinking water
F = filter
GW = ground water
P = product / oil
PW = product water
S = solid / sediment
SW = surface water
WP = wipe
WW = waste water

Comments/PO#:
* Including oxygenates
X Requested 4/17/19 (CW)

Rev. 09/23/2014

Oilfield Environmental & Compliance, Inc.

Nico Navarro
Rincon Consultants
180 N. Ashwood Ave.
Ventura, CA 93003

Report: April 29, 2019 16:47 Work Order: 1901967

Project: Ortega Park
Number: 18-06506

Dear Client:

Enclosed is an analytical report for the above referenced project. The samples included in this report were received on April 17, 2019 07:55 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,



Alyssa Zuniga, Project Manager

azuniga@oecusa.com

Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

SAMPLE SUMMARY

Sample ID	Laboratory ID	Client Matrix	Lab Matrix	Date Sampled	Date Received
HP5-GW	1901967-01	Water	Water	04/16/19 11:20	04/17/19 07:55
HP3-GW	1901967-02	Water	Water	04/16/19 14:30	04/17/19 07:55
HP4-GW	1901967-03	Water	Water	04/16/19 14:45	04/17/19 07:55
HP2-GW	1901967-04	Water	Water	04/16/19 15:35	04/17/19 07:55

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

ANALYTICAL REPORT FOR SAMPLES
1901967-01 (Water)
HP5-GW

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Semi-Volatile Organic TPH by GC/FID										
TPH Diesel (C13-C22)	**0.081**	0.046	0.056	mg/L	1	B9D0649	04/23/19	04/23/19	EPA 8015M	
TPH Motor Oil (C23-C40)	**0.17**	0.056	0.11	"	"	"	"	"	"	
Surrogate: o-Terphenyl			*99.5 %*	*(42 - 153)*		"	"	"	"	
Volatile Organic Compounds by GC/MS										
t-Amyl Methyl Ether	ND	0.25	0.50	ug/L	1	B9D0491	04/17/19	04/17/19	EPA 8260B/LUFT	
Benzene	**1.0**	0.25	0.50	"	"	"	"	"	"	
Bromobenzene	ND	0.25	0.50	"	"	"	"	"	"	
Bromochloromethane	ND	0.25	0.50	"	"	"	"	"	"	
Bromodichloromethane	ND	0.25	0.50	"	"	"	"	"	"	
Bromoform	ND	0.25	0.50	"	"	"	"	"	"	
Bromomethane	ND	0.25	0.50	"	"	"	"	"	"	
t-Butyl alcohol	ND	2.5	10	"	"	"	"	"	"	
n-Butylbenzene	ND	0.25	0.50	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.25	0.50	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.25	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.25	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	0.25	0.50	"	"	"	"	"	"	
Chloroethane	ND	0.25	0.50	"	"	"	"	"	"	
Chloroform	ND	0.25	0.50	"	"	"	"	"	"	
Chloromethane	ND	0.25	0.50	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.25	0.50	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.25	0.50	"	"	"	"	"	"	
Dibromochloromethane	ND	0.25	0.50	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.75	1.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.25	0.50	"	"	"	"	"	"	
Dibromomethane	ND	0.25	0.50	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.25	0.50	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.25	0.50	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.25	0.50	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.26	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.25	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.25	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.25	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.25	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.25	0.50	"	"	"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

1901967-01 (Water)

HP5-GW

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS (Continued)										
1,2-Dichloropropane	ND	0.25	0.50	ug/L	1	B9D0491	04/17/19	04/17/19	EPA 8260B/LUFT	
1,3-Dichloropropane	ND	0.25	0.50	"	"	"	"	"	"	
2,2-Dichloropropane	ND	0.25	0.50	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.25	0.50	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.25	0.50	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.25	0.50	"	"	"	"	"	"	
Diisopropyl Ether	ND	0.25	0.50	"	"	"	"	"	"	
Ethanol	ND	250	500	"	"	"	"	"	"	
Ethyl t-Butyl Ether	ND	0.25	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.25	0.50	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.25	0.50	"	"	"	"	"	"	
4-Isopropyl Toluene	ND	0.25	0.50	"	"	"	"	"	"	
Isopropylbenzene	ND	0.25	0.50	"	"	"	"	"	"	
Methylene chloride	ND	0.35	0.50	"	"	"	"	"	"	
Methyl-t-butyl ether	ND	0.25	0.50	"	"	"	"	"	"	
Naphthalene	ND	0.25	0.50	"	"	"	"	"	"	
n-Propylbenzene	ND	0.25	0.50	"	"	"	"	"	"	
Styrene	ND	0.25	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.25	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.25	0.50	"	"	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.25	0.50	"	"	"	"	"	"	
Toluene	**0.36**	0.25	0.50	"	"	"	"	"	"	**J**
1,2,3-Trichlorobenzene	ND	0.25	0.50	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.25	0.50	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.25	0.50	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.25	0.50	"	"	"	"	"	"	
Trichloroethene (TCE)	ND	0.25	0.50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.25	0.50	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.25	0.50	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.25	0.50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.25	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.25	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.27	0.50	"	"	"	"	"	"	
TPH Gasoline (C4-C12)	ND	20	50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane			*105 %*	*(83 - 119)*		"	"	"	"	
Surrogate: Toluene-d8			*99.9 %*	*(69 - 120)*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene			*111 %*	*(79 - 125)*		"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

1901967-01 (Water)

HP5-GW

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

1901967-02 (Water)

HP3-GW

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Semi-Volatile Organic TPH by GC/FID										
TPH Diesel (C13-C22)	**1.3**	0.047	0.058	mg/L	1	B9D0649	04/23/19	04/23/19	EPA 8015M	
TPH Motor Oil (C23-C40)	**2.0**	0.058	0.12	"	"	"	"	"	"	
Surrogate: o-Terphenyl			*109 %*	*(42 - 153)*		"	"	"	"	
Volatile Organic Compounds by GC/MS										**R-05**
t-Amyl Methyl Ether	ND	2.5	5.0	ug/L	10	B9D0491	04/17/19	04/17/19	EPA 8260B/LUFT	
Benzene	ND	2.5	5.0	"	"	"	"	"	"	
Bromobenzene	ND	2.5	5.0	"	"	"	"	"	"	
Bromochloromethane	ND	2.5	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	2.5	5.0	"	"	"	"	"	"	
Bromoform	ND	2.5	5.0	"	"	"	"	"	"	
Bromomethane	ND	2.5	5.0	"	"	"	"	"	"	
t-Butyl alcohol	**26**	25	100	"	"	"	"	"	"	**J**
n-Butylbenzene	ND	2.5	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	2.5	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	2.5	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	2.5	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	2.5	5.0	"	"	"	"	"	"	
Chloroethane	ND	2.5	5.0	"	"	"	"	"	"	
Chloroform	ND	2.5	5.0	"	"	"	"	"	"	
Chloromethane	ND	2.5	5.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	2.5	5.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	2.5	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	2.5	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	7.5	10	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	2.5	5.0	"	"	"	"	"	"	
Dibromomethane	ND	2.5	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.5	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.5	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.5	5.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	2.6	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.5	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.5	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.5	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	2.5	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.5	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.5	5.0	"	"	"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

1901967-02 (Water)
HP3-GW

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS (Continued)										R-05
1,3-Dichloropropane	ND	2.5	5.0	ug/L	10	B9D0491	04/17/19	04/17/19	EPA 8260B/LUFT	
2,2-Dichloropropane	ND	2.5	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	2.5	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	2.5	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	2.5	5.0	"	"	"	"	"	"	
Diisopropyl Ether	ND	2.5	5.0	"	"	"	"	"	"	
Ethanol	ND	2500	5000	"	"	"	"	"	"	
Ethyl t-Butyl Ether	ND	2.5	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	2.5	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	2.5	5.0	"	"	"	"	"	"	
4-Isopropyl Toluene	ND	2.5	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	2.5	5.0	"	"	"	"	"	"	
Methylene chloride	ND	3.5	5.0	"	"	"	"	"	"	
Methyl-t-butyl ether	ND	2.5	5.0	"	"	"	"	"	"	
Naphthalene	ND	2.5	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	2.5	5.0	"	"	"	"	"	"	
Styrene	ND	2.5	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	2.5	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.5	5.0	"	"	"	"	"	"	
Tetrachloroethene (PCE)	ND	2.5	5.0	"	"	"	"	"	"	
Toluene	ND	2.5	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	2.5	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	2.5	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.5	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.5	5.0	"	"	"	"	"	"	
Trichloroethene (TCE)	ND	2.5	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	2.5	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	2.5	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	2.5	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	2.5	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	2.5	5.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.7	5.0	"	"	"	"	"	"	
TPH Gasoline (C4-C12)	ND	200	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane			*105 %*	*(83 - 119)*		"	"	"	"	
Surrogate: Toluene-d8			*94.3 %*	*(69 - 120)*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene			*112 %*	*(79 - 125)*		"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

1901967-03 (Water)

HP4-GW

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Semi-Volatile Organic TPH by GC/FID										
TPH Diesel (C13-C22)	0.17	0.047	0.057	mg/L	1	B9D0649	04/23/19	04/23/19	EPA 8015M	
TPH Motor Oil (C23-C40)	0.52	0.057	0.11	"	"	"	"	"	"	
Surrogate: o-Terphenyl			*113 %*	*(42 - 153)*		"	"	"	"	
Volatile Organic Compounds by GC/MS										R-05
t-Amyl Methyl Ether	ND	2.5	5.0	ug/L	10	B9D0491	04/17/19	04/17/19	EPA 8260B/LUFT	
Benzene	ND	2.5	5.0	"	"	"	"	"	"	
Bromobenzene	ND	2.5	5.0	"	"	"	"	"	"	
Bromochloromethane	ND	2.5	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	2.5	5.0	"	"	"	"	"	"	
Bromoform	ND	2.5	5.0	"	"	"	"	"	"	
Bromomethane	ND	2.5	5.0	"	"	"	"	"	"	
t-Butyl alcohol	ND	25	100	"	"	"	"	"	"	
n-Butylbenzene	ND	2.5	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	2.5	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	2.5	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	2.5	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	2.5	5.0	"	"	"	"	"	"	
Chloroethane	ND	2.5	5.0	"	"	"	"	"	"	
Chloroform	ND	2.5	5.0	"	"	"	"	"	"	
Chloromethane	ND	2.5	5.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	2.5	5.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	2.5	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	2.5	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	7.5	10	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	2.5	5.0	"	"	"	"	"	"	
Dibromomethane	ND	2.5	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.5	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.5	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.5	5.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	2.6	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	2.5	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	2.5	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	2.5	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	2.5	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	2.5	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	2.5	5.0	"	"	"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

1901967-03 (Water)
HP4-GW

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS (Continued)										R-05
1,3-Dichloropropane	ND	2.5	5.0	ug/L	10	B9D0491	04/17/19	04/17/19	EPA 8260B/LUFT	
2,2-Dichloropropane	ND	2.5	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	2.5	5.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	2.5	5.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	2.5	5.0	"	"	"	"	"	"	
Diisopropyl Ether	ND	2.5	5.0	"	"	"	"	"	"	
Ethanol	ND	2500	5000	"	"	"	"	"	"	
Ethyl t-Butyl Ether	ND	2.5	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	2.5	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	2.5	5.0	"	"	"	"	"	"	
4-Isopropyl Toluene	ND	2.5	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	2.5	5.0	"	"	"	"	"	"	
Methylene chloride	ND	3.5	5.0	"	"	"	"	"	"	
Methyl-t-butyl ether	ND	2.5	5.0	"	"	"	"	"	"	
Naphthalene	ND	2.5	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	2.5	5.0	"	"	"	"	"	"	
Styrene	ND	2.5	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	2.5	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.5	5.0	"	"	"	"	"	"	
Tetrachloroethene (PCE)	ND	2.5	5.0	"	"	"	"	"	"	
Toluene	ND	2.5	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	2.5	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	2.5	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.5	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.5	5.0	"	"	"	"	"	"	
Trichloroethene (TCE)	ND	2.5	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	2.5	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	2.5	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	2.5	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	2.5	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	2.5	5.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.7	5.0	"	"	"	"	"	"	
TPH Gasoline (C4-C12)	ND	200	500	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane			*105 %*	*(83 - 119)*		"	"	"	"	
Surrogate: Toluene-d8			*93.8 %*	*(69 - 120)*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene			*110 %*	*(79 - 125)*		"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

1901967-04 (Water)

HP2-GW

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Semi-Volatile Organic TPH by GC/FID										
TPH Diesel (C13-C22)	ND	0.044	0.054	mg/L	1	B9D0649	04/23/19	04/23/19	EPA 8015M	
TPH Motor Oil (C23-C40)	**0.057**	0.054	0.11	"	"	"	"	"	"	J
Surrogate: o-Terphenyl			*103 %*	*(42 - 153)*		"	"	"	"	
Volatile Organic Compounds by GC/MS										
t-Amyl Methyl Ether	ND	0.25	0.50	ug/L	1	B9D0784	04/26/19	04/26/19	EPA 8260B/LUFT	
Benzene	ND	0.25	0.50	"	"	"	"	"	"	
Bromobenzene	ND	0.25	0.50	"	"	"	"	"	"	
Bromochloromethane	ND	0.25	0.50	"	"	"	"	"	"	
Bromodichloromethane	ND	0.25	0.50	"	"	"	"	"	"	
Bromoform	ND	0.25	0.50	"	"	"	"	"	"	
Bromomethane	ND	0.25	0.50	"	"	"	"	"	"	
t-Butyl alcohol	ND	2.5	10	"	"	"	"	"	"	
n-Butylbenzene	ND	0.25	0.50	"	"	"	"	"	"	
sec-Butylbenzene	ND	0.25	0.50	"	"	"	"	"	"	
tert-Butylbenzene	ND	0.25	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.25	0.50	"	"	"	"	"	"	
Chlorobenzene	ND	0.25	0.50	"	"	"	"	"	"	
Chloroethane	ND	0.25	0.50	"	"	"	"	"	"	
Chloroform	ND	0.25	0.50	"	"	"	"	"	"	
Chloromethane	ND	0.25	0.50	"	"	"	"	"	"	
2-Chlorotoluene	ND	0.25	0.50	"	"	"	"	"	"	
4-Chlorotoluene	ND	0.25	0.50	"	"	"	"	"	"	
Dibromochloromethane	ND	0.25	0.50	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	0.75	1.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.25	0.50	"	"	"	"	"	"	
Dibromomethane	ND	0.25	0.50	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.25	0.50	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.25	0.50	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.25	0.50	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.26	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.25	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.25	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.25	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.25	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.25	0.50	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.25	0.50	"	"	"	"	"	"	

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180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

1901967-04 (Water)
HP2-GW

Analyte	Result	MDL	RL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organic Compounds by GC/MS (Continued)										
1,3-Dichloropropane	ND	0.25	0.50	ug/L	1	B9D0784	04/26/19	04/26/19	EPA 8260B/LUFT	
2,2-Dichloropropane	ND	0.25	0.50	"	"	"	"	"	"	
1,1-Dichloropropene	ND	0.25	0.50	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.25	0.50	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.25	0.50	"	"	"	"	"	"	
Diisopropyl Ether	ND	0.25	0.50	"	"	"	"	"	"	
Ethanol	ND	250	500	"	"	"	"	"	"	
Ethyl t-Butyl Ether	ND	0.25	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.25	0.50	"	"	"	"	"	"	
Hexachlorobutadiene	ND	0.25	0.50	"	"	"	"	"	"	
4-Isopropyl Toluene	ND	0.25	0.50	"	"	"	"	"	"	
Isopropylbenzene	ND	0.25	0.50	"	"	"	"	"	"	
Methylene chloride	ND	0.35	0.50	"	"	"	"	"	"	
Methyl-t-butyl ether	ND	0.25	0.50	"	"	"	"	"	"	
Naphthalene	ND	0.25	0.50	"	"	"	"	"	"	
n-Propylbenzene	ND	0.25	0.50	"	"	"	"	"	"	
Styrene	ND	0.25	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.25	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.25	0.50	"	"	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.25	0.50	"	"	"	"	"	"	
Toluene	ND	0.25	0.50	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	0.25	0.50	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.25	0.50	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.25	0.50	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.25	0.50	"	"	"	"	"	"	
Trichloroethene (TCE)	**0.31**	0.25	0.50	"	"	"	"	"	"	J
Trichlorofluoromethane	ND	0.25	0.50	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	0.25	0.50	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.25	0.50	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.25	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.25	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.27	0.50	"	"	"	"	"	"	
TPH Gasoline (C4-C12)	ND	20	50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane			*104 %*	*(83 - 119)*		"	"	"	"	
Surrogate: Toluene-d8			*108 %*	*(69 - 120)*		"	"	"	"	
Surrogate: 4-Bromofluorobenzene			*106 %*	*(79 - 125)*		"	"	"	"	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506	**1901967**
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

Semi-Volatile Organic TPH by GC/FID - Quality Control

Analyte	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0649 - EPA 8015M Preparation: EPA 3510C Leachate 04/23/19 09:46											
Blank (B9D0649-BLK1)				Analyzed: 04/23/19 18:10							
TPH Diesel (C13-C22)	ND	0.041	0.050	mg/L							
TPH Motor Oil (C23-C40)	ND	0.050	0.10	"							
Surrogate: o-Terphenyl			*0.102*	*"*	*0.100*		*102*	*42-153*			
Blank (B9D0649-BLK2)				Analyzed: 04/23/19 19:07							
TPH Diesel (C13-C22)	ND	0.041	0.050	mg/L							
TPH Motor Oil (C23-C40)	ND	0.050	0.10	"							
Surrogate: o-Terphenyl			*0.104*	*"*	*0.100*		*104*	*42-153*			
LCS (B9D0649-BS1)				Analyzed: 04/23/19 18:39							
TPH Diesel (C13-C22)	0.731	0.041	0.050	mg/L	1.00		73.1	24-105			
TPH Motor Oil (C23-C40)	1.11	0.050	0.10	"	1.00		111	70-130			
Surrogate: o-Terphenyl			*0.105*	*"*	*0.100*		*105*	*42-153*			
LCS Dup (B9D0649-BSD1)				Analyzed: 04/23/19 18:53							
TPH Diesel (C13-C22)	0.843	0.041	0.050	mg/L	1.00		84.3	24-105	14.3	20	
TPH Motor Oil (C23-C40)	1.13	0.050	0.10	"	1.00		113	70-130	1.74	20	
Surrogate: o-Terphenyl			*0.110*	*"*	*0.100*		*110*	*42-153*			

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180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0491 - EPA 8260B/LUFT Preparation: EPA 5030B VOCGCMS 04/17/19 10:29											
Blank (B9D0491-BLK1) Analyzed: 04/17/19 13:00											
t-Amyl Methyl Ether	ND	0.25	0.50	ug/L							
Benzene	ND	0.25	0.50	"							
Bromobenzene	ND	0.25	0.50	"							
Bromochloromethane	ND	0.25	0.50	"							
Bromodichloromethane	ND	0.25	0.50	"							
Bromoform	ND	0.25	0.50	"							
Bromomethane	ND	0.25	0.50	"							
t-Butyl alcohol	ND	2.5	10	"							
n-Butylbenzene	ND	0.25	0.50	"							
sec-Butylbenzene	ND	0.25	0.50	"							
tert-Butylbenzene	ND	0.25	0.50	"							
Carbon tetrachloride	ND	0.25	0.50	"							
Chlorobenzene	ND	0.25	0.50	"							
Chloroethane	ND	0.25	0.50	"							
Chloroform	ND	0.25	0.50	"							
Chloromethane	ND	0.25	0.50	"							
2-Chlorotoluene	ND	0.25	0.50	"							
4-Chlorotoluene	ND	0.25	0.50	"							
Dibromochloromethane	ND	0.25	0.50	"							
1,2-Dibromo-3-chloropropane	ND	0.75	1.0	"							
1,2-Dibromoethane (EDB)	ND	0.25	0.50	"							
Dibromomethane	ND	0.25	0.50	"							
1,2-Dichlorobenzene	ND	0.25	0.50	"							
1,3-Dichlorobenzene	ND	0.25	0.50	"							
1,4-Dichlorobenzene	ND	0.25	0.50	"							
Dichlorodifluoromethane	ND	0.26	0.50	"							
1,1-Dichloroethane	ND	0.25	0.50	"							
1,2-Dichloroethane	ND	0.25	0.50	"							
1,1-Dichloroethene	ND	0.25	0.50	"							
cis-1,2-Dichloroethene	ND	0.25	0.50	"							
trans-1,2-Dichloroethene	ND	0.25	0.50	"							
1,2-Dichloropropane	ND	0.25	0.50	"							
1,3-Dichloropropane	ND	0.25	0.50	"							
2,2-Dichloropropane	ND	0.25	0.50	"							
1,1-Dichloropropene	ND	0.25	0.50	"							
cis-1,3-Dichloropropene	ND	0.25	0.50	"							
trans-1,3-Dichloropropene	ND	0.25	0.50	"							
Diisopropyl Ether	ND	0.25	0.50	"							
Ethanol	ND	250	500	"							
Ethyl t-Butyl Ether	ND	0.25	0.50	"							
Ethylbenzene	ND	0.25	0.50	"							
Hexachlorobutadiene	ND	0.25	0.50	"							

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180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0491 - EPA 8260B/LUFT Preparation: EPA 5030B VOCGCMS 04/17/19 10:29											
Blank (B9D0491-BLK1) Analyzed: 04/17/19 13:00											
4-Isopropyl Toluene	ND	0.25	0.50	ug/L							
Isopropylbenzene	ND	0.25	0.50	"							
Methylene chloride	ND	0.35	0.50	"							
Methyl-t-butyl ether	ND	0.25	0.50	"							
Naphthalene	ND	0.25	0.50	"							
n-Propylbenzene	ND	0.25	0.50	"							
Styrene	ND	0.25	0.50	"							
1,1,1,2-Tetrachloroethane	ND	0.25	0.50	"							
1,1,2,2-Tetrachloroethane	ND	0.25	0.50	"							
Tetrachloroethene (PCE)	ND	0.25	0.50	"							
Toluene	ND	0.25	0.50	"							
1,2,3-Trichlorobenzene	ND	0.25	0.50	"							
1,2,4-Trichlorobenzene	ND	0.25	0.50	"							
1,1,1-Trichloroethane	ND	0.25	0.50	"							
1,1,2-Trichloroethane	ND	0.25	0.50	"							
Trichloroethene (TCE)	ND	0.25	0.50	"							
Trichlorofluoromethane	ND	0.25	0.50	"							
1,2,3-Trichloropropane	ND	0.25	0.50	"							
1,2,4-Trimethylbenzene	ND	0.25	0.50	"							
1,3,5-Trimethylbenzene	ND	0.25	0.50	"							
Vinyl chloride	ND	0.25	0.50	"							
Xylenes (total)	ND	0.27	0.50	"							
TPH Gasoline (C4-C12)	ND	20	50	"							
Surrogate: Dibromofluoromethane			*13.1*	*"*	*12.5*		*105*	*83-119*			
Surrogate: Toluene-d8			*10.5*	*"*	*12.5*		*84.1*	*69-120*			
Surrogate: 4-Bromofluorobenzene			*13.8*	*"*	*12.5*		*110*	*79-125*			
LCS (B9D0491-BS1) Analyzed: 04/17/19 10:46											
Benzene	9.66	0.25	0.50	ug/L	10.0		96.6	79-132			
Chlorobenzene	9.74	0.25	0.50	"	10.0		97.4	83-130			
1,1-Dichloroethene	10.5	0.25	0.50	"	10.0		105	62-147			
Toluene	8.39	0.25	0.50	"	10.0		83.9	71-133			
Trichloroethene (TCE)	10.6	0.25	0.50	"	10.0		106	79-140			
Surrogate: Dibromofluoromethane			*12.9*	*"*	*12.5*		*103*	*83-119*			
Surrogate: Toluene-d8			*10.8*	*"*	*12.5*		*86.5*	*69-120*			
Surrogate: 4-Bromofluorobenzene			*14.0*	*"*	*12.5*		*112*	*79-125*			

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180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0491 - EPA 8260B/LUFT Preparation: EPA 5030B VOCGCMS 04/17/19 10:29											
LCS (B9D0491-BS2)				Analyzed: 04/17/19 11:40							
TPH Gasoline (C4-C12)	337	20	50	ug/L	500		67.4	56-132			
Surrogate: Dibromofluoromethane			*13.0*	"	*12.5*		*104*	*83-119*			
Surrogate: Toluene-d8			*12.4*	"	*12.5*		*99.6*	*69-120*			
Surrogate: 4-Bromofluorobenzene			*14.0*	"	*12.5*		*112*	*79-125*			
LCS Dup (B9D0491-BSD1)				Analyzed: 04/17/19 11:13							
Benzene	9.66	0.25	0.50	ug/L	10.0		96.6	79-132	0.00	20	
Chlorobenzene	9.70	0.25	0.50	"	10.0		97.0	83-130	0.412	20	
1,1-Dichloroethene	10.1	0.25	0.50	"	10.0		101	62-147	4.09	20	
Toluene	9.95	0.25	0.50	"	10.0		99.5	71-133	17.0	20	
Trichloroethene (TCE)	10.2	0.25	0.50	"	10.0		102	79-140	4.62	20	
Surrogate: Dibromofluoromethane			*13.5*	"	*12.5*		*108*	*83-119*			
Surrogate: Toluene-d8			*12.6*	"	*12.5*		*101*	*69-120*			
Surrogate: 4-Bromofluorobenzene			*13.8*	"	*12.5*		*110*	*79-125*			
LCS Dup (B9D0491-BSD2)				Analyzed: 04/17/19 12:07							
TPH Gasoline (C4-C12)	304	20	50	ug/L	500		60.9	56-132	10.2	20	
Surrogate: Dibromofluoromethane			*13.1*	"	*12.5*		*105*	*83-119*			
Surrogate: Toluene-d8			*11.1*	"	*12.5*		*89.1*	*69-120*			
Surrogate: 4-Bromofluorobenzene			*13.8*	"	*12.5*		*111*	*79-125*			
Duplicate (B9D0491-DUP1)	**Source: 1901967-01**			Analyzed: 04/17/19 16:39							
t-Amyl Methyl Ether	ND	0.25	0.50	ug/L		ND				20	
Benzene	1.07	0.25	0.50	"		1.04			2.84	20	
Bromobenzene	ND	0.25	0.50	"		ND				20	
Bromochloromethane	ND	0.25	0.50	"		ND				20	
Bromodichloromethane	ND	0.25	0.50	"		ND				20	
Bromoform	ND	0.25	0.50	"		ND				20	
Bromomethane	ND	0.25	0.50	"		ND				20	
t-Butyl alcohol	ND	2.5	10	"		ND				20	
n-Butylbenzene	ND	0.25	0.50	"		ND				20	
sec-Butylbenzene	ND	0.25	0.50	"		ND				20	
tert-Butylbenzene	ND	0.25	0.50	"		ND				20	
Carbon tetrachloride	ND	0.25	0.50	"		ND				20	
Chlorobenzene	ND	0.25	0.50	"		ND				20	
Chloroethane	ND	0.25	0.50	"		ND				20	
Chloroform	ND	0.25	0.50	"		ND				20	
Chloromethane	ND	0.25	0.50	"		ND				20	
2-Chlorotoluene	ND	0.25	0.50	"		ND				20	
4-Chlorotoluene	ND	0.25	0.50	"		ND				20	
Dibromochloromethane	ND	0.25	0.50	"		ND				20	
1,2-Dibromo-3-chloropropane	ND	0.75	1.0	"		ND				20	
1,2-Dibromoethane (EDB)	ND	0.25	0.50	"		ND				20	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0491 - EPA 8260B/LUFT Preparation: EPA 5030B VOCGCMS 04/17/19 10:29											
Duplicate (B9D0491-DUP1)	**Source: 1901967-01**		Analyzed: 04/17/19 16:39								
Dibromomethane	ND	0.25	0.50	ug/L		ND				20	
1,2-Dichlorobenzene	ND	0.25	0.50	"		ND				20	
1,3-Dichlorobenzene	ND	0.25	0.50	"		ND				20	
1,4-Dichlorobenzene	ND	0.25	0.50	"		ND				20	
Dichlorodifluoromethane	ND	0.26	0.50	"		ND				20	
1,1-Dichloroethane	ND	0.25	0.50	"		ND				20	
1,2-Dichloroethane	ND	0.25	0.50	"		ND				20	
1,1-Dichloroethene	ND	0.25	0.50	"		ND				20	
cis-1,2-Dichloroethene	ND	0.25	0.50	"		ND				20	
trans-1,2-Dichloroethene	ND	0.25	0.50	"		ND				20	
1,2-Dichloropropane	ND	0.25	0.50	"		ND				20	
1,3-Dichloropropane	ND	0.25	0.50	"		ND				20	
2,2-Dichloropropane	ND	0.25	0.50	"		ND				20	
1,1-Dichloropropene	ND	0.25	0.50	"		ND				20	
cis-1,3-Dichloropropene	ND	0.25	0.50	"		ND				20	
trans-1,3-Dichloropropene	ND	0.25	0.50	"		ND				20	
Diisopropyl Ether	ND	0.25	0.50	"		ND				20	
Ethanol	ND	250	500	"		ND				20	
Ethyl t-Butyl Ether	ND	0.25	0.50	"		ND				20	
Ethylbenzene	ND	0.25	0.50	"		ND				20	
Hexachlorobutadiene	ND	0.25	0.50	"		ND				20	
4-Isopropyl Toluene	ND	0.25	0.50	"		ND				20	
Isopropylbenzene	ND	0.25	0.50	"		ND				20	
Methylene chloride	ND	0.35	0.50	"		ND				20	
Methyl-t-butyl ether	ND	0.25	0.50	"		ND				20	
Naphthalene	ND	0.25	0.50	"		ND				20	
n-Propylbenzene	ND	0.25	0.50	"		ND				20	
Styrene	ND	0.25	0.50	"		ND				20	
1,1,1,2-Tetrachloroethane	ND	0.25	0.50	"		ND				20	
1,1,2,2-Tetrachloroethane	ND	0.25	0.50	"		ND				20	
Tetrachloroethene (PCE)	ND	0.25	0.50	"		ND				20	
Toluene	0.370	0.25	0.50	"		0.360			2.74	20	J
1,2,3-Trichlorobenzene	ND	0.25	0.50	"		ND				20	
1,2,4-Trichlorobenzene	ND	0.25	0.50	"		ND				20	
1,1,1-Trichloroethane	ND	0.25	0.50	"		ND				20	
1,1,2-Trichloroethane	ND	0.25	0.50	"		ND				20	
Trichloroethene (TCE)	ND	0.25	0.50	"		ND				20	
Trichlorofluoromethane	ND	0.25	0.50	"		ND				20	
1,2,3-Trichloropropane	ND	0.25	0.50	"		ND				20	
1,2,4-Trimethylbenzene	ND	0.25	0.50	"		ND				20	
1,3,5-Trimethylbenzene	ND	0.25	0.50	"		ND				20	
Vinyl chloride	ND	0.25	0.50	"		ND				20	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0491 - EPA 8260B/LUFT Preparation: EPA 5030B VOCGCMS 04/17/19 10:29											
Duplicate (B9D0491-DUP1)	**Source: 1901967-01**			Analyzed: 04/17/19 16:39							
Xylenes (total)	ND	0.27	0.50	ug/L		ND				20	
TPH Gasoline (C4-C12)	ND	20	50	"		ND				20	
Surrogate: Dibromofluoromethane			*13.1*	"	*12.5*		*105*	*83-119*			
Surrogate: Toluene-d8			*12.7*	"	*12.5*		*101*	*69-120*			
Surrogate: 4-Bromofluorobenzene			*14.4*	"	*12.5*		*115*	*79-125*			
Matrix Spike (B9D0491-MS1)	**Source: 1901947-02**			Analyzed: 04/17/19 20:43							
Benzene	9.56	0.25	0.50	ug/L	10.0	ND	95.6	70-141			
Chlorobenzene	9.64	0.25	0.50	"	10.0	ND	96.4	86-124			
1,1-Dichloroethene	9.86	0.25	0.50	"	10.0	ND	98.6	61-143			
Toluene	9.39	0.25	0.50	"	10.0	ND	93.9	66-135			
Trichloroethene (TCE)	9.93	0.25	0.50	"	10.0	ND	99.3	80-139			
Surrogate: Dibromofluoromethane			*13.0*	"	*12.5*		*104*	*83-119*			
Surrogate: Toluene-d8			*12.6*	"	*12.5*		*101*	*69-120*			
Surrogate: 4-Bromofluorobenzene			*14.8*	"	*12.5*		*118*	*79-125*			
Matrix Spike (B9D0491-MS2)	**Source: 1901950-03**			Analyzed: 04/17/19 21:10							
TPH Gasoline (C4-C12)	341	20	50	ug/L	500	20.2	64.2	34-149			
Surrogate: Dibromofluoromethane			*13.1*	"	*12.5*		*105*	*83-119*			
Surrogate: Toluene-d8			*13.5*	"	*12.5*		*108*	*69-120*			
Surrogate: 4-Bromofluorobenzene			*13.6*	"	*12.5*		*109*	*79-125*			
Batch B9D0784 - EPA 8260B/LUFT Preparation: EPA 5030B VOCGCMS 04/26/19 14:41											
Blank (B9D0784-BLK1)				Analyzed: 04/26/19 15:57							
t-Amyl Methyl Ether	ND	0.25	0.50	ug/L							
Benzene	ND	0.25	0.50	"							
Bromobenzene	ND	0.25	0.50	"							
Bromochloromethane	ND	0.25	0.50	"							
Bromodichloromethane	ND	0.25	0.50	"							
Bromoform	ND	0.25	0.50	"							
Bromomethane	ND	0.25	0.50	"							
t-Butyl alcohol	ND	2.5	10	"							
n-Butylbenzene	ND	0.25	0.50	"							
sec-Butylbenzene	ND	0.25	0.50	"							
tert-Butylbenzene	ND	0.25	0.50	"							
Carbon tetrachloride	ND	0.25	0.50	"							
Chlorobenzene	ND	0.25	0.50	"							
Chloroethane	ND	0.25	0.50	"							
Chloroform	ND	0.25	0.50	"							
Chloromethane	ND	0.25	0.50	"							
2-Chlorotoluene	ND	0.25	0.50	"							
4-Chlorotoluene	ND	0.25	0.50	"							

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0784 - EPA 8260B/LUFT Preparation: EPA 5030B VOCGCMS 04/26/19 14:41											
Blank (B9D0784-BLK1) Analyzed: 04/26/19 16:24											
Dibromochloromethane	ND	0.25	0.50	ug/L							
1,2-Dibromo-3-chloropropane	ND	0.75	1.0	"							
1,2-Dibromoethane (EDB)	ND	0.25	0.50	"							
Dibromomethane	ND	0.25	0.50	"							
1,2-Dichlorobenzene	ND	0.25	0.50	"							
1,3-Dichlorobenzene	ND	0.25	0.50	"							
1,4-Dichlorobenzene	ND	0.25	0.50	"							
Dichlorodifluoromethane	ND	0.26	0.50	"							
1,1-Dichloroethane	ND	0.25	0.50	"							
1,2-Dichloroethane	ND	0.25	0.50	"							
1,1-Dichloroethene	ND	0.25	0.50	"							
cis-1,2-Dichloroethene	ND	0.25	0.50	"							
trans-1,2-Dichloroethene	ND	0.25	0.50	"							
1,2-Dichloropropane	ND	0.25	0.50	"							
1,3-Dichloropropane	ND	0.25	0.50	"							
2,2-Dichloropropane	ND	0.25	0.50	"							
1,1-Dichloropropene	ND	0.25	0.50	"							
cis-1,3-Dichloropropene	ND	0.25	0.50	"							
trans-1,3-Dichloropropene	ND	0.25	0.50	"							
Diisopropyl Ether	ND	0.25	0.50	"							
Ethanol	ND	250	500	"							
Ethyl t-Butyl Ether	ND	0.25	0.50	"							
Ethylbenzene	ND	0.25	0.50	"							
Hexachlorobutadiene	ND	0.25	0.50	"							
4-Isopropyl Toluene	ND	0.25	0.50	"							
Isopropylbenzene	ND	0.25	0.50	"							
Methylene chloride	ND	0.35	0.50	"							
Methyl-t-butyl ether	ND	0.25	0.50	"							
Naphthalene	ND	0.25	0.50	"							
n-Propylbenzene	ND	0.25	0.50	"							
Styrene	ND	0.25	0.50	"							
1,1,1,2-Tetrachloroethane	ND	0.25	0.50	"							
1,1,2,2-Tetrachloroethane	ND	0.25	0.50	"							
Tetrachloroethene (PCE)	ND	0.25	0.50	"							
Toluene	ND	0.25	0.50	"							
1,2,3-Trichlorobenzene	ND	0.25	0.50	"							
1,2,4-Trichlorobenzene	ND	0.25	0.50	"							
1,1,1-Trichloroethane	ND	0.25	0.50	"							
1,1,2-Trichloroethane	ND	0.25	0.50	"							
Trichloroethene (TCE)	ND	0.25	0.50	"							
Trichlorofluoromethane	ND	0.25	0.50	"							
1,2,3-Trichloropropane	ND	0.25	0.50	"							

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0784 - EPA 8260B/LUFT Preparation: EPA 5030B VOCGCMS 04/26/19 14:41											
Blank (B9D0784-BLK1) Analyzed: 04/26/19 16:24											
1,2,4-Trimethylbenzene	ND	0.25	0.50	ug/L							
1,3,5-Trimethylbenzene	ND	0.25	0.50	"							
Vinyl chloride	ND	0.25	0.50	"							
Xylenes (total)	ND	0.27	0.50	"							
TPH Gasoline (C4-C12)	ND	20	50	"							
Surrogate: Dibromofluoromethane			*12.8*	"	*12.5*		*103*	*83-119*			
Surrogate: Toluene-d8			*12.1*	"	*12.5*		*96.9*	*69-120*			
Surrogate: 4-Bromofluorobenzene			*12.6*	"	*12.5*		*101*	*79-125*			
LCS (B9D0784-BS1) Analyzed: 04/26/19 14:09											
Benzene	4.69	0.25	0.50	ug/L	5.00		93.8	79-132			
Chlorobenzene	4.99	0.25	0.50	"	5.00		99.8	83-130			
1,1-Dichloroethene	3.66	0.25	0.50	"	5.00		73.2	62-147			
Toluene	4.93	0.25	0.50	"	5.00		98.6	71-133			
Trichloroethene (TCE)	5.30	0.25	0.50	"	5.00		106	79-140			
Surrogate: Dibromofluoromethane			*13.0*	"	*12.5*		*104*	*83-119*			
Surrogate: Toluene-d8			*12.6*	"	*12.5*		*101*	*69-120*			
Surrogate: 4-Bromofluorobenzene			*13.2*	"	*12.5*		*105*	*79-125*			
LCS (B9D0784-BS2) Analyzed: 04/26/19 15:03											
TPH Gasoline (C4-C12)	324	20	50	ug/L	500		64.9	56-132			
Surrogate: Dibromofluoromethane			*13.2*	"	*12.5*		*106*	*83-119*			
Surrogate: Toluene-d8			*12.9*	"	*12.5*		*104*	*69-120*			
Surrogate: 4-Bromofluorobenzene			*13.0*	"	*12.5*		*104*	*79-125*			
LCS Dup (B9D0784-BSD1) Analyzed: 04/26/19 14:36											
Benzene	4.74	0.25	0.50	ug/L	5.00		94.8	79-132	1.06	20	
Chlorobenzene	4.94	0.25	0.50	"	5.00		98.8	83-130	1.01	20	
1,1-Dichloroethene	3.72	0.25	0.50	"	5.00		74.4	62-147	1.63	20	
Toluene	5.09	0.25	0.50	"	5.00		102	71-133	3.19	20	
Trichloroethene (TCE)	5.20	0.25	0.50	"	5.00		104	79-140	1.90	20	
Surrogate: Dibromofluoromethane			*13.1*	"	*12.5*		*105*	*83-119*			
Surrogate: Toluene-d8			*13.0*	"	*12.5*		*104*	*69-120*			
Surrogate: 4-Bromofluorobenzene			*12.8*	"	*12.5*		*102*	*79-125*			

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0784 - EPA 8260B/LUFT Preparation: EPA 5030B VOCGCMS 04/26/19 14:41											
LCS Dup (B9D0784-BSD2)				Analyzed: 04/26/19 15:30							
TPH Gasoline (C4-C12)	329	20	50	ug/L	500		65.9	56-132	1.47	20	
Surrogate: Dibromofluoromethane			*13.1*	"	*12.5*		*104*	*83-119*			
Surrogate: Toluene-d8			*13.2*	"	*12.5*		*106*	*69-120*			
Surrogate: 4-Bromofluorobenzene			*13.0*	"	*12.5*		*104*	*79-125*			
Duplicate (B9D0784-DUP1)	**Source: 1902037-01**			Analyzed: 04/26/19 17:19							
t-Amyl Methyl Ether	ND	0.25	0.50	ug/L		ND				20	
Benzene	ND	0.25	0.50	"		ND				20	
Bromobenzene	ND	0.25	0.50	"		ND				20	
Bromochloromethane	ND	0.25	0.50	"		ND				20	
Bromodichloromethane	ND	0.25	0.50	"		ND				20	
Bromoform	ND	0.25	0.50	"		ND				20	
Bromomethane	ND	0.25	0.50	"		ND				20	
t-Butyl alcohol	ND	2.5	10	"		ND				20	
n-Butylbenzene	ND	0.25	0.50	"		ND				20	
sec-Butylbenzene	ND	0.25	0.50	"		ND				20	
tert-Butylbenzene	ND	0.25	0.50	"		ND				20	
Carbon tetrachloride	ND	0.25	0.50	"		ND				20	
Chlorobenzene	ND	0.25	0.50	"		ND				20	
Chloroethane	ND	0.25	0.50	"		ND				20	
Chloroform	ND	0.25	0.50	"		ND				20	
Chloromethane	ND	0.25	0.50	"		ND				20	
2-Chlorotoluene	ND	0.25	0.50	"		ND				20	
4-Chlorotoluene	ND	0.25	0.50	"		ND				20	
Dibromochloromethane	ND	0.25	0.50	"		ND				20	
1,2-Dibromo-3-chloropropane	ND	0.75	1.0	"		ND				20	
1,2-Dibromoethane (EDB)	ND	0.25	0.50	"		ND				20	
Dibromomethane	ND	0.25	0.50	"		ND				20	
1,2-Dichlorobenzene	ND	0.25	0.50	"		ND				20	
1,3-Dichlorobenzene	ND	0.25	0.50	"		ND				20	
1,4-Dichlorobenzene	ND	0.25	0.50	"		ND				20	
Dichlorodifluoromethane	ND	0.26	0.50	"		ND				20	
1,1-Dichloroethane	ND	0.25	0.50	"		ND				20	
1,2-Dichloroethane	ND	0.25	0.50	"		ND				20	
1,1-Dichloroethene	ND	0.25	0.50	"		ND				20	
cis-1,2-Dichloroethene	ND	0.25	0.50	"		ND				20	
trans-1,2-Dichloroethene	ND	0.25	0.50	"		ND				20	
1,2-Dichloropropane	ND	0.25	0.50	"		ND				20	
1,3-Dichloropropane	ND	0.25	0.50	"		ND				20	
2,2-Dichloropropane	ND	0.25	0.50	"		ND				20	
1,1-Dichloropropene	ND	0.25	0.50	"		ND				20	
cis-1,3-Dichloropropene	ND	0.25	0.50	"		ND				20	

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Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0784 - EPA 8260B/LUFT Preparation: EPA 5030B VOCGCMS 04/26/19 14:41											
Duplicate (B9D0784-DUP1)	**Source: 1902037-01**		Analyzed: 04/26/19 17:19								
trans-1,3-Dichloropropene	ND	0.25	0.50	ug/L		ND				20	
Diisopropyl Ether	ND	0.25	0.50	"		ND				20	
Ethanol	ND	250	500	"		ND				20	
Ethyl t-Butyl Ether	ND	0.25	0.50	"		ND				20	
Ethylbenzene	ND	0.25	0.50	"		ND				20	
Hexachlorobutadiene	ND	0.25	0.50	"		ND				20	
4-Isopropyl Toluene	ND	0.25	0.50	"		ND				20	
Isopropylbenzene	ND	0.25	0.50	"		ND				20	
Methylene chloride	ND	0.35	0.50	"		ND				20	
Methyl-t-butyl ether	ND	0.25	0.50	"		ND				20	
Naphthalene	ND	0.25	0.50	"		ND				20	
n-Propylbenzene	ND	0.25	0.50	"		ND				20	
Styrene	ND	0.25	0.50	"		ND				20	
1,1,1,2-Tetrachloroethane	ND	0.25	0.50	"		ND				20	
1,1,2,2-Tetrachloroethane	ND	0.25	0.50	"		ND				20	
Tetrachloroethene (PCE)	ND	0.25	0.50	"		ND				20	
Toluene	ND	0.25	0.50	"		ND				20	
1,2,3-Trichlorobenzene	ND	0.25	0.50	"		ND				20	
1,2,4-Trichlorobenzene	ND	0.25	0.50	"		ND				20	
1,1,1-Trichloroethane	ND	0.25	0.50	"		ND				20	
1,1,2-Trichloroethane	ND	0.25	0.50	"		ND				20	
Trichloroethene (TCE)	ND	0.25	0.50	"		ND				20	
Trichlorofluoromethane	ND	0.25	0.50	"		ND				20	
1,2,3-Trichloropropane	ND	0.25	0.50	"		ND				20	
1,2,4-Trimethylbenzene	ND	0.25	0.50	"		ND				20	
1,3,5-Trimethylbenzene	ND	0.25	0.50	"		ND				20	
Vinyl chloride	ND	0.25	0.50	"		ND				20	
Xylenes (total)	ND	0.27	0.50	"		ND				20	
TPH Gasoline (C4-C12)	ND	20	50	"		ND				20	
Surrogate: Dibromofluoromethane			*13.4*	*"*	*12.5*		*107*	*83-119*			
Surrogate: Toluene-d8			*12.3*	*"*	*12.5*		*98.5*	*69-120*			
Surrogate: 4-Bromofluorobenzene			*12.9*	*"*	*12.5*		*104*	*79-125*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D0784 - EPA 8260B/LUFT Preparation: EPA 5030B VOCGCMS 04/26/19 14:41											
Matrix Spike (B9D0784-MS1)	**Source: 1902062-01**			Analyzed: 04/26/19 23:36							
Benzene	5.73	0.25	0.50	ug/L	5.00	ND	115	70-141			
Chlorobenzene	5.54	0.25	0.50	"	5.00	ND	111	86-124			
1,1-Dichloroethene	3.83	0.25	0.50	"	5.00	ND	76.6	61-143			
Toluene	5.66	0.25	0.50	"	5.00	ND	113	66-135			
Trichloroethene (TCE)	5.60	0.25	0.50	"	5.00	ND	112	80-139			
Surrogate: Dibromofluoromethane			*13.3*	*"*	*12.5*		*106*	*83-119*			
Surrogate: Toluene-d8			*12.7*	*"*	*12.5*		*101*	*69-120*			
Surrogate: 4-Bromofluorobenzene			*13.8*	*"*	*12.5*		*111*	*79-125*			
Matrix Spike (B9D0784-MS2)	**Source: 1902062-03**			Analyzed: 04/27/19 00:03							
TPH Gasoline (C4-C12)	369	20	50	ug/L	500	ND	73.8	34-149			
Surrogate: Dibromofluoromethane			*13.1*	*"*	*12.5*		*105*	*83-119*			
Surrogate: Toluene-d8			*11.5*	*"*	*12.5*		*91.9*	*69-120*			
Surrogate: 4-Bromofluorobenzene			*13.8*	*"*	*12.5*		*110*	*79-125*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Rincon Consultants	Project: Ortega Park	WO & Reported:
180 N. Ashwood Ave.	Project Number: 18-06506	1901967
Ventura CA, 93003	Project Manager: Nico Navarro	04/29/2019 16:47

Notes and Definitions

R-05	The sample was diluted due to the presence of high levels of non-target analytes resulting in elevated reporting limits.
J	Detected but below the RL/PQL; therefore, result is an estimated concentration.
MDL	Method Detection Limit
RL	Reporting Limit (Quantitation Limit)
ND	Analyte NOT DETECTED at or above the method limit (MDL)
RPD	Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Oilfield Environmental and Compliance

307 Roemer Way Suite 300, Santa Maria, CA 93454
Phone: (805) 922-4772 Fax: (805) 925-3376 www.oecusa.com

101 Adkisson Way, Taft, CA 93268
Phone: (661) 762-9143

CHAIN OF CUSTODY

Page 1 of 1

Company: RINCON CONSULTANTS
Address: 180 N. ASHWOOD AVE
City/State/ZIP: VENTURA, CA 93003
Phone: 805.223.5066 Fax: —— E-mail: nnavarro@rinconconsultants.com
Report To: NICO NAVARRO Sampler: NICO NAVARRO
Report Format(s): FAX- ☐ PDF (std)- ☒ Colt/LUFT EDF- ☐ EDD- ☐
Turnaround Time: 10 Days- ☐ 5 Days (std)- ☒ 3 Days- ☐ 2 Days- ☐ 1 Day- ☐ ASAP- ☐
NOTE: Samples received after 4:00PM will be considered as received the next business day

Project Name/#: ORTEGA PARK / 18-06506
Site:

OEC Sample ID	Date/Time Sampled	Matrix** (see key)	# of Cont.	Client Sample ID	TPHd & o EPA 8015M	TPHg & VOCs EPA 8260B	Special Instructions:
1901907 01	4.16.19/1120	GW	4	HP5-GW	X	X	TPHg & VOCs to include oxygenates
02	/1430			HP3-GW	X	X	
03	/1445			HP4-GW	X	X	
04	/1535			HP2-GW	X	X	

Relinquished By: Nico Navarro	Date: 4.16.19	Time: 1715	
Received By:	Date: 4/16/19	Time: 1715	
Relinquished By:	Date: 4/16/19	Time: 1912	
Received By: OEC FRIDGE	Date: 4/16/19	Time: 1912	
Relinquished By: OEC FRIDGE	Date: 4/17/19	Time: 0755	
Received By:	Date: 4/17/19	Time: 0755	

Matrix Key**:
A = air / vapor
AQ = aqueous
DW = drinking water
F = filter
GW = ground water
P = product / oil
PW = product water
S = solid / sediment
SW = surface water
WP = wipe
WW = waste water

Comments/PO#:

Rev. 09/23/2014

CLIENT: Rincon

WORK ORDER: 1901967 TEMPERATURE: 3.5 °C SAMPLE RECEIPT

Recorded Corrected; Acceptable Range: 0°C to 6°C [see exception notes below]

COC RECEIVED DATE/TIME: 4/17/19 755

LOGIN DATE/TIME: 4/17/19 @ 1122

REFRIGERATOR(S): 8

SAMPLE TRANSPORT

- ☑ OEC Courier/Sampler
- ☐ Delivery (Other than OEC)
- ☐ After-Hours Outside Drop-Off [Brought Inside]
  - Initials/Date/Time: _____
- ☐ Shipment Carrier: _____
  - Tracking #: _____

CUSTODY SEALS ☑ None Present

Cooler(s): ☐ Present, Intact ☐ Present, Not Intact ☐ None

Sample(s): ☐ Present, Intact ☐ Present, Not Intact ☐ None

SAMPLE RECEIPT, CONDITION, PRESERVATION

- ☑ Samples Received on Ice Within Temperature Range [Acceptable]
- ☐ Samples Received Outside Temperature Range [Acceptable]
  - ☐ Direct from Field, on Ice
  - ☐ Ambient: Air or Filter Matrix
  - ☐ Received Ambient, Placed on Ice for Transport
  - ☐ Sample Temperature Acceptable for Analysis Requested
- ☐ Samples Received Outside Temperature Range [Exception] *
  - ☐ Insufficient Ice or Unknown Cause
- ☐ Excessive Free Liquid in Sample Bags or Cooler

(*) Narration Comment Required	YES	NO	N/A
Completed COC(s) Received With Samples	☑	☐ *	
Correct Container(s)/Preserve for Analysis	☑	☐ *	
Container(s) Intact and in Good Condition	☑	☐ *	
Container Label(s) Consistent with COC	☑	☐ *	
OEC Preservation Added **	☐	☑	
Sample Quantity Sufficient & Appropriate	☑	☐ *	
VOA Containers Free of Headspace	☐	☑ *	☐
Tedlar Bag(s) Free of Condensation	☐	☐ *	☑

☐ See attached **PROBLEM CHAIN** for additional narration comments

(**) OEC Presrv. ID

CONTAINERS, COC CHANGES, AND/OR CORRECTIONS

OEC CONTAINER ID	CONTAINER DESCRIPTION	PRESERVATIVE	CHECKS: Cl⁻, S⁻ &/or pH	MATRIX	COMMENTS	INITIALS (Narration Comments Only)
01-04A	1- 1L Amber Ea.	—	—	W	8	
01-04B-D	3- 40mL VOA Ea.	HCl	—	W	3 2C, 2D HAVE HEADSPACE	

Rev. 02/25/2019

RECEIPT LOGIN BY: CKC

RECEIPT REVIEWED BY: _____

Appendix C

Monitoring Well Permits

RB/S

Santa Barbara County PUBLIC Health DEPARTMENT

Environmental Health Services
225 Camino Del Remedio, Santa Barbara, CA. 93110 ◆(805) 681-4900
2125 S. Centerpointe Pkwy., #333 ◆ Santa Maria, CA 93455-1340 ◆ (805) 346-8460

MONITORING WELL PERMIT APPLICATION

TYPE OF PERMIT (*Please check the appropriate box below*)

☐ Construction or Modification	$629 (4 hrs) * first well $157 additional well	"Modification" means the deepening of a well, reperforation, sealing or replacement of well casing – construction of one completed well.
☒ Well Destruction	$471 (3 hrs) * first well $157 additional well	Abandonment – Complete filling of the well

* *An hourly rate fee of $157 will be added for those projects that require staff time in excess of that noted above. Final project approval will not be issued until all fees are paid.*

FOR OFFICE USE ONLY
Rec'd Date: 4/9/2019
Rec'd By: TMR
Permit #: A19140
W/P #: 0003951
P/E #: 4686
Hazmat Site #: NA

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

1. Property lines
2. Below grade utilities, piping, USTs, etc.
3. Access roads and easements (water, sewer, utility, roadway)
4. Existing and/or proposed structures.
5. Sewage disposal systems or works carrying or containing sewage or industrial wastes within the vicinity of the proposed well
6. All perennial, seasonal, natural, or artificial water bodies or watercourses, if applicable

OWNER INFO:

Well Owner Name (Required): City of Santa Barbara Primary Phone (805) 564-5596

Owner Mailing Address: PO Box 1990, Santa Barbara, California 93102-1990
Street Number and Street Name City State/ Zip Code

Complete this section if the person coordinating this project is other than the Well Owner (e.g., driller, contractor, etc.)

Project Coordinator/Certified Professional Name: Cody Wilgus

Mailing Address: 209 East Victoria Street, Santa Barbara, California 93101
Street Number and Name City State / Zip Code

Primary Phone: (805) 644 - 4455 Email: cwilgus@rinconconsultants.com

WELL INFO:

Well Location: Ortega Park, 604 East Ortega Street, Santa Barbara, California 93103
Street Number and Street Name City State/ Zip Code

Well Location's Assessor's Parcel Number (APN): 0 3 1 - 1 7 2 - 0 0 2

Well Use: ☒ Ground Water Monitoring ☐ Vapor ☐ Other

Drilling Method: ☐ Hollow Stem Auger ☐ Mud Rotary ☐ Air Rotary ☐ Sonic ☒ Direct Push ☐ Other

Proposed Depth 10 ft.
Well Bore Diam. 3.25 in.
Screen Interval 5-10 ft bgs
Sealing Material
☐ Neat Cement ☒ Clay
☐ Cement Grout ☐ Concrete
Well ID # HP1~~XXX~~8

Casing Information

Type: ☐ Steel ☒ PVC ☐ Other
Wall Thickness 0.113 Diameter 0.75 in. Annular Seal Depth ____ ft.
Additional Work Description: Advance sampling tool to groundwater, collect grab sample
If destruction by pressure grout, grout volume:

LEGAL DECLARATION

LICENSED CONTRACTOR DECLARATION

I hereby affirm that I am licensed under the provisions of Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code (B. & P.C.) as a well drilling contractor (C-57 license) and such license is in full force and effect.

Julius Carstens (Print Name of Driller) | Julius Carstens (Signature of Driller) | 4-8-19 (Date)

Lic. No.: 841350 Office Telephone 805-922-4772 Cell Phone: 805-570-4114

Business Name: Address

(Complete 'A' or 'B')

A. WORKERS' COMPENSATION DECLARATION

I hereby affirm one of the following:

☐ I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

☒ I have and will maintain workers' compensation insurance, as provided for by Section 3700 of the Labor Code, for the performance of work for which this permit is issued. My insurance carrier and policy number are:

Carrier CA St Compensation Fund Ins Policy No. 9212499918

Applicant Signature Julius Carstens Date 4-8-19

B. CERTIFICATION OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

I certify that in the performance of work for which this permit is issued, I shall not employ any person in a manner so as to become subject to the Worker's Compensation Laws of California.

Applicant Signature Date

Notice to Applicant: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

When signed by the Hazardous Materials Specialist or Professional Geologist, this application shall be deemed a permit only for the work described and is not a "permit for development" as that term is used in the California Subdivision Map Act. Please note additional permits (e.g., electrical installation, waste discharge requirements, land use clearance, grading, Santa Barbara City well permits) may also be required from other agencies. THIS PERMIT IS VALID FOR ONE YEAR FROM THE DATE OF ISSUANCE FOR THE WORK APPROVED HEREIN. No changes from the approved plan are permitted without prior written approval by Environmental Health Services (EHS). Final clearance will not be issued until all fees are paid and a copy of the drillers log is submitted to EHS.

I hereby agree to comply with all regulations of the County of Santa Barbara and California Well Standards pertaining to well construction, repair, modification, destruction and inactivation. The property owner, well driller, or agent will furnish EHS a copy of a completed well log upon completion of well construction, destruction, or modification.

I certify that I have read this application and declare under penalty of perjury that the information contained herein is true, correct and complete. I hereby authorize representatives of EHS to enter the premises for the purpose of inspecting the site and work described herein for compliance with county requirements.

REQUIRED INSPECTIONS / FINAL CLEARANCE: After permit approval, and prior to covering any components, an inspection must be scheduled directly with the approving Hazardous Materials Specialist or Professional Geologist at least two (2) business days in advance for:

- ✓ The sealing of the annular space on a well;
- ✓ The destruction of wells;
- ✓ Any operation stipulated on the permit to address special or unusual conditions.
- ❖ **Final clearance of the well will be issued upon receipt of the driller's well log.**

Signed Cody Wilgus (Applicant (Print Name)) | Cody Wilgus (Applicant's Signature) Digitally signed by Cody Wilgus Date: 2019.04.08 15:06:04 -07'00' | 4/8/2019 (Date)

APPLICATION DISPOSITION: ☒ **Approved** ☐ **Denied**

Signed Environmental Health Specialist | 4/10/2019 (Date)

FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: TMR Date: 4/10/2019 Amt.$ 471.00 ☐ Cash ☐ Check # Visa

Receipt No.:#: 2120718

Permit Conditions: NOTIFY EHS 48 HRS IN ADVANCE OF FIELDWORK

Final Construction Approved by: Date: 4/10/2019

Final Clearance by: Date: 4/10/2019

RB/S

Santa Barbara County PUBLIC Health DEPARTMENT

Environmental Health Services
225 Camino Del Remedio, Santa Barbara, CA. 93110 ◆(805) 681-4900
2125 S. Centerpointe Pkwy., #333 ◆ Santa Maria, CA 93455-1340 ◆ (805) 346-8460

MONITORING WELL PERMIT APPLICATION

TYPE OF PERMIT (*Please check the appropriate box below*)

☐ Construction or Modification	$629 (4 hrs) * first well $157 additional well	"Modification" means the deepening of a well, reperforation, sealing or replacement of well casing – construction of one completed well.
☒ Well Destruction	$471 (3 hrs) * first well $157 additional well	Abandonment – Complete filling of the well

* *An hourly rate fee of $157 will be added for those projects that require staff time in excess of that noted above. Final project approval will not be issued until all fees are paid.*

FOR OFFICE USE ONLY
Rec'd Date: 4/9/2019
Rec'd By: TMR
Permit #: A19141
W/P #: 0003952
P/E #: 4687
Hazmat Site #: NA

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

1. Property lines
2. Below grade utilities, piping, USTs, etc.
3. Access roads and easements (water, sewer, utility, roadway)
4. Existing and/or proposed structures.
5. Sewage disposal systems or works carrying or containing sewage or industrial wastes within the vicinity of the proposed well
6. All perennial, seasonal, natural, or artificial water bodies or watercourses, if applicable

OWNER INFO:

Well Owner Name (Required): City of Santa Barbara Primary Phone (805) 564-5596

Owner Mailing Address: PO Box 1990, Santa Barbara, California 93102-1990
Street Number and Street Name City State/ Zip Code

Complete this section if the person coordinating this project is other than the Well Owner (e.g., driller, contractor, etc.)

Project Coordinator/Certified Professional Name: Cody Wilgus

Mailing Address: 209 East Victoria Street, Santa Barbara, California 93101
Street Number and Name City State / Zip Code

Primary Phone: (805) 644 - 4455 Email: cwilgus@rinconconsultants.com

WELL INFO:

Well Location: Ortega Park, 604 East Ortega Street, Santa Barbara, California 93103
Street Number and Street Name City State/ Zip Code

Well Location's Assessor's Parcel Number (APN): 0 3 1 - 1 7 2 - 0 0 2

Well Use: ☒ Ground Water Monitoring ☐ Vapor ☐ Other

Drilling Method: ☐ Hollow Stem Auger ☐ Mud Rotary ☐ Air Rotary ☐ Sonic ☒ Direct Push ☐ Other

Proposed Depth 10 ft.
Well Bore Diam. 3.25 in.
Screen Interval 5-10 ft bgs
Sealing Material
☐ Neat Cement ☒ Clay
☐ Cement Grout ☐ Concrete
Well ID # ~~HP1~~ ~~HP3~~ ~~HP5~~ HP-2

Casing Information

Type: ☐ Steel ☒ PVC ☐ Other
Wall Thickness 0.113 Diameter 0.75 in. Annular Seal Depth ____ ft.
Additional Work Description: Advance sampling tool to groundwater, collect grab sample
If destruction by pressure grout, grout volume:

LEGAL DECLARATION

LICENSED CONTRACTOR DECLARATION

I hereby affirm that I am licensed under the provisions of Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code (B. & P.C.) as a well drilling contractor (C-57 license) and such license is in full force and effect.

Julius Carstens (Print Name of Driller) | Julius Carstens (Signature of Driller) | 4-8-19 (Date)

Lic. No.: 841350 Office Telephone 805-922-4772 Cell Phone: 805-570-4114

Business Name: Address

(Complete 'A' or 'B')

A. WORKERS' COMPENSATION DECLARATION

I hereby affirm one of the following:

☐ I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

☒ I have and will maintain workers' compensation insurance, as provided for by Section 3700 of the Labor Code, for the performance of work for which this permit is issued. My insurance carrier and policy number are:

Carrier CA St Compensation Fund Ins Policy No. 9212499918

Applicant Signature Julius Carstens Date 4-8-19

B. CERTIFICATION OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

I certify that in the performance of work for which this permit is issued, I shall not employ any person in a manner so as to become subject to the Worker's Compensation Laws of California.

Applicant Signature Date

Notice to Applicant: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

When signed by the Hazardous Materials Specialist or Professional Geologist, this application shall be deemed a permit only for the work described and is not a "permit for development" as that term is used in the California Subdivision Map Act. Please note additional permits (e.g., electrical installation, waste discharge requirements, land use clearance, grading, Santa Barbara City well permits) may also be required from other agencies. THIS PERMIT IS VALID FOR ONE YEAR FROM THE DATE OF ISSUANCE FOR THE WORK APPROVED HEREIN. No changes from the approved plan are permitted without prior written approval by Environmental Health Services (EHS). Final clearance will not be issued until all fees are paid and a copy of the drillers log is submitted to EHS.

I hereby agree to comply with all regulations of the County of Santa Barbara and California Well Standards pertaining to well construction, repair, modification, destruction and inactivation. The property owner, well driller, or agent will furnish EHS a copy of a completed well log upon completion of well construction, destruction, or modification.

I certify that I have read this application and declare under penalty of perjury that the information contained herein is true, correct and complete. I hereby authorize representatives of EHS to enter the premises for the purpose of inspecting the site and work described herein for compliance with county requirements.

REQUIRED INSPECTIONS / FINAL CLEARANCE: After permit approval, and prior to covering any components, an inspection must be scheduled directly with the approving Hazardous Materials Specialist or Professional Geologist at least two (2) business days in advance for:

- ✓ The sealing of the annular space on a well;
- ✓ The destruction of wells;
- ✓ Any operation stipulated on the permit to address special or unusual conditions.
- ❖ **Final clearance of the well will be issued upon receipt of the driller's well log.**

Signed Cody Wilgus (Applicant (Print Name)) | Cody Wilgus Digitally signed by Cody Wilgus Date: 2019.04.08 15:06:04 -07'00' (Applicant's Signature) | 4/8/2019 (Date)

APPLICATION DISPOSITION: ☒ Approved ☐ Denied

Signed _____ (Environmental Health Specialist) 4/10/2019 (Date)

FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: MCB Date: 4/10/2019 Amt.$ 157.00 ☐ Cash ☐ Check # Visa

Receipt No.:#: 2120718

Permit Conditions: Notify EHS 48 hours in advance of fieldwork

Final Construction Approved by: TMR Date: 4/10/2019

Final Clearance by: TMR Date: 4/10/2019

RBIS

Santa Barbara County PUBLIC Health DEPARTMENT

Environmental Health Services
225 Camino Del Remedio, Santa Barbara, CA. 93110 ◆(805) 681-4900
2125 S. Centerpointe Pkwy., #333 ◆ Santa Maria, CA 93455-1340 ◆ (805) 346-8460

MONITORING WELL PERMIT APPLICATION

TYPE OF PERMIT (*Please check the appropriate box below*)

☐ Construction or Modification	$629 (4 hrs) * first well $157 additional well	"Modification" means the deepening of a well, reperforation, sealing or replacement of well casing – construction of one completed well.
☒ Well Destruction	$471 (3 hrs) * first well $157 additional well	Abandonment – Complete filling of the well

* *An hourly rate fee of $157 will be added for those projects that require staff time in excess of that noted above. Final project approval will not be issued until all fees are paid.*

FOR OFFICE USE ONLY
Rec'd Date: 4/9/2019
Rec'd By: TMR
Permit #: A19142
W/P #: 0003953
P/E #: 4687
Hazmat Site #: NA

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

1. Property lines
2. Below grade utilities, piping, USTs, etc.
3. Access roads and easements (water, sewer, utility, roadway)
4. Existing and/or proposed structures.
5. Sewage disposal systems or works carrying or containing sewage or industrial wastes within the vicinity of the proposed well
6. All perennial, seasonal, natural, or artificial water bodies or watercourses, if applicable

OWNER INFO:

Well Owner Name (Required): City of Santa Barbara Primary Phone (805) 564-5596

Owner Mailing Address: PO Box 1990, Santa Barbara, California 93102-1990
Street Number and Street Name City State/ Zip Code

Complete this section if the person coordinating this project is other than the Well Owner (e.g., driller, contractor, etc.)

Project Coordinator/Certified Professional Name: Cody Wilgus

Mailing Address: 209 East Victoria Street, Santa Barbara, California 93101
Street Number and Name City State / Zip Code

Primary Phone: (805) 644 - 4455 Email: cwilgus@rinconconsultants.com

WELL INFO:

Well Location: Ortega Park, 604 East Ortega Street, Santa Barbara, California 93103
Street Number and Street Name City State/ Zip Code

Well Location's Assessor's Parcel Number (APN): 0 3 1 - 1 7 2 - 0 0 2

Well Use: ☒ Ground Water Monitoring ☐ Vapor ☐ Other

Drilling Method: ☐ Hollow Stem Auger ☐ Mud Rotary ☐ Air Rotary ☐ Sonic ☒ Direct Push ☐ Other

Proposed Depth 10 ft.
Well Bore Diam. 3.25 in.
Screen Interval 5-10 ft bgs

Sealing Material

☐ Neat Cement ☒ Clay
☐ Cement Grout ☐ Concrete

Well ID # ~~HR1-HR5~~ HP-3

Casing Information

Type: ☐ Steel ☒ PVC ☐ Other

Wall Thickness 0.113 Diameter 0.75 in. Annular Seal Depth ____ ft.

Additional Work Description: Advance sampling tool to groundwater, collect grab sample

If destruction by pressure grout, grout volume:

LEGAL DECLARATION

LICENSED CONTRACTOR DECLARATION

I hereby affirm that I am licensed under the provisions of Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code (B. & P.C.) as a well drilling contractor (C-57 license) and such license is in full force and effect.

Julius Carstens (Print Name of Driller) | Julius Carstens (Signature of Driller) | 4-8-19 (Date)

Lic. No.: 841350 Office Telephone 805-922-4772 Cell Phone: 805-570-4114

Business Name: Address

(Complete 'A' or 'B')

A. WORKERS' COMPENSATION DECLARATION

I hereby affirm one of the following:

☐ I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

☒ I have and will maintain workers' compensation insurance, as provided for by Section 3700 of the Labor Code, for the performance of work for which this permit is issued. My insurance carrier and policy number are:

Carrier CA Ju State Compensation Fund Ins Policy No. 9212499918

Applicant Signature Julius Carstens Date 4-8-19

B. CERTIFICATION OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

I certify that in the performance of work for which this permit is issued, I shall not employ any person in a manner so as to become subject to the Worker's Compensation Laws of California.

Applicant Signature Date

Notice to Applicant: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

When signed by the Hazardous Materials Specialist or Professional Geologist, this application shall be deemed a permit only for the work described and is not a "permit for development" as that term is used in the California Subdivision Map Act. Please note additional permits (e.g., electrical installation, waste discharge requirements, land use clearance, grading, Santa Barbara City well permits) may also be required from other agencies. THIS PERMIT IS VALID FOR ONE YEAR FROM THE DATE OF ISSUANCE FOR THE WORK APPROVED HEREIN. No changes from the approved plan are permitted without prior written approval by Environmental Health Services (EHS). Final clearance will not be issued until all fees are paid and a copy of the drillers log is submitted to EHS.

I hereby agree to comply with all regulations of the County of Santa Barbara and California Well Standards pertaining to well construction, repair, modification, destruction and inactivation. The property owner, well driller, or agent will furnish EHS a copy of a completed well log upon completion of well construction, destruction, or modification.

I certify that I have read this application and declare under penalty of perjury that the information contained herein is true, correct and complete. I hereby authorize representatives of EHS to enter the premises for the purpose of inspecting the site and work described herein for compliance with county requirements.

REQUIRED INSPECTIONS / FINAL CLEARANCE: After permit approval, and prior to covering any components, an inspection must be scheduled directly with the approving Hazardous Materials Specialist or Professional Geologist at least two (2) business days in advance for:

- ✓ The sealing of the annular space on a well;
- ✓ The destruction of wells;
- ✓ Any operation stipulated on the permit to address special or unusual conditions.
- ❖ **Final clearance of the well will be issued upon receipt of the driller's well log.**

Signed Cody Wilgus (Applicant (Print Name)) | Cody Wilgus Digitally signed by Cody Wilgus Date: 2019.04.08 15:06:04 -07'00' (Applicant's Signature) | 4/8/2019 (Date)

APPLICATION DISPOSITION: ☒ Approved ☐ Denied

Signed [signature] (Environmental Health Specialist) | 4/10/2019 (Date)

FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: MCB Date: 4/10/2019 Amt.$ 157.00 ☐ Cash ☐ Check # Visa

Receipt No.:#: 2120718

Permit Conditions: Notify EHS 48 hours in advance of fieldwork

Final Construction Approved by: TMR Date: 4/10/2019

Final Clearance by: TMR Date: 4/10/2019

RB/S

Santa Barbara County PUBLIC Health DEPARTMENT

Environmental Health Services
225 Camino Del Remedio, Santa Barbara, CA. 93110 ◆(805) 681-4900
2125 S. Centerpointe Pkwy., #333 ◆ Santa Maria, CA 93455-1340 ◆ (805) 346-8460

MONITORING WELL PERMIT APPLICATION

TYPE OF PERMIT (*Please check the appropriate box below*)

☐ Construction or Modification	$629 (4 hrs) * first well $157 additional well	"Modification" means the deepening of a well, reperforation, sealing or replacement of well casing – construction of one completed well.
☒ Well Destruction	$471 (3 hrs) * first well $157 additional well	Abandonment – Complete filling of the well

* *An hourly rate fee of $157 will be added for those projects that require staff time in excess of that noted above. Final project approval will not be issued until all fees are paid.*

FOR OFFICE USE ONLY
Rec'd Date: 4/9/2019
Rec'd By: TMR
Permit #: A19143
W/P #: 0003954
P/E #: 4687
Hazmat Site #: NA

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

1. Property lines
2. Below grade utilities, piping, USTs, etc.
3. Access roads and easements (water, sewer, utility, roadway)
4. Existing and/or proposed structures.
5. Sewage disposal systems or works carrying or containing sewage or industrial wastes within the vicinity of the proposed well
6. All perennial, seasonal, natural, or artificial water bodies or watercourses, if applicable

OWNER INFO:

Well Owner Name (Required): City of Santa Barbara Primary Phone (805) 564-5596

Owner Mailing Address: PO Box 1990, Santa Barbara, California 93102-1990
Street Number and Street Name City State/ Zip Code

Complete this section if the person coordinating this project is other than the Well Owner (e.g., driller, contractor, etc.)

Project Coordinator/Certified Professional Name: Cody Wilgus

Mailing Address: 209 East Victoria Street, Santa Barbara, California 93101
Street Number and Name City State / Zip Code

Primary Phone: (805) 644 - 4455 Email: cwilgus@rinconconsultants.com

WELL INFO:

Well Location: Ortega Park, 604 East Ortega Street, Santa Barbara, California 93103
Street Number and Street Name City State/ Zip Code

Well Location's Assessor's Parcel Number (APN): 0 3 1 - 1 7 2 - 0 0 2

Well Use: ☒ Ground Water Monitoring ☐ Vapor ☐ Other

Drilling Method: ☐ Hollow Stem Auger ☐ Mud Rotary ☐ Air Rotary ☐ Sonic ☒ Direct Push ☐ Other

Proposed Depth 10 ft.
Well Bore Diam. 3.25 in.
Screen Interval 5-10 ft bgs
Sealing Material
☐ Neat Cement ☒ Clay
☐ Cement Grout ☐ Concrete
Well ID # ~~MW-XX-HP-X~~ HP4

Casing Information

Type: ☐ Steel ☒ PVC ☐ Other
Wall Thickness 0.113 Diameter 0.75 in. Annular Seal Depth ____ ft.
Additional Work Description: Advance sampling tool to groundwater, collect grab sample
If destruction by pressure grout, grout volume:

LEGAL DECLARATION

LICENSED CONTRACTOR DECLARATION

I hereby affirm that I am licensed under the provisions of Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code (B. & P.C.) as a well drilling contractor (C-57 license) and such license is in full force and effect.

Julius Carstens — Print Name of Driller | Julius Carstens — Signature of Driller | 4-8-19 — Date

Lic. No.: 841350 Office Telephone 805-922-4772 Cell Phone: 805-570-4114

Business Name: Address

(Complete 'A' or 'B')

A. WORKERS' COMPENSATION DECLARATION

I hereby affirm one of the following:

☐ I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

☒ I have and will maintain workers' compensation insurance, as provided for by Section 3700 of the Labor Code, for the performance of work for which this permit is issued. My insurance carrier and policy number are:

Carrier CA St Compensation Fund Ins Policy No. 9212499918

Applicant Signature Julius Carstens Date 4-8-19

B. CERTIFICATION OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

I certify that in the performance of work for which this permit is issued, I shall not employ any person in a manner so as to become subject to the Worker's Compensation Laws of California.

Applicant Signature _____ Date _____

Notice to Applicant: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

When signed by the Hazardous Materials Specialist or Professional Geologist, this application shall be deemed a permit only for the work described and is not a "permit for development" as that term is used in the California Subdivision Map Act. Please note additional permits (e.g., electrical installation, waste discharge requirements, land use clearance, grading, Santa Barbara City well permits) may also be required from other agencies. THIS PERMIT IS VALID FOR ONE YEAR FROM THE DATE OF ISSUANCE FOR THE WORK APPROVED HEREIN. No changes from the approved plan are permitted without prior written approval by Environmental Health Services (EHS). Final clearance will not be issued until all fees are paid and a copy of the drillers log is submitted to EHS.

I hereby agree to comply with all regulations of the County of Santa Barbara and California Well Standards pertaining to well construction, repair, modification, destruction and inactivation. The property owner, well driller, or agent will furnish EHS a copy of a completed well log upon completion of well construction, destruction, or modification.

I certify that I have read this application and declare under penalty of perjury that the information contained herein is true, correct and complete. I hereby authorize representatives of EHS to enter the premises for the purpose of inspecting the site and work described herein for compliance with county requirements.

REQUIRED INSPECTIONS / FINAL CLEARANCE: After permit approval, and prior to covering any components, an inspection must be scheduled directly with the approving Hazardous Materials Specialist or Professional Geologist at least two (2) business days in advance for:

- ✓ The sealing of the annular space on a well;
- ✓ The destruction of wells;
- ✓ Any operation stipulated on the permit to address special or unusual conditions.
- ❖ **Final clearance of the well will be issued upon receipt of the driller's well log.**

Signed Cody Wilgus — Applicant (Print Name) | Cody Wilgus — Applicant's Signature | Digitally signed by Cody Wilgus Date: 2019.04.08 15:06:04 -07'00' | 4/8/2019 — Date

APPLICATION DISPOSITION: ☒ Approved ☐ Denied

Signed _____ — Environmental Health Specialist | 4/10/2019 — Date

FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: MCB Date: 4/10/2019 Amt.$ 157.00 ☐ Cash ☐ Check # Visa

Receipt No.:#: 2120718

Permit Conditions: Notify EHS 48 hours in advance of fieldwork

Final Construction Approved by: TMR Date: 4/10/2019

Final Clearance by: TMR Date: 4/10/2019

RB/S

Santa Barbara County PUBLIC Health DEPARTMENT

Environmental Health Services
225 Camino Del Remedio, Santa Barbara, CA. 93110 ◆(805) 681-4900
2125 S. Centerpointe Pkwy., #333 ◆ Santa Maria, CA 93455-1340 ◆ (805) 346-8460

MONITORING WELL PERMIT APPLICATION

TYPE OF PERMIT (*Please check the appropriate box below*)

☐ Construction or Modification	$629 (4 hrs) * first well $157 additional well	"Modification" means the deepening of a well, reperforation, sealing or replacement of well casing – construction of one completed well.
☒ Well Destruction	$471 (3 hrs) * first well $157 additional well	Abandonment – Complete filling of the well

* *An hourly rate fee of $157 will be added for those projects that require staff time in excess of that noted above. Final project approval will not be issued until all fees are paid.*

FOR OFFICE USE ONLY
Rec'd Date: 4/9/2019
Rec'd By: TMR
Permit #: A19144
W/P #: 0003955
P/E #: 4687
Hazmat Site #: NA

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

1. Property lines
2. Below grade utilities, piping, USTs, etc.
3. Access roads and easements (water, sewer, utility, roadway)
4. Existing and/or proposed structures.
5. Sewage disposal systems or works carrying or containing sewage or industrial wastes within the vicinity of the proposed well
6. All perennial, seasonal, natural, or artificial water bodies or watercourses, if applicable

OWNER INFO:

Well Owner Name (Required): City of Santa Barbara Primary Phone (805) 564-5596

Owner Mailing Address: PO Box 1990, Santa Barbara, California 93102-1990
Street Number and Street Name City State/ Zip Code

Complete this section if the person coordinating this project is other than the Well Owner (e.g., driller, contractor, etc.)

Project Coordinator/Certified Professional Name: Cody Wilgus

Mailing Address: 209 East Victoria Street, Santa Barbara, California 93101
Street Number and Name City State / Zip Code

Primary Phone: (805) 644 - 4455 Email: cwilgus@rinconconsultants.com

WELL INFO:

Well Location: Ortega Park, 604 East Ortega Street, Santa Barbara, California 93103
Street Number and Street Name City State/ Zip Code

Well Location's Assessor's Parcel Number (APN): 0 3 1 - 1 7 2 - 0 0 2

Well Use: ☒ Ground Water Monitoring ☐ Vapor ☐ Other

Drilling Method: ☐ Hollow Stem Auger ☐ Mud Rotary ☐ Air Rotary ☐ Sonic ☒ Direct Push ☐ Other

Proposed Depth 10 ft.
Well Bore Diam. 3.25 in.
Screen Interval 5-10 ft bgs
Sealing Material
☐ Neat Cement ☒ Clay
☐ Cement Grout ☐ Concrete
Well ID # ~~HP1~~ HP5

Casing Information

Type: ☐ Steel ☒ PVC ☐ Other
Wall Thickness 0.113 Diameter 0.75 in. Annular Seal Depth ____ ft.
Additional Work Description: Advance sampling tool to groundwater, collect grab sample
If destruction by pressure grout, grout volume:

LEGAL DECLARATION

LICENSED CONTRACTOR DECLARATION

I hereby affirm that I am licensed under the provisions of Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code (B. & P.C.) as a well drilling contractor (C-57 license) and such license is in full force and effect.

Julius Carstens (Print Name of Driller) | Julius Carstens (Signature of Driller) | 4-8-19 (Date)

Lic. No.: 841350 Office Telephone 805-922-4772 Cell Phone: 805-570-4114

Business Name: Address

(Complete 'A' or 'B')

A. WORKERS' COMPENSATION DECLARATION

I hereby affirm one of the following:

☐ I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

☒ I have and will maintain workers' compensation insurance, as provided for by Section 3700 of the Labor Code, for the performance of work for which this permit is issued. My insurance carrier and policy number are:

Carrier CA St Compensation Fund Ins Policy No. 9212499918

Applicant Signature Julius Carstens Date 4-8-19

B. CERTIFICATION OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

I certify that in the performance of work for which this permit is issued, I shall not employ any person in a manner so as to become subject to the Worker's Compensation Laws of California.

Applicant Signature Date

Notice to Applicant: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

When signed by the Hazardous Materials Specialist or Professional Geologist, this application shall be deemed a permit only for the work described and is not a "permit for development" as that term is used in the California Subdivision Map Act. Please note additional permits (e.g., electrical installation, waste discharge requirements, land use clearance, grading, Santa Barbara City well permits) may also be required from other agencies. THIS PERMIT IS VALID FOR ONE YEAR FROM THE DATE OF ISSUANCE FOR THE WORK APPROVED HEREIN. No changes from the approved plan are permitted without prior written approval by Environmental Health Services (EHS). Final clearance will not be issued until all fees are paid and a copy of the drillers log is submitted to EHS.

I hereby agree to comply with all regulations of the County of Santa Barbara and California Well Standards pertaining to well construction, repair, modification, destruction and inactivation. The property owner, well driller, or agent will furnish EHS a copy of a completed well log upon completion of well construction, destruction, or modification.

I certify that I have read this application and declare under penalty of perjury that the information contained herein is true, correct and complete. I hereby authorize representatives of EHS to enter the premises for the purpose of inspecting the site and work described herein for compliance with county requirements.

REQUIRED INSPECTIONS / FINAL CLEARANCE: After permit approval, and prior to covering any components, an inspection must be scheduled directly with the approving Hazardous Materials Specialist or Professional Geologist at least two (2) business days in advance for:

- ✓ The sealing of the annular space on a well;
- ✓ The destruction of wells;
- ✓ Any operation stipulated on the permit to address special or unusual conditions.
- ❖ **Final clearance of the well will be issued upon receipt of the driller's well log.**

Signed Cody Wilgus (Applicant (Print Name)) | Cody Wilgus Digitally signed by Cody Wilgus Date: 2019.04.08 15:06:04 -07'00' (Applicant's Signature) | 4/8/2019 (Date)

APPLICATION DISPOSITION: ☒ Approved ☐ Denied

Signed _____ (Environmental Health Specialist) 4/10/2019 (Date)

FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: MCB Date: 4/10/2019 Amt.$ 157.00 ☐ Cash ☐ Check # Visa

Receipt No.:#: 2120718

Permit Conditions: Notify EHS 48 hours in advance of fieldwork

Final Construction Approved by: TMR Date: 4/10/2019

Final Clearance by: TMR Date: 4/10/2019

COUNTY OF SANTA BARBARA

X 2120718

Environmental Health Services

Department

Date 4/09/2019

Received from GEORGE THOMPSON

In Payment of MW OBSERVATION @ 471 & 70 @ 157.00

ONE THOUSAND FIVE HUNDRED SEVENTY and 00/100 Dollars $ 1,570.00

Received original of the above numbered receipt

CREDIT CARD	V #5971
CASH	
CHECK	

BY PHONE
SIGNATURE OF PAYOR

AUTHORIZED SIGNATURE

AC-147

5419 SM ENVIRNMNTL HEA
2125 CTRPOINTE PKY S 33
SANTA MARIA, CA 9345513
04/09/2019 15:06:12
MID: XXXXXXXXXX310 TID: XXXXX806

CREDIT CARD
VISA SALE

Card # Token XXXXXXXXXXXX5971
SEQ #: 1
Batch #: 645
INVOICE 1
Approval Code: 024765
Entry Method: Manual
Mode: Online
Tax Amount: $0.00
Cust Code:
Avs Code: NYZ

SALE AMOUNT $1570.00

I agree to pay above total amount according to card issuer agreement.
(Merchant agreement if Credit Voucher)

X _____

MERCHANT COPY

HPS

Santa Barbara County PUBLIC Health DEPARTMENT

Environmental Health Services
225 Camino Del Remedio, Santa Barbara, CA. 93110 ◆(805) 681-4900
2125 S. Centerpointe Pkwy., #333 • Santa Maria, CA 93455-1340 ◆ (805) 346-8460

MONITORING WELL PERMIT APPLICATION

TYPE OF PERMIT (*Please check the appropriate box below*)

☐ Construction or Modification	$629 (4 hrs) * first well $157 additional well	"Modification" means the deepening of a well, reperforation, sealing or replacement of well casing – construction of one completed well.
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* *An hourly rate fee of $157 will be added for those projects that require staff time in excess of that noted above. Final project approval will not be issued until all fees are paid.*

FOR OFFICE USE ONLY
Rec'd Date: 4/9/2019
Rec'd By: TMR
Permit #: A19145
W/P #: 4687
P/E #: 0003956
Hazmat Site #: NA

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

1. Property lines
2. Below grade utilities, piping, USTs, etc.
3. Access roads and easements (water, sewer, utility, roadway)
4. Existing and/or proposed structures.
5. Sewage disposal systems or works carrying or containing sewage or industrial wastes within the vicinity of the proposed well
6. All perennial, seasonal, natural, or artificial water bodies or watercourses, if applicable

OWNER INFO:

Well Owner Name (Required): City of Santa Barbara Primary Phone (805) 564-5596

Owner Mailing Address: PO Box 1990, Santa Barbara, California 93102-1990
Street Number and Street Name City State/ Zip Code

Complete this section if the person coordinating this project is other than the Well Owner (e.g., driller, contractor, etc.)

Project Coordinator/Certified Professional Name: Cody Wilgus

Mailing Address: 209 East Victoria Street, Santa Barbara, California 93101
Street Number and Name City State / Zip Code

Primary Phone: (805) 644 - 4455 Email: cwilgus@rinconconsultants.com

WELL INFO:

Well Location: Ortega Park, 604 East Ortega Street, Santa Barbara, California 93103
Street Number and Street Name City State/ Zip Code

Well Location's Assessor's Parcel Number (APN): 0 3 1 - 1 7 2 - 0 0 2

Well Use: ☒ Ground Water Monitoring ☐ Vapor ☐ Other

Drilling Method: ☐ Hollow Stem Auger ☐ Mud Rotary ☐ Air Rotary ☐ Sonic ☒ Direct Push ☐ Other

Proposed Depth 4 ft.
Well Bore Diam. 3.25 in.
Screen Interval 0-4 ft bgs
Sealing Material
☐ Neat Cement ☒ Clay
☐ Cement Grout ☐ Concrete
Well ID # RB1-RB15 ~~xxxxx~~

Casing Information

Type: ☐ Steel ☒ PVC ☐ Other
Wall Thickness 0.113 Diameter 0.75 in. Annular Seal Depth ____ ft.
Additional Work Description: Advance sampling tool to groundwater, collect grab sample
If destruction by pressure grout, grout volume:

LEGAL DECLARATION

LICENSED CONTRACTOR DECLARATION

I hereby affirm that I am licensed under the provisions of Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code (B. & P.C.) as a well drilling contractor (C-57 license) and such license is in full force and effect.

Julius Carstens (Print Name of Driller) | Julius Carstens (Signature of Driller) | 4-8-19 (Date)

Lic. No.: 841350 Office Telephone 805-922-4772 Cell Phone: 805-570-4114

Business Name: Address

(Complete 'A' or 'B')

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☒ I have and will maintain workers' compensation insurance, as provided for by Section 3700 of the Labor Code, for the performance of work for which this permit is issued. My insurance carrier and policy number are:

Carrier CA Ju State Compensation Fund Ins Policy No. 9212499918

Applicant Signature Julius Carstens Date 4-8-19

B. CERTIFICATION OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

I certify that in the performance of work for which this permit is issued, I shall not employ any person in a manner so as to become subject to the Worker's Compensation Laws of California.

Applicant Signature Date

Notice to Applicant: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

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- ✓ The sealing of the annular space on a well;
- ✓ The destruction of wells;
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- ❖ **Final clearance of the well will be issued upon receipt of the driller's well log.**

Signed Cody Wilgus (Applicant (Print Name)) | Cody Wilgus (Applicant's Signature) Digitally signed by Cody Wilgus Date: 2019.04.08 15:06:04 -07'00' | 4/8/2019 (Date)

APPLICATION DISPOSITION: ☒ Approved ☐ Denied

Signed _____ (Environmental Health Specialist) 4/10/2019 (Date)

FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: MCB Date: 4/10/2019 Amt.$ 157.00 ☐ Cash ☐ Check # Visa

Receipt No.:#: 2120718

Permit Conditions: Notify EHS 48 hours in advance of fieldwork

Final Construction Approved by: TMR Date: 4/10/2019

Final Clearance by: TMR Date: 4/10/2019

HPS

Santa Barbara County PUBLIC Health DEPARTMENT

Environmental Health Services
225 Camino Del Remedio, Santa Barbara, CA. 93110 ◆(805) 681-4900
2125 S. Centerpointe Pkwy., #333 • Santa Maria, CA 93455-1340 ◆ (805) 346-8460

MONITORING WELL PERMIT APPLICATION

TYPE OF PERMIT (*Please check the appropriate box below*)

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FOR OFFICE USE ONLY
Rec'd Date: 4/9/2019
Rec'd By: TMR
Permit #: A19146
W/P #: 0003957
P/E #: 4687
Hazmat Site #: NA

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

1. Property lines
2. Below grade utilities, piping, USTs, etc.
3. Access roads and easements (water, sewer, utility, roadway)
4. Existing and/or proposed structures.
5. Sewage disposal systems or works carrying or containing sewage or industrial wastes within the vicinity of the proposed well
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Well Owner Name (Required): City of Santa Barbara Primary Phone (805) 564-5596

Owner Mailing Address: PO Box 1990, Santa Barbara, California 93102-1990
Street Number and Street Name City State/ Zip Code

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Project Coordinator/Certified Professional Name: Cody Wilgus

Mailing Address: 209 East Victoria Street, Santa Barbara, California 93101
Street Number and Name City State / Zip Code

Primary Phone: (805) 644 - 4455 Email: cwilgus@rinconconsultants.com

WELL INFO:

Well Location: Ortega Park, 604 East Ortega Street, Santa Barbara, California 93103
Street Number and Street Name City State/ Zip Code

Well Location's Assessor's Parcel Number (APN): 0 3 1 - 1 7 2 - 0 0 2

Well Use: ☒ Ground Water Monitoring ☐ Vapor ☐ Other _____

Drilling Method: ☐ Hollow Stem Auger ☐ Mud Rotary ☐ Air Rotary ☐ Sonic ☒ Direct Push ☐ Other _____

Proposed Depth 4 ft.
Well Bore Diam. 3.25 in.
Screen Interval 0-4 ft bgs

Sealing Material

☐ Neat Cement ☒ Clay
☐ Cement Grout ☐ Concrete
Well ID # ~~RB1-RB15~~ RB-2

Casing Information

Type: ☐ Steel ☒ PVC ☐ Other _____
Wall Thickness 0.113 Diameter 0.75 in. Annular Seal Depth _____ ft.
Additional Work Description Advance sampling tool to groundwater, collect grab sample
If destruction by pressure grout, grout volume: _____

LEGAL DECLARATION

LICENSED CONTRACTOR DECLARATION

I hereby affirm that I am licensed under the provisions of Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code (B. & P.C.) as a well drilling contractor (C-57 license) and such license is in full force and effect.

Julius Carstens (Print Name of Driller) | Julius Carstens (Signature of Driller) | 4-8-19 (Date)

Lic. No.: 841350 Office Telephone 805-922-4772 Cell Phone: 805-570-4114

Business Name: Address

(Complete 'A' or 'B')

A. WORKERS' COMPENSATION DECLARATION

I hereby affirm one of the following:

☐ I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

☒ I have and will maintain workers' compensation insurance, as provided for by Section 3700 of the Labor Code, for the performance of work for which this permit is issued. My insurance carrier and policy number are:

Carrier CA Ju State Compensation Fund Ins Policy No. 9212499918

Applicant Signature Julius Carstens Date 4-8-19

B. CERTIFICATION OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

I certify that in the performance of work for which this permit is issued, I shall not employ any person in a manner so as to become subject to the Worker's Compensation Laws of California.

Applicant Signature Date

Notice to Applicant: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

When signed by the Hazardous Materials Specialist or Professional Geologist, this application shall be deemed a permit only for the work described and is not a "permit for development" as that term is used in the California Subdivision Map Act. Please note additional permits (e.g., electrical installation, waste discharge requirements, land use clearance, grading, Santa Barbara City well permits) may also be required from other agencies. THIS PERMIT IS VALID FOR ONE YEAR FROM THE DATE OF ISSUANCE FOR THE WORK APPROVED HEREIN. No changes from the approved plan are permitted without prior written approval by Environmental Health Services (EHS). Final clearance will not be issued until all fees are paid and a copy of the drillers log is submitted to EHS.

I hereby agree to comply with all regulations of the County of Santa Barbara and California Well Standards pertaining to well construction, repair, modification, destruction and inactivation. The property owner, well driller, or agent will furnish EHS a copy of a completed well log upon completion of well construction, destruction, or modification.

I certify that I have read this application and declare under penalty of perjury that the information contained herein is true, correct and complete. I hereby authorize representatives of EHS to enter the premises for the purpose of inspecting the site and work described herein for compliance with county requirements.

REQUIRED INSPECTIONS / FINAL CLEARANCE: After permit approval, and prior to covering any components, an inspection must be scheduled directly with the approving Hazardous Materials Specialist or Professional Geologist at least two (2) business days in advance for:

- ✓ The sealing of the annular space on a well;
- ✓ The destruction of wells;
- ✓ Any operation stipulated on the permit to address special or unusual conditions.
- ❖ **Final clearance of the well will be issued upon receipt of the driller's well log.**

Signed Cody Wilgus (Applicant (Print Name)) | Cody Wilgus Digitally signed by Cody Wilgus Date: 2019.04.08 15:06:04 -07'00' (Applicant's Signature) | 4/8/2019 (Date)

APPLICATION DISPOSITION: ☒ Approved ☐ Denied

Signed _____ (Environmental Health Specialist) 4/10/2019 (Date)

FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: MCB Date: 4/10/2019 Amt.$ 157.00 ☐ Cash ☐ Check # Visa

Receipt No.:#: 2120718

Permit Conditions: Notify EHS 48 hours in advance of fieldwork

Final Construction Approved by: TMR Date: 4/10/2019

Final Clearance by: TMR Date: 4/10/2019

HPS

Santa Barbara County PUBLIC Health DEPARTMENT

Environmental Health Services
225 Camino Del Remedio, Santa Barbara, CA. 93110 ◆(805) 681-4900
2125 S. Centerpointe Pkwy., #333 • Santa Maria, CA 93455-1340 ◆ (805) 346-8460

MONITORING WELL PERMIT APPLICATION

TYPE OF PERMIT (*Please check the appropriate box below*)

☐ Construction or Modification	$629 (4 hrs) * first well $157 additional well	"Modification" means the deepening of a well, reperforation, sealing or replacement of well casing – construction of one completed well.
☒ Well Destruction	$471 (3 hrs) * first well $157 additional well	Abandonment – Complete filling of the well

* *An hourly rate fee of $157 will be added for those projects that require staff time in excess of that noted above. Final project approval will not be issued until all fees are paid.*

FOR OFFICE USE ONLY
Rec'd Date: 4/9/2019
Rec'd By: TMR
Permit #: A19147
W/P #: 0003958
P/E #: 4687
Hazmat Site #: NA

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

1. Property lines
2. Below grade utilities, piping, USTs, etc.
3. Access roads and easements (water, sewer, utility, roadway)
4. Existing and/or proposed structures.
5. Sewage disposal systems or works carrying or containing sewage or industrial wastes within the vicinity of the proposed well
6. All perennial, seasonal, natural, or artificial water bodies or watercourses, if applicable

OWNER INFO:

Well Owner Name (Required): City of Santa Barbara Primary Phone (805) 564-5596

Owner Mailing Address: PO Box 1990, Santa Barbara, California 93102-1990
Street Number and Street Name City State/ Zip Code

Complete this section if the person coordinating this project is other than the Well Owner (e.g., driller, contractor, etc.)

Project Coordinator/Certified Professional Name: Cody Wilgus

Mailing Address: 209 East Victoria Street, Santa Barbara, California 93101
Street Number and Name City State / Zip Code

Primary Phone: (805) 644 - 4455 Email: cwilgus@rinconconsultants.com

WELL INFO:

Well Location: Ortega Park, 604 East Ortega Street, Santa Barbara, California 93103
Street Number and Street Name City State/ Zip Code

Well Location's Assessor's Parcel Number (APN): 0 3 1 - 1 7 2 - 0 0 2

Well Use: ☒ Ground Water Monitoring ☐ Vapor ☐ Other _____

Drilling Method: ☐ Hollow Stem Auger ☐ Mud Rotary ☐ Air Rotary ☐ Sonic ☒ Direct Push ☐ Other _____

Proposed Depth 4 ft.
Well Bore Diam. 3.25 in.
Screen Interval 0-4 ft bgs
Sealing Material
☐ Neat Cement ☒ Clay
☐ Cement Grout ☐ Concrete
Well ID # ~~XXXXXXX~~ RB1-RB15 RB-3

Casing Information

Type: ☐ Steel ☒ PVC ☐ Other _____
Wall Thickness 0.113 Diameter 0.75 in. Annular Seal Depth _____ ft.
Additional Work Description: Advance sampling tool to groundwater, collect grab sample
If destruction by pressure grout, grout volume: _____

LEGAL DECLARATION

LICENSED CONTRACTOR DECLARATION

I hereby affirm that I am licensed under the provisions of Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code (B. & P.C.) as a well drilling contractor (C-57 license) and such license is in full force and effect.

Julius Carstens (Print Name of Driller) | Julius Carstens (Signature of Driller) | 4-8-19 (Date)

Lic. No.: 841350 Office Telephone 805-922-4772 Cell Phone: 805-570-4114

Business Name: Address

(Complete 'A' or 'B')

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I hereby affirm one of the following:

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☒ I have and will maintain workers' compensation insurance, as provided for by Section 3700 of the Labor Code, for the performance of work for which this permit is issued. My insurance carrier and policy number are:

Carrier CA Ju State Compensation Fund Ins Policy No. 9212499918

Applicant Signature Julius Carstens Date 4-8-19

B. CERTIFICATION OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

I certify that in the performance of work for which this permit is issued, I shall not employ any person in a manner so as to become subject to the Worker's Compensation Laws of California.

Applicant Signature Date

Notice to Applicant: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

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I hereby agree to comply with all regulations of the County of Santa Barbara and California Well Standards pertaining to well construction, repair, modification, destruction and inactivation. The property owner, well driller, or agent will furnish EHS a copy of a completed well log upon completion of well construction, destruction, or modification.

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- ✓ The sealing of the annular space on a well;
- ✓ The destruction of wells;
- ✓ Any operation stipulated on the permit to address special or unusual conditions.
- ❖ **Final clearance of the well will be issued upon receipt of the driller's well log.**

Signed Cody Wilgus (Applicant (Print Name)) | Cody Wilgus (Applicant's Signature) Digitally signed by Cody Wilgus Date: 2019.04.08 15:06:04 -07'00' | 4/8/2019 (Date)

APPLICATION DISPOSITION: ☒ Approved ☐ Denied

Signed _____ (Environmental Health Specialist) 4/10/2019 (Date)

FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: MCB Date: 4/10/2019 Amt.$ 157.00 ☐ Cash ☐ Check # Visa

Receipt No.:#: 2120718

Permit Conditions: Notify EHS 48 hours in advance of fieldwork

Final Construction Approved by: TMR Date: 4/10/2019

Final Clearance by: TMR Date: 4/10/2019

HPS

Santa Barbara County PUBLIC Health DEPARTMENT

Environmental Health Services
225 Camino Del Remedio, Santa Barbara, CA. 93110 ◆(805) 681-4900
2125 S. Centerpointe Pkwy., #333 • Santa Maria, CA 93455-1340 ◆ (805) 346-8460

MONITORING WELL PERMIT APPLICATION

TYPE OF PERMIT (*Please check the appropriate box below*)

☐ Construction or Modification	$629 (4 hrs) * first well $157 additional well	"Modification" means the deepening of a well, reperforation, sealing or replacement of well casing – construction of one completed well.
☒ Well Destruction	$471 (3 hrs) * first well $157 additional well	Abandonment – Complete filling of the well

* *An hourly rate fee of $157 will be added for those projects that require staff time in excess of that noted above. Final project approval will not be issued until all fees are paid.*

FOR OFFICE USE ONLY
Rec'd Date: 4/9/2019
Rec'd By: TMR
Permit #: A19148
W/P #: 0003959
P/E #: 4687
Hazmat Site #: NA

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

1. Property lines
2. Below grade utilities, piping, USTs, etc.
3. Access roads and easements (water, sewer, utility, roadway)
4. Existing and/or proposed structures.
5. Sewage disposal systems or works carrying or containing sewage or industrial wastes within the vicinity of the proposed well
6. All perennial, seasonal, natural, or artificial water bodies or watercourses, if applicable

OWNER INFO:

Well Owner Name (Required): City of Santa Barbara Primary Phone (805) 564-5596

Owner Mailing Address: PO Box 1990, Santa Barbara, California 93102-1990
Street Number and Street Name City State/ Zip Code

Complete this section if the person coordinating this project is other than the Well Owner (e.g., driller, contractor, etc.)

Project Coordinator/Certified Professional Name: Cody Wilgus

Mailing Address: 209 East Victoria Street, Santa Barbara, California 93101
Street Number and Name City State / Zip Code

Primary Phone: (805) 644 - 4455 Email: cwilgus@rinconconsultants.com

WELL INFO:

Well Location: Ortega Park, 604 East Ortega Street, Santa Barbara, California 93103
Street Number and Street Name City State/ Zip Code

Well Location's Assessor's Parcel Number (APN): 0 3 1 - 1 7 2 - 0 0 2

Well Use: ☒ Ground Water Monitoring ☐ Vapor ☐ Other

Drilling Method: ☐ Hollow Stem Auger ☐ Mud Rotary ☐ Air Rotary ☐ Sonic ☒ Direct Push ☐ Other

Proposed Depth 4 ft.
Well Bore Diam. 3.25 in.
Screen Interval 0-4 ft bgs
Sealing Material
☐ Neat Cement ☒ Clay
☐ Cement Grout ☐ Concrete
Well ID # ~~XXXXXXXX~~ ~~RB1-RB15~~ RB-4

Casing Information

Type: ☐ Steel ☒ PVC ☐ Other
Wall Thickness 0.113 Diameter 0.75 in. Annular Seal Depth ft.
Additional Work Description: Advance sampling tool to groundwater, collect grab sample
If destruction by pressure grout, grout volume:

LEGAL DECLARATION

LICENSED CONTRACTOR DECLARATION

I hereby affirm that I am licensed under the provisions of Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code (B. & P.C.) as a well drilling contractor (C-57 license) and such license is in full force and effect.

Julius Caerstens — Print Name of Driller | Julius Caerstens — Signature of Driller | 4-8-19 — Date

Lic. No.: 841350 Office Telephone 805-922-4772 Cell Phone: 805-570-4114

Business Name: Address

(Complete 'A' or 'B')

A. WORKERS' COMPENSATION DECLARATION

I hereby affirm one of the following:

☒ I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

☐ I have and will maintain workers' compensation insurance, as provided for by Section 3700 of the Labor Code, for the performance of work for which this permit is issued. My insurance carrier and policy number are:

Carrier State Compensation Ins Fund Policy No. 9212499918

Applicant Signature Julius Caerstens Date 4-8-19

B. CERTIFICATION OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

I certify that in the performance of work for which this permit is issued, I shall not employ any person in a manner so as to become subject to the Worker's Compensation Laws of California.

Applicant Signature _____ Date _____

Notice to Applicant: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

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I hereby agree to comply with all regulations of the County of Santa Barbara and California Well Standards pertaining to well construction, repair, modification, destruction and inactivation. The property owner, well driller, or agent will furnish EHS a copy of a completed well log upon completion of well construction, destruction, or modification.

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- ✓ The sealing of the annular space on a well;
- ✓ The destruction of wells;
- ✓ Any operation stipulated on the permit to address special or unusual conditions.
- ❖ **Final clearance of the well will be issued upon receipt of the driller's well log.**

Signed Cody Wilgus — Applicant (Print Name) | Cody Wilgus — Applicant's Signature | Digitally signed by Cody Wilgus Date: 2019.04.08 15:08:04 -07'00' | 4/8/2019 — Date

APPLICATION DISPOSITION: ☒ **Approved** ☐ **Denied**

Signed _____ — Environmental Health Specialist | 4/10/2019 — Date

FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: MCB Date: 4/10/2019 Amt.$ No Fee ☐ Cash ☐ Check # N/A

Receipt No.:#: N/A

Permit Conditions: Notify EHS 48 hours in advance of fieldwork

Final Construction Approved by: TMR Date: 4/10/2019

Final Clearance by: TMR Date: 4/10/2019

HPS

Santa Barbara County PUBLIC Health DEPARTMENT

Environmental Health Services
225 Camino Del Remedio, Santa Barbara, CA. 93110 ◆(805) 681-4900
2125 S. Centerpointe Pkwy., #333 • Santa Maria, CA 93455-1340 ◆ (805) 346-8460

MONITORING WELL PERMIT APPLICATION

TYPE OF PERMIT (*Please check the appropriate box below*)

☐ Construction or Modification	$629 (4 hrs) * first well $157 additional well	"Modification" means the deepening of a well, reperforation, sealing or replacement of well casing – construction of one completed well.
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* *An hourly rate fee of $157 will be added for those projects that require staff time in excess of that noted above. Final project approval will not be issued until all fees are paid.*

FOR OFFICE USE ONLY
Rec'd Date: 4/9/2019
Rec'd By: TMR
Permit #: A19149
W/P #: 0003960
P/E #: 4687
Hazmat Site #: NA

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

1. Property lines
2. Below grade utilities, piping, USTs, etc.
3. Access roads and easements (water, sewer, utility, roadway)
4. Existing and/or proposed structures.
5. Sewage disposal systems or works carrying or containing sewage or industrial wastes within the vicinity of the proposed well
6. All perennial, seasonal, natural, or artificial water bodies or watercourses, if applicable

OWNER INFO:

Well Owner Name (Required): City of Santa Barbara Primary Phone (805) 564-5596

Owner Mailing Address: PO Box 1990, Santa Barbara, California 93102-1990
Street Number and Street Name City State/ Zip Code

Complete this section if the person coordinating this project is other than the Well Owner (e.g., driller, contractor, etc.)

Project Coordinator/Certified Professional Name: Cody Wilgus

Mailing Address: 209 East Victoria Street, Santa Barbara, California 93101
Street Number and Name City State / Zip Code

Primary Phone: (805) 644 - 4455 Email: cwilgus@rinconconsultants.com

WELL INFO:

Well Location: Ortega Park, 604 East Ortega Street, Santa Barbara, California 93103
Street Number and Street Name City State/ Zip Code

Well Location's Assessor's Parcel Number (APN): 0 3 1 - 1 7 2 - 0 0 2

Well Use: ☒ Ground Water Monitoring ☐ Vapor ☐ Other

Drilling Method: ☐ Hollow Stem Auger ☐ Mud Rotary ☐ Air Rotary ☐ Sonic ☒ Direct Push ☐ Other

Proposed Depth 4 ft.
Well Bore Diam. 3.25 in.
Screen Interval 0-4 ft bgs

Sealing Material

☐ Neat Cement ☒ Clay
☐ Cement Grout ☐ Concrete
Well ID # ~~XXXXXXXX~~ RB1-RB15 RB-5

Casing Information

Type: ☐ Steel ☒ PVC ☐ Other
Wall Thickness 0.113 Diameter 0.75 in. Annular Seal Depth ft.
Additional Work Description Advance sampling tool to groundwater, collect grab sample

If destruction by pressure grout, grout volume:

LEGAL DECLARATION

LICENSED CONTRACTOR DECLARATION

I hereby affirm that I am licensed under the provisions of Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code (B. & P.C.) as a well drilling contractor (C-57 license) and such license is in full force and effect.

Julius Caerstens — Print Name of Driller | Julius Caerstens — Signature of Driller | 4-8-19 — Date

Lic. No.: 841350 Office Telephone 805-922-4772 Cell Phone: 805-570-4114

Business Name: Address

(Complete 'A' or 'B')

A. WORKERS' COMPENSATION DECLARATION

I hereby affirm one of the following:

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☐ I have and will maintain workers' compensation insurance, as provided for by Section 3700 of the Labor Code, for the performance of work for which this permit is issued. My insurance carrier and policy number are:

Carrier State Compensation Ins Fund Policy No. 9212499918

Applicant Signature Julius Caerstens Date 4-8-19

B. CERTIFICATION OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

I certify that in the performance of work for which this permit is issued, I shall not employ any person in a manner so as to become subject to the Worker's Compensation Laws of California.

Applicant Signature _____ Date _____

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APPLICATION DISPOSITION: ☒ Approved ☐ Denied

Signed _____ — Environmental Health Specialist | 4/10/2019 — Date

FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: MCB Date: 4/10/2019 Amt.$ No Fee ☐ Cash ☐ Check # N/A

Receipt No.#: N/A

Permit Conditions: Notify EHS 48 hours in advance of fieldwork

Final Construction Approved by: TMR Date: 4/10/2019

Final Clearance by: TMR Date: 4/10/2019

HPS

Santa Barbara County PUBLIC Health DEPARTMENT

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MONITORING WELL PERMIT APPLICATION

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FOR OFFICE USE ONLY
Rec'd Date: 4/9/2019
Rec'd By: TMR
Permit #: A19150
W/P #: 0003961
P/E #: 4687
Hazmat Site #: NA

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

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2. Below grade utilities, piping, USTs, etc.
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Well Use: ☒ Ground Water Monitoring ☐ Vapor ☐ Other

Drilling Method: ☐ Hollow Stem Auger ☐ Mud Rotary ☐ Air Rotary ☐ Sonic ☒ Direct Push ☐ Other

Proposed Depth 4 ft.
Well Bore Diam. 3.25 in.
Screen Interval 0-4 ft bgs

Sealing Material

☐ Neat Cement ☒ Clay
☐ Cement Grout ☐ Concrete
Well ID # ~~RB1-RB15~~ RB-6

Casing Information

Type: ☐ Steel ☒ PVC ☐ Other
Wall Thickness 0.113 Diameter 0.75 in. Annular Seal Depth ft.
Additional Work Description Advance sampling tool to groundwater, collect grab sample
If destruction by pressure grout, grout volume:

LEGAL DECLARATION

LICENSED CONTRACTOR DECLARATION

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Julius Caerstens — Print Name of Driller | Julius Caerstens — Signature of Driller | 4-8-19 — Date

Lic. No.: 841350 Office Telephone 805-922-4772 Cell Phone: 805-570-4114

Business Name: Address

(Complete 'A' or 'B')

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Carrier State Compensation Ins Fund Policy No. 9212499918

Applicant Signature Julius Caerstens Date 4-8-19

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Applicant Signature _____ Date _____

Notice to Applicant: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

When signed by the Hazardous Materials Specialist or Professional Geologist, this application shall be deemed a permit only for the work described and is not a "permit for development" as that term is used in the California Subdivision Map Act. Please note additional permits (e.g., electrical installation, waste discharge requirements, land use clearance, grading, Santa Barbara City well permits) may also be required from other agencies. THIS PERMIT IS VALID FOR ONE YEAR FROM THE DATE OF ISSUANCE FOR THE WORK APPROVED HEREIN. No changes from the approved plan are permitted without prior written approval by Environmental Health Services (EHS). Final clearance will not be issued until all fees are paid and a copy of the drillers log is submitted to EHS.

I hereby agree to comply with all regulations of the County of Santa Barbara and California Well Standards pertaining to well construction, repair, modification, destruction and inactivation. The property owner, well driller, or agent will furnish EHS a copy of a completed well log upon completion of well construction, destruction, or modification.

I certify that I have read this application and declare under penalty of perjury that the information contained herein is true, correct and complete. I hereby authorize representatives of EHS to enter the premises for the purpose of inspecting the site and work described herein for compliance with county requirements.

REQUIRED INSPECTIONS / FINAL CLEARANCE: After permit approval, and prior to covering any components, an inspection must be scheduled directly with the approving Hazardous Materials Specialist or Professional Geologist at least two (2) business days in advance for:

- ✓ The sealing of the annular space on a well;
- ✓ The destruction of wells;
- ✓ Any operation stipulated on the permit to address special or unusual conditions.
- ❖ **Final clearance of the well will be issued upon receipt of the driller's well log.**

Signed Cody Wilgus — Applicant (Print Name) | Cody Wilgus — Applicant's Signature | Digitally signed by Cody Wilgus Date: 2019.04.08 15:08:04 -07'00' | 4/8/2019 — Date

APPLICATION DISPOSITION: ☒ **Approved** ☐ **Denied**

Signed _____ — Environmental Health Specialist | 4/10/2019 — Date

FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: MCB Date: 4/10/2019 Amt.$ No Fee ☐ Cash ☐ Check # N/A

Receipt No.#: N/A

Permit Conditions: Notify EHS 48 hours in advance of fieldwork

Final Construction Approved by: TMR Date: 4/10/2019

Final Clearance by: TMR Date: 4/10/2019

HPS

Santa Barbara County PUBLIC Health DEPARTMENT

Environmental Health Services
225 Camino Del Remedio, Santa Barbara, CA. 93110 ◆(805) 681-4900
2125 S. Centerpointe Pkwy., #333 • Santa Maria, CA 93455-1340 ◆ (805) 346-8460

MONITORING WELL PERMIT APPLICATION

TYPE OF PERMIT (*Please check the appropriate box below*)

☐ Construction or Modification	$629 (4 hrs) * first well $157 additional well	"Modification" means the deepening of a well, reperforation, sealing or replacement of well casing – construction of one completed well.
☒ Well Destruction	$471 (3 hrs) * first well $157 additional well	Abandonment – Complete filling of the well

* *An hourly rate fee of $157 will be added for those projects that require staff time in excess of that noted above. Final project approval will not be issued until all fees are paid.*

FOR OFFICE USE ONLY
Rec'd Date: 4/9/2019
Rec'd By: TMR
Permit #: A19151
W/P #: 0003962
P/E #: 4687
Hazmat Site #: NA

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

1. Property lines
2. Below grade utilities, piping, USTs, etc.
3. Access roads and easements (water, sewer, utility, roadway)
4. Existing and/or proposed structures.
5. Sewage disposal systems or works carrying or containing sewage or industrial wastes within the vicinity of the proposed well
6. All perennial, seasonal, natural, or artificial water bodies or watercourses, if applicable

OWNER INFO:

Well Owner Name (Required): City of Santa Barbara Primary Phone (805) 564-5596

Owner Mailing Address: PO Box 1990, Santa Barbara, California 93102-1990
Street Number and Street Name City State/ Zip Code

Complete this section if the person coordinating this project is other than the Well Owner (e.g., driller, contractor, etc.)

Project Coordinator/Certified Professional Name: Cody Wilgus

Mailing Address: 209 East Victoria Street, Santa Barbara, California 93101
Street Number and Name City State / Zip Code

Primary Phone: (805) 644 - 4455 Email: cwilgus@rinconconsultants.com

WELL INFO:

Well Location: Ortega Park, 604 East Ortega Street, Santa Barbara, California 93103
Street Number and Street Name City State/ Zip Code

Well Location's Assessor's Parcel Number (APN): 0 3 1 - 1 7 2 - 0 0 2

Well Use: ☒ Ground Water Monitoring ☐ Vapor ☐ Other

Drilling Method: ☐ Hollow Stem Auger ☐ Mud Rotary ☐ Air Rotary ☐ Sonic ☒ Direct Push ☐ Other

Proposed Depth 4 ft.
Well Bore Diam. 3.25 in.
Screen Interval 0-4 ft bgs

Sealing Material

☐ Neat Cement ☒ Clay
☐ Cement Grout ☐ Concrete
Well ID # ~~RB1-RB15~~RB-7

Casing Information

Type: ☐ Steel ☒ PVC ☐ Other
Wall Thickness 0.113 Diameter 0.75 in. Annular Seal Depth ft.
Additional Work Description Advance sampling tool to groundwater, collect grab sample
If destruction by pressure grout, grout volume:

LEGAL DECLARATION

LICENSED CONTRACTOR DECLARATION

I hereby affirm that I am licensed under the provisions of Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code (B. & P.C.) as a well drilling contractor (C-57 license) and such license is in full force and effect.

Julius Caerstens — Print Name of Driller | Julius Caerstens — Signature of Driller | 4-8-19 — Date

Lic. No.: 841350 Office Telephone 805-922-4772 Cell Phone: 805-570-4114

Business Name: Address

(Complete 'A' or 'B')

A. WORKERS' COMPENSATION DECLARATION

I hereby affirm one of the following:

☒ I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

☐ I have and will maintain workers' compensation insurance, as provided for by Section 3700 of the Labor Code, for the performance of work for which this permit is issued. My insurance carrier and policy number are:

Carrier State Compensation Ins Fund Policy No. 9212499918

Applicant Signature Julius Caerstens Date 4-8-19

B. CERTIFICATION OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

I certify that in the performance of work for which this permit is issued, I shall not employ any person in a manner so as to become subject to the Worker's Compensation Laws of California.

Applicant Signature _____ Date _____

Notice to Applicant: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

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- ✓ The destruction of wells;
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Signed Cody Wilgus — Applicant (Print Name) | Cody Wilgus — Applicant's Signature | Digitally signed by Cody Wilgus Date: 2019.04.08 15:08:04 -07'00' | 4/8/2019 — Date

APPLICATION DISPOSITION: ☒ **Approved** ☐ **Denied**

Signed _____ — Environmental Health Specialist | 4/10/2019 — Date

FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: MCB Date: 4/10/2019 Amt.$ No Fee ☐ Cash ☐ Check # N/A

Receipt No.:#: N/A

Permit Conditions: Notify EHS 48 hours in advance of fieldwork

Final Construction Approved by: TMR Date: 4/10/2019

Final Clearance by: TMR Date: 4/10/2019

HPS

Santa Barbara County PUBLIC Health DEPARTMENT

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2125 S. Centerpointe Pkwy., #333 • Santa Maria, CA 93455-1340 ◆ (805) 346-8460

MONITORING WELL PERMIT APPLICATION

TYPE OF PERMIT (*Please check the appropriate box below*)

☐ Construction or Modification	$629 (4 hrs) * first well $157 additional well	"Modification" means the deepening of a well, reperforation, sealing or replacement of well casing – construction of one completed well.
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* *An hourly rate fee of $157 will be added for those projects that require staff time in excess of that noted above. Final project approval will not be issued until all fees are paid.*

FOR OFFICE USE ONLY
Rec'd Date: 4/9/2019
Rec'd By: TMR
Permit #: A19152
W/P #: 0003963
P/E #: 4687
Hazmat Site #: NA

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

1. Property lines
2. Below grade utilities, piping, USTs, etc.
3. Access roads and easements (water, sewer, utility, roadway)
4. Existing and/or proposed structures.
5. Sewage disposal systems or works carrying or containing sewage or industrial wastes within the vicinity of the proposed well
6. All perennial, seasonal, natural, or artificial water bodies or watercourses, if applicable

OWNER INFO:

Well Owner Name (Required): City of Santa Barbara Primary Phone (805) 564-5596

Owner Mailing Address: PO Box 1990, Santa Barbara, California 93102-1990
Street Number and Street Name City State/ Zip Code

Complete this section if the person coordinating this project is other than the Well Owner (e.g., driller, contractor, etc.)

Project Coordinator/Certified Professional Name: Cody Wilgus

Mailing Address: 209 East Victoria Street, Santa Barbara, California 93101
Street Number and Name City State / Zip Code

Primary Phone: (805) 644 - 4455 Email: cwilgus@rinconconsultants.com

WELL INFO:

Well Location: Ortega Park, 604 East Ortega Street, Santa Barbara, California 93103
Street Number and Street Name City State/ Zip Code

Well Location's Assessor's Parcel Number (APN): 0 3 1 - 1 7 2 - 0 0 2

Well Use: ☒ Ground Water Monitoring ☐ Vapor ☐ Other _____

Drilling Method: ☐ Hollow Stem Auger ☐ Mud Rotary ☐ Air Rotary ☐ Sonic ☒ Direct Push ☐ Other _____

Proposed Depth 4 ft.
Well Bore Diam. 3.25 in.
Screen Interval 0-4 ft bgs

Sealing Material

☐ Neat Cement ☒ Clay
☐ Cement Grout ☐ Concrete
Well ID # ~~RB1-RB15~~ RB-8

Casing Information

Type: ☐ Steel ☒ PVC ☐ Other _____
Wall Thickness 0.113 Diameter 0.75 in. Annular Seal Depth _____ ft.
Additional Work Description Advance sampling tool to groundwater, collect grab sample
If destruction by pressure grout, grout volume: _____

LEGAL DECLARATION

LICENSED CONTRACTOR DECLARATION

I hereby affirm that I am licensed under the provisions of Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code (B. & P.C.) as a well drilling contractor (C-57 license) and such license is in full force and effect.

Julius Caerstens — Print Name of Driller | Julius Caerstens — Signature of Driller | 4-8-19 — Date

Lic. No.: 841350 Office Telephone 805-922-4772 Cell Phone: 805-570-4114

Business Name: Address

(Complete 'A' or 'B')

A. WORKERS' COMPENSATION DECLARATION

I hereby affirm one of the following:

☒ I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

☐ I have and will maintain workers' compensation insurance, as provided for by Section 3700 of the Labor Code, for the performance of work for which this permit is issued. My insurance carrier and policy number are:

Carrier State Compensation Ins Fund Policy No. 9212499918

Applicant Signature Julius Caerstens Date 4-8-19

B. CERTIFICATION OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

I certify that in the performance of work for which this permit is issued, I shall not employ any person in a manner so as to become subject to the Worker's Compensation Laws of California.

Applicant Signature _____ Date _____

Notice to Applicant: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

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I hereby agree to comply with all regulations of the County of Santa Barbara and California Well Standards pertaining to well construction, repair, modification, destruction and inactivation. The property owner, well driller, or agent will furnish EHS a copy of a completed well log upon completion of well construction, destruction, or modification.

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- ✓ The destruction of wells;
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Signed Cody Wilgus — Applicant (Print Name) | Cody Wilgus — Applicant's Signature | Digitally signed by Cody Wilgus Date: 2019.04.08 15:08:04 -07'00' | 4/8/2019 — Date

APPLICATION DISPOSITION: ☒ **Approved** ☐ **Denied**

Signed _____ — Environmental Health Specialist | 4/10/2019 — Date

FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: MCB Date: 4/10/2019 Amt.$ No Fee ☐ Cash ☐ Check # N/A

Receipt No.:#: N/A

Permit Conditions: Notify EHS 48 hours in advance of fieldwork

Final Construction Approved by: TMR Date: 4/10/2019

Final Clearance by: TMR Date: 4/10/2019

HPS

Santa Barbara County PUBLIC Health DEPARTMENT

Environmental Health Services
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MONITORING WELL PERMIT APPLICATION

TYPE OF PERMIT (*Please check the appropriate box below*)

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FOR OFFICE USE ONLY
Rec'd Date: 4/9/2019
Rec'd By: TMR
Permit #: A19153
W/P #: 00003964
P/E #: 4687
Hazmat Site #: NA

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

1. Property lines
2. Below grade utilities, piping, USTs, etc.
3. Access roads and easements (water, sewer, utility, roadway)
4. Existing and/or proposed structures.
5. Sewage disposal systems or works carrying or containing sewage or industrial wastes within the vicinity of the proposed well
6. All perennial, seasonal, natural, or artificial water bodies or watercourses, if applicable

OWNER INFO:

Well Owner Name (Required): City of Santa Barbara Primary Phone (805) 564-5596

Owner Mailing Address: PO Box 1990, Santa Barbara, California 93102-1990
Street Number and Street Name City State/ Zip Code

Complete this section if the person coordinating this project is other than the Well Owner (e.g., driller, contractor, etc.)

Project Coordinator/Certified Professional Name: Cody Wilgus

Mailing Address: 209 East Victoria Street, Santa Barbara, California 93101
Street Number and Name City State / Zip Code

Primary Phone: (805) 644 - 4455 Email: cwilgus@rinconconsultants.com

WELL INFO:

Well Location: Ortega Park, 604 East Ortega Street, Santa Barbara, California 93103
Street Number and Street Name City State/ Zip Code

Well Location's Assessor's Parcel Number (APN): 0 3 1 - 1 7 2 - 0 0 2

Well Use: ☒ Ground Water Monitoring ☐ Vapor ☐ Other

Drilling Method: ☐ Hollow Stem Auger ☐ Mud Rotary ☐ Air Rotary ☐ Sonic ☒ Direct Push ☐ Other

Proposed Depth 4 ft.
Well Bore Diam. 3.25 in.
Screen Interval 0-4 ft bgs

Sealing Material

☐ Neat Cement ☒ Clay
☐ Cement Grout ☐ Concrete
Well ID # ~~RB1-RB15~~ RB-9

Casing Information

Type: ☐ Steel ☒ PVC ☐ Other
Wall Thickness 0.113 Diameter 0.75 in. Annular Seal Depth ft.
Additional Work Description Advance sampling tool to groundwater, collect grab sample
If destruction by pressure grout, grout volume:

LEGAL DECLARATION

LICENSED CONTRACTOR DECLARATION

I hereby affirm that I am licensed under the provisions of Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code (B. & P.C.) as a well drilling contractor (C-57 license) and such license is in full force and effect.

Julius Caerstens — Print Name of Driller | Julius Caerstens — Signature of Driller | 4-8-19 — Date

Lic. No.: 841350 Office Telephone 805-922-4772 Cell Phone: 805-570-4114

Business Name: Address

(Complete 'A' or 'B')

A. WORKERS' COMPENSATION DECLARATION

I hereby affirm one of the following:

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☐ I have and will maintain workers' compensation insurance, as provided for by Section 3700 of the Labor Code, for the performance of work for which this permit is issued. My insurance carrier and policy number are:

Carrier State Compensation Ins Fund Policy No. 9212499918

Applicant Signature Julius Caerstens Date 4-8-19

B. CERTIFICATION OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

I certify that in the performance of work for which this permit is issued, I shall not employ any person in a manner so as to become subject to the Worker's Compensation Laws of California.

Applicant Signature _____ Date _____

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APPLICATION DISPOSITION: ☒ **Approved** ☐ **Denied**

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FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: MCB Date: 4/10/2019 Amt.$ No Fee ☐ Cash ☐ Check # N/A

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HPS

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MONITORING WELL PERMIT APPLICATION

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FOR OFFICE USE ONLY
Rec'd Date: 4/9/2019
Rec'd By: TMR
Permit #: A19154
W/P #: 00003965
P/E #: 4687
Hazmat Site #: NA

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

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Proposed Depth 4 ft.
Well Bore Diam. 3.25 in.
Screen Interval 0-4 ft bgs

Sealing Material

☐ Neat Cement ☒ Clay
☐ Cement Grout ☐ Concrete
Well ID # ~~XXXXXXX~~ RB1-RB15 RB-10

Casing Information

Type: ☐ Steel ☒ PVC ☐ Other
Wall Thickness 0.113 Diameter 0.75 in. Annular Seal Depth ft.
Additional Work Description Advance sampling tool to groundwater, collect grab sample
If destruction by pressure grout, grout volume:

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APPLICATION DISPOSITION: ☑ Approved ☐ Denied

Signed _____ — Environmental Health Specialist | 4/10/2019 — Date

FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: MCB Date: 4/10/2019 Amt.$ No Fee ☐ Cash ☐ Check # N/A

Receipt No.#: N/A

Permit Conditions: Notify EHS 48 hours in advance of fieldwork

Final Construction Approved by: TMR Date: 4/10/2019

Final Clearance by: TMR Date: 4/10/2019

HPS

Santa Barbara County PUBLIC Health DEPARTMENT

Environmental Health Services
225 Camino Del Remedio, Santa Barbara, CA. 93110 ◆(805) 681-4900
2125 S. Centerpointe Pkwy., #333 • Santa Maria, CA 93455-1340 ◆ (805) 346-8460

MONITORING WELL PERMIT APPLICATION

TYPE OF PERMIT (*Please check the appropriate box below*)

☐ Construction or Modification	$629 (4 hrs) * first well $157 additional well	"Modification" means the deepening of a well, reperforation, sealing or replacement of well casing – construction of one completed well.
☒ Well Destruction	$471 (3 hrs) * first well $157 additional well	Abandonment – Complete filling of the well

* *An hourly rate fee of $157 will be added for those projects that require staff time in excess of that noted above. Final project approval will not be issued until all fees are paid.*

FOR OFFICE USE ONLY
Rec'd Date: 4/9/2019
Rec'd By: TMR
Permit #: A19155
W/P #: 0003967
P/E #: 4687
Hazmat Site #: NA

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

1. Property lines
2. Below grade utilities, piping, USTs, etc.
3. Access roads and easements (water, sewer, utility, roadway)
4. Existing and/or proposed structures.
5. Sewage disposal systems or works carrying or containing sewage or industrial wastes within the vicinity of the proposed well
6. All perennial, seasonal, natural, or artificial water bodies or watercourses, if applicable

OWNER INFO:

Well Owner Name (Required): City of Santa Barbara Primary Phone (805) 564-5596

Owner Mailing Address: PO Box 1990, Santa Barbara, California 93102-1990
Street Number and Street Name City State/ Zip Code

Complete this section if the person coordinating this project is other than the Well Owner (e.g., driller, contractor, etc.)

Project Coordinator/Certified Professional Name: Cody Wilgus

Mailing Address: 209 East Victoria Street, Santa Barbara, California 93101
Street Number and Name City State / Zip Code

Primary Phone: (805) 644 - 4455 Email: cwilgus@rinconconsultants.com

WELL INFO:

Well Location: Ortega Park, 604 East Ortega Street, Santa Barbara, California 93103
Street Number and Street Name City State/ Zip Code

Well Location's Assessor's Parcel Number (APN): 0 3 1 - 1 7 2 - 0 0 2

Well Use: ☒ Ground Water Monitoring ☐ Vapor ☐ Other

Drilling Method: ☐ Hollow Stem Auger ☐ Mud Rotary ☐ Air Rotary ☐ Sonic ☒ Direct Push ☐ Other

Proposed Depth 4 ft.
Well Bore Diam. 3.25 in.
Screen Interval 0-4 ft bgs

Sealing Material

☐ Neat Cement ☒ Clay
☐ Cement Grout ☐ Concrete
Well ID # ~~XXXXXXX~~ RB1-RB15 RB-11

Casing Information

Type: ☐ Steel ☒ PVC ☐ Other
Wall Thickness 0.113 Diameter 0.75 in. Annular Seal Depth ft.
Additional Work Description Advance sampling tool to groundwater, collect grab sample
If destruction by pressure grout, grout volume:

LEGAL DECLARATION

LICENSED CONTRACTOR DECLARATION

I hereby affirm that I am licensed under the provisions of Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code (B. & P.C.) as a well drilling contractor (C-57 license) and such license is in full force and effect.

Julius Caerstens — Print Name of Driller | Julius Caerstens — Signature of Driller | 4-8-19 — Date

Lic. No.: 841350 Office Telephone 805-922-4772 Cell Phone: 805-570-4114

Business Name: Address

(Complete 'A' or 'B')

A. WORKERS' COMPENSATION DECLARATION

I hereby affirm one of the following:

☒ I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

☐ I have and will maintain workers' compensation insurance, as provided for by Section 3700 of the Labor Code, for the performance of work for which this permit is issued. My insurance carrier and policy number are:

Carrier State Compensation Ins Fund Policy No. 9212499918

Applicant Signature Julius Caerstens Date 4-8-19

B. CERTIFICATION OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

I certify that in the performance of work for which this permit is issued, I shall not employ any person in a manner so as to become subject to the Worker's Compensation Laws of California.

Applicant Signature _____ Date _____

Notice to Applicant: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

When signed by the Hazardous Materials Specialist or Professional Geologist, this application shall be deemed a permit only for the work described and is not a "permit for development" as that term is used in the California Subdivision Map Act. Please note additional permits (e.g., electrical installation, waste discharge requirements, land use clearance, grading, Santa Barbara City well permits) may also be required from other agencies. THIS PERMIT IS VALID FOR ONE YEAR FROM THE DATE OF ISSUANCE FOR THE WORK APPROVED HEREIN. No changes from the approved plan are permitted without prior written approval by Environmental Health Services (EHS). Final clearance will not be issued until all fees are paid and a copy of the drillers log is submitted to EHS.

I hereby agree to comply with all regulations of the County of Santa Barbara and California Well Standards pertaining to well construction, repair, modification, destruction and inactivation. The property owner, well driller, or agent will furnish EHS a copy of a completed well log upon completion of well construction, destruction, or modification.

I certify that I have read this application and declare under penalty of perjury that the information contained herein is true, correct and complete. I hereby authorize representatives of EHS to enter the premises for the purpose of inspecting the site and work described herein for compliance with county requirements.

REQUIRED INSPECTIONS / FINAL CLEARANCE: After permit approval, and prior to covering any components, an inspection must be scheduled directly with the approving Hazardous Materials Specialist or Professional Geologist at least two (2) business days in advance for:

- ✓ The sealing of the annular space on a well;
- ✓ The destruction of wells;
- ✓ Any operation stipulated on the permit to address special or unusual conditions.
- ❖ **Final clearance of the well will be issued upon receipt of the driller's well log.**

Signed Cody Wilgus — Applicant (Print Name) | Cody Wilgus — Applicant's Signature | Digitally signed by Cody Wilgus Date: 2019.04.08 15:08:04 -07'00' | 4/8/2019 — Date

APPLICATION DISPOSITION: ☑ Approved ☐ Denied

Signed _____ — Environmental Health Specialist | 4/10/2019 — Date

FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: MCB Date: 4/10/2019 Amt.$ No Fee ☐ Cash ☐ Check # N/A

Receipt No.#: N/A

Permit Conditions: Notify EHS 48 hours in advance of fieldwork

Final Construction Approved by: TMR Date: 4/10/2019

Final Clearance by: TMR Date: 4/10/2019

HPS

Santa Barbara County PUBLIC Health DEPARTMENT

Environmental Health Services
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2125 S. Centerpointe Pkwy., #333 • Santa Maria, CA 93455-1340 ◆ (805) 346-8460

MONITORING WELL PERMIT APPLICATION

TYPE OF PERMIT (*Please check the appropriate box below*)

☐ Construction or Modification	$629 (4 hrs) * first well $157 additional well	"Modification" means the deepening of a well, reperforation, sealing or replacement of well casing – construction of one completed well.
☒ Well Destruction	$471 (3 hrs) * first well $157 additional well	Abandonment – Complete filling of the well

* *An hourly rate fee of $157 will be added for those projects that require staff time in excess of that noted above. Final project approval will not be issued until all fees are paid.*

FOR OFFICE USE ONLY
Rec'd Date: 4/9/2019
Rec'd By: TMR
Permit #: A19156
W/P #: 0003967
P/E #: 4687
Hazmat Site #: NA

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

1. Property lines
2. Below grade utilities, piping, USTs, etc.
3. Access roads and easements (water, sewer, utility, roadway)
4. Existing and/or proposed structures.
5. Sewage disposal systems or works carrying or containing sewage or industrial wastes within the vicinity of the proposed well
6. All perennial, seasonal, natural, or artificial water bodies or watercourses, if applicable

OWNER INFO:

Well Owner Name (Required): City of Santa Barbara Primary Phone (805) 564-5596

Owner Mailing Address: PO Box 1990, Santa Barbara, California 93102-1990
Street Number and Street Name City State/ Zip Code

Complete this section if the person coordinating this project is other than the Well Owner (e.g., driller, contractor, etc.)

Project Coordinator/Certified Professional Name: Cody Wilgus

Mailing Address: 209 East Victoria Street, Santa Barbara, California 93101
Street Number and Name City State / Zip Code

Primary Phone: (805) 644 - 4455 Email: cwilgus@rinconconsultants.com

WELL INFO:

Well Location: Ortega Park, 604 East Ortega Street, Santa Barbara, California 93103
Street Number and Street Name City State/ Zip Code

Well Location's Assessor's Parcel Number (APN): 0 3 1 - 1 7 2 - 0 0 2

Well Use: ☒ Ground Water Monitoring ☐ Vapor ☐ Other _____

Drilling Method: ☐ Hollow Stem Auger ☐ Mud Rotary ☐ Air Rotary ☐ Sonic ☒ Direct Push ☐ Other _____

Proposed Depth 4 ft.
Well Bore Diam. 3.25 in.
Screen Interval 0-4 ft bgs

Sealing Material

☐ Neat Cement ☒ Clay
☐ Cement Grout ☐ Concrete
Well ID # ~~RB1-RB15~~ RB-12

Casing Information

Type: ☐ Steel ☒ PVC ☐ Other _____
Wall Thickness 0.113 Diameter 0.75 in. Annular Seal Depth _____ ft.
Additional Work Description Advance sampling tool to groundwater, collect grab sample
If destruction by pressure grout, grout volume: _____

LEGAL DECLARATION

LICENSED CONTRACTOR DECLARATION

I hereby affirm that I am licensed under the provisions of Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code (B. & P.C.) as a well drilling contractor (C-57 license) and such license is in full force and effect.

Julius Caerstens — Print Name of Driller | Julius Caerstens — Signature of Driller | 4-8-19 — Date

Lic. No.: 841350 Office Telephone 805-922-4772 Cell Phone: 805-570-4114

Business Name: Address

(Complete 'A' or 'B')

A. WORKERS' COMPENSATION DECLARATION

I hereby affirm one of the following:

☒ I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

☐ I have and will maintain workers' compensation insurance, as provided for by Section 3700 of the Labor Code, for the performance of work for which this permit is issued. My insurance carrier and policy number are:

Carrier State Compensation Ins Fund Policy No. 9212499918

Applicant Signature Julius Caerstens Date 4-8-19

B. CERTIFICATION OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

I certify that in the performance of work for which this permit is issued, I shall not employ any person in a manner so as to become subject to the Worker's Compensation Laws of California.

Applicant Signature _____ Date _____

Notice to Applicant: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

When signed by the Hazardous Materials Specialist or Professional Geologist, this application shall be deemed a permit only for the work described and is not a "permit for development" as that term is used in the California Subdivision Map Act. Please note additional permits (e.g., electrical installation, waste discharge requirements, land use clearance, grading, Santa Barbara City well permits) may also be required from other agencies. THIS PERMIT IS VALID FOR ONE YEAR FROM THE DATE OF ISSUANCE FOR THE WORK APPROVED HEREIN. No changes from the approved plan are permitted without prior written approval by Environmental Health Services (EHS). Final clearance will not be issued until all fees are paid and a copy of the drillers log is submitted to EHS.

I hereby agree to comply with all regulations of the County of Santa Barbara and California Well Standards pertaining to well construction, repair, modification, destruction and inactivation. The property owner, well driller, or agent will furnish EHS a copy of a completed well log upon completion of well construction, destruction, or modification.

I certify that I have read this application and declare under penalty of perjury that the information contained herein is true, correct and complete. I hereby authorize representatives of EHS to enter the premises for the purpose of inspecting the site and work described herein for compliance with county requirements.

REQUIRED INSPECTIONS / FINAL CLEARANCE: After permit approval, and prior to covering any components, an inspection must be scheduled directly with the approving Hazardous Materials Specialist or Professional Geologist at least two (2) business days in advance for:

- ✓ The sealing of the annular space on a well;
- ✓ The destruction of wells;
- ✓ Any operation stipulated on the permit to address special or unusual conditions.
- ❖ **Final clearance of the well will be issued upon receipt of the driller's well log.**

Signed Cody Wilgus — Applicant (Print Name) | Cody Wilgus — Applicant's Signature | Digitally signed by Cody Wilgus Date: 2019.04.08 15:08:04 -07'00' | 4/8/2019 — Date

APPLICATION DISPOSITION: ☒ **Approved** ☐ **Denied**

Signed _____ — Environmental Health Specialist | 4/10/2019 — Date

FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: MCB Date: 4/10/2019 Amt.$ No Fee ☐ Cash ☐ Check # N/A

Receipt No.#: N/A

Permit Conditions: Notify EHS 48 hours in advance of fieldwork

Final Construction Approved by: TMR Date: 4/10/2019

Final Clearance by: TMR Date: 4/10/2019

HPS

Santa Barbara County PUBLIC Health DEPARTMENT

Environmental Health Services
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2125 S. Centerpointe Pkwy., #333 • Santa Maria, CA 93455-1340 ◆ (805) 346-8460

MONITORING WELL PERMIT APPLICATION

TYPE OF PERMIT (*Please check the appropriate box below*)

☐ Construction or Modification	$629 (4 hrs) * first well $157 additional well	"Modification" means the deepening of a well, reperforation, sealing or replacement of well casing – construction of one completed well.
☒ Well Destruction	$471 (3 hrs) * first well $157 additional well	Abandonment – Complete filling of the well

* *An hourly rate fee of $157 will be added for those projects that require staff time in excess of that noted above. Final project approval will not be issued until all fees are paid.*

FOR OFFICE USE ONLY
Rec'd Date: 4/9/2019
Rec'd By: TMR
Permit #: A19157
W/P #: 0003968
P/E #: 4687
Hazmat Site #: NA

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

1. Property lines
2. Below grade utilities, piping, USTs, etc.
3. Access roads and easements (water, sewer, utility, roadway)
4. Existing and/or proposed structures.
5. Sewage disposal systems or works carrying or containing sewage or industrial wastes within the vicinity of the proposed well
6. All perennial, seasonal, natural, or artificial water bodies or watercourses, if applicable

OWNER INFO:

Well Owner Name (Required): City of Santa Barbara Primary Phone (805) 564-5596

Owner Mailing Address: PO Box 1990, Santa Barbara, California 93102-1990
Street Number and Street Name City State/ Zip Code

Complete this section if the person coordinating this project is other than the Well Owner (e.g., driller, contractor, etc.)

Project Coordinator/Certified Professional Name: Cody Wilgus

Mailing Address: 209 East Victoria Street, Santa Barbara, California 93101
Street Number and Name City State / Zip Code

Primary Phone: (805) 644 - 4455 Email: cwilgus@rinconconsultants.com

WELL INFO:

Well Location: Ortega Park, 604 East Ortega Street, Santa Barbara, California 93103
Street Number and Street Name City State/ Zip Code

Well Location's Assessor's Parcel Number (APN): 0 3 1 - 1 7 2 - 0 0 2

Well Use: ☒ Ground Water Monitoring ☐ Vapor ☐ Other

Drilling Method: ☐ Hollow Stem Auger ☐ Mud Rotary ☐ Air Rotary ☐ Sonic ☒ Direct Push ☐ Other

Proposed Depth 4 ft.
Well Bore Diam. 3.25 in.
Screen Interval 0-4 ft bgs
Sealing Material
☐ Neat Cement ☒ Clay
☐ Cement Grout ☐ Concrete
Well ID # ~~XXXXXXXXX~~ RB1-RB15 RB13

Casing Information

Type: ☐ Steel ☒ PVC ☐ Other
Wall Thickness 0.113 Diameter 0.75 in. Annular Seal Depth ft.
Additional Work Description Advance sampling tool to groundwater, collect grab sample
If destruction by pressure grout, grout volume:

LEGAL DECLARATION

LICENSED CONTRACTOR DECLARATION

I hereby affirm that I am licensed under the provisions of Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code (B. & P.C.) as a well drilling contractor (C-57 license) and such license is in full force and effect.

Julius Caerstens — Print Name of Driller | Julius Caerstens — Signature of Driller | 4-8-19 — Date

Lic. No.: 841350 Office Telephone 805-922-4772 Cell Phone: 805-570-4114

Business Name: Address

(Complete 'A' or 'B')

A. WORKERS' COMPENSATION DECLARATION

I hereby affirm one of the following:

☒ I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

☐ I have and will maintain workers' compensation insurance, as provided for by Section 3700 of the Labor Code, for the performance of work for which this permit is issued. My insurance carrier and policy number are:

Carrier State Compensation Ins Fund Policy No. 9212499918

Applicant Signature Julius Caerstens Date 4-8-19

B. CERTIFICATION OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

I certify that in the performance of work for which this permit is issued, I shall not employ any person in a manner so as to become subject to the Worker's Compensation Laws of California.

Applicant Signature _____ Date _____

Notice to Applicant: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

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I hereby agree to comply with all regulations of the County of Santa Barbara and California Well Standards pertaining to well construction, repair, modification, destruction and inactivation. The property owner, well driller, or agent will furnish EHS a copy of a completed well log upon completion of well construction, destruction, or modification.

I certify that I have read this application and declare under penalty of perjury that the information contained herein is true, correct and complete. I hereby authorize representatives of EHS to enter the premises for the purpose of inspecting the site and work described herein for compliance with county requirements.

REQUIRED INSPECTIONS / FINAL CLEARANCE: After permit approval, and prior to covering any components, an inspection must be scheduled directly with the approving Hazardous Materials Specialist or Professional Geologist at least two (2) business days in advance for:

- ✓ The sealing of the annular space on a well;
- ✓ The destruction of wells;
- ✓ Any operation stipulated on the permit to address special or unusual conditions.
- ❖ **Final clearance of the well will be issued upon receipt of the driller's well log.**

Signed Cody Wilgus — Applicant (Print Name) | Cody Wilgus — Applicant's Signature | Digitally signed by Cody Wilgus Date: 2019.04.08 15:08:04 -07'00' | 4/8/2019 — Date

APPLICATION DISPOSITION: ☒ **Approved** ☐ **Denied**

Signed _____ — Environmental Health Specialist | 4/10/2019 — Date

FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: MCB Date: 4/10/2019 Amt.$ No Fee ☐ Cash ☐ Check # N/A

Receipt No.#: N/A

Permit Conditions: Notify EHS 48 hours in advance of fieldwork

Final Construction Approved by: TMR Date: 4/10/2019

Final Clearance by: TMR Date: 4/10/2019

HPS

Santa Barbara County PUBLIC Health DEPARTMENT

Environmental Health Services
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2125 S. Centerpointe Pkwy., #333 • Santa Maria, CA 93455-1340 ◆ (805) 346-8460

MONITORING WELL PERMIT APPLICATION

TYPE OF PERMIT (*Please check the appropriate box below*)

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FOR OFFICE USE ONLY
Rec'd Date: 4/9/2019
Rec'd By: TMR
Permit #: A19158
W/P #: 0003969
P/E #: 4687
Hazmat Site #: NA

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

1. Property lines
2. Below grade utilities, piping, USTs, etc.
3. Access roads and easements (water, sewer, utility, roadway)
4. Existing and/or proposed structures.
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Primary Phone: (805) 644 - 4455 Email: cwilgus@rinconconsultants.com

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Well Use: ☒ Ground Water Monitoring ☐ Vapor ☐ Other

Drilling Method: ☐ Hollow Stem Auger ☐ Mud Rotary ☐ Air Rotary ☐ Sonic ☒ Direct Push ☐ Other

Proposed Depth 4 ft.
Well Bore Diam. 3.25 in.
Screen Interval 0-4 ft bgs
Sealing Material
☐ Neat Cement ☒ Clay
☐ Cement Grout ☐ Concrete
Well ID # ~~RB1-RB15~~RB-14

Casing Information

Type: ☐ Steel ☒ PVC ☐ Other
Wall Thickness 0.113 Diameter 0.75 in. Annular Seal Depth ft.
Additional Work Description: Advance sampling tool to groundwater, collect grab sample
If destruction by pressure grout, grout volume:

LEGAL DECLARATION

LICENSED CONTRACTOR DECLARATION

I hereby affirm that I am licensed under the provisions of Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code (B. & P.C.) as a well drilling contractor (C-57 license) and such license is in full force and effect.

Julius Caerstens — Print Name of Driller | Julius Caerstens — Signature of Driller | 4-8-19 — Date

Lic. No.: 841350 Office Telephone 805-922-4772 Cell Phone: 805-570-4114

Business Name: Address

(Complete 'A' or 'B')

A. WORKERS' COMPENSATION DECLARATION

I hereby affirm one of the following:

☒ I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

☐ I have and will maintain workers' compensation insurance, as provided for by Section 3700 of the Labor Code, for the performance of work for which this permit is issued. My insurance carrier and policy number are:

Carrier State Compensation Ins Fund Policy No. 9212499918

Applicant Signature Julius Caerstens Date 4-8-19

B. CERTIFICATION OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

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Applicant Signature _____ Date _____

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I hereby agree to comply with all regulations of the County of Santa Barbara and California Well Standards pertaining to well construction, repair, modification, destruction and inactivation. The property owner, well driller, or agent will furnish EHS a copy of a completed well log upon completion of well construction, destruction, or modification.

I certify that I have read this application and declare under penalty of perjury that the information contained herein is true, correct and complete. I hereby authorize representatives of EHS to enter the premises for the purpose of inspecting the site and work described herein for compliance with county requirements.

REQUIRED INSPECTIONS / FINAL CLEARANCE: After permit approval, and prior to covering any components, an inspection must be scheduled directly with the approving Hazardous Materials Specialist or Professional Geologist at least two (2) business days in advance for:

- ✓ The sealing of the annular space on a well;
- ✓ The destruction of wells;
- ✓ Any operation stipulated on the permit to address special or unusual conditions.
- ❖ **Final clearance of the well will be issued upon receipt of the driller's well log.**

Signed Cody Wilgus — Applicant (Print Name) | Cody Wilgus — Applicant's Signature | Digitally signed by Cody Wilgus Date: 2019.04.08 15:08:04 -07'00' | 4/8/2019 — Date

APPLICATION DISPOSITION: ☒ **Approved** ☐ **Denied**

Signed _____ — Environmental Health Specialist | 4/10/2019 — Date

FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: MCB Date: 4/10/2019 Amt.$ No Fee ☐ Cash ☐ Check # N/A

Receipt No.#: N/A

Permit Conditions: Notify EHS 48 hours in advance of fieldwork

Final Construction Approved by: TMR Date: 4/10/2019

Final Clearance by: TMR Date: 4/10/2019

HPS

Santa Barbara County PUBLIC Health DEPARTMENT

Environmental Health Services
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2125 S. Centerpointe Pkwy., #333 • Santa Maria, CA 93455-1340 ◆ (805) 346-8460

MONITORING WELL PERMIT APPLICATION

TYPE OF PERMIT (*Please check the appropriate box below*)

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FOR OFFICE USE ONLY
Rec'd Date: 4/9/2019
Rec'd By: TMR
Permit #: A19159
W/P #: 0003969
P/E #: 4687
Hazmat Site #: NA

Required Attachments: Plot plan indicating the location of the well with respect to the following items:

1. Property lines
2. Below grade utilities, piping, USTs, etc.
3. Access roads and easements (water, sewer, utility, roadway)
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OWNER INFO:

Well Owner Name (Required): City of Santa Barbara Primary Phone (805) 564-5596

Owner Mailing Address: PO Box 1990, Santa Barbara, California 93102-1990
Street Number and Street Name City State/ Zip Code

Complete this section if the person coordinating this project is other than the Well Owner (e.g., driller, contractor, etc.)

Project Coordinator/Certified Professional Name: Cody Wilgus

Mailing Address: 209 East Victoria Street, Santa Barbara, California 93101
Street Number and Name City State / Zip Code

Primary Phone: (805) 644 - 4455 Email: cwilgus@rinconconsultants.com

WELL INFO:

Well Location: Ortega Park, 604 East Ortega Street, Santa Barbara, California 93103
Street Number and Street Name City State/ Zip Code

Well Location's Assessor's Parcel Number (APN): 0 3 1 - 1 7 2 - 0 0 2

Well Use: ☒ Ground Water Monitoring ☐ Vapor ☐ Other

Drilling Method: ☐ Hollow Stem Auger ☐ Mud Rotary ☐ Air Rotary ☐ Sonic ☒ Direct Push ☐ Other

Proposed Depth 4 ft.
Well Bore Diam. 3.25 in.
Screen Interval 0-4 ft bgs
Sealing Material
☐ Neat Cement ☒ Clay
☐ Cement Grout ☐ Concrete
Well ID # ~~XXX~~-RB15

Casing Information

Type: ☐ Steel ☒ PVC ☐ Other
Wall Thickness 0.113 Diameter 0.75 in. Annular Seal Depth ____ ft.
Additional Work Description: Advance sampling tool to groundwater, collect grab sample
If destruction by pressure grout, grout volume:

LEGAL DECLARATION

LICENSED CONTRACTOR DECLARATION

I hereby affirm that I am licensed under the provisions of Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code (B. & P.C.) as a well drilling contractor (C-57 license) and such license is in full force and effect.

Julius Caerstens — Print Name of Driller | Julius Caerstens — Signature of Driller | 4-8-19 — Date

Lic. No.: 841350 Office Telephone 805-922-4772 Cell Phone: 805-570-4114

Business Name: Address

(Complete 'A' or 'B')

A. WORKERS' COMPENSATION DECLARATION

I hereby affirm one of the following:

☒ I have and will maintain a certificate of consent to self-insure for workers' compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

☐ I have and will maintain workers' compensation insurance, as provided for by Section 3700 of the Labor Code, for the performance of work for which this permit is issued. My insurance carrier and policy number are:

Carrier State Compensation Ins Fund Policy No. 9212499918

Applicant Signature Julius Caerstens Date 4-8-19

B. CERTIFICATION OF EXEMPTION FROM WORKERS' COMPENSATION INSURANCE

I certify that in the performance of work for which this permit is issued, I shall not employ any person in a manner so as to become subject to the Worker's Compensation Laws of California.

Applicant Signature _____ Date _____

Notice to Applicant: If, after making this Certificate of Exemption, you should become subject to the Worker's Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

When signed by the Hazardous Materials Specialist or Professional Geologist, this application shall be deemed a permit only for the work described and is not a "permit for development" as that term is used in the California Subdivision Map Act. Please note additional permits (e.g., electrical installation, waste discharge requirements, land use clearance, grading, Santa Barbara City well permits) may also be required from other agencies. THIS PERMIT IS VALID FOR ONE YEAR FROM THE DATE OF ISSUANCE FOR THE WORK APPROVED HEREIN. No changes from the approved plan are permitted without prior written approval by Environmental Health Services (EHS). Final clearance will not be issued until all fees are paid and a copy of the drillers log is submitted to EHS.

I hereby agree to comply with all regulations of the County of Santa Barbara and California Well Standards pertaining to well construction, repair, modification, destruction and inactivation. The property owner, well driller, or agent will furnish EHS a copy of a completed well log upon completion of well construction, destruction, or modification.

I certify that I have read this application and declare under penalty of perjury that the information contained herein is true, correct and complete. I hereby authorize representatives of EHS to enter the premises for the purpose of inspecting the site and work described herein for compliance with county requirements.

REQUIRED INSPECTIONS / FINAL CLEARANCE: After permit approval, and prior to covering any components, an inspection must be scheduled directly with the approving Hazardous Materials Specialist or Professional Geologist at least two (2) business days in advance for:

- ✓ The sealing of the annular space on a well;
- ✓ The destruction of wells;
- ✓ Any operation stipulated on the permit to address special or unusual conditions.
- ❖ **Final clearance of the well will be issued upon receipt of the driller's well log.**

Signed Cody Wilgus — Applicant (Print Name) | Cody Wilgus — Applicant's Signature | Digitally signed by Cody Wilgus Date: 2019.04.08 15:08:04 -07'00' | 4/8/2019 — Date

APPLICATION DISPOSITION: ☑ Approved ☐ Denied

Signed _____ — Environmental Health Specialist | 4/10/2019 — Date

FOR DEPARTMENT USE ONLY

Fixed Fee Rec'd: by: MCB Date: 4/10/2019 Amt.$ No Fee ☐ Cash ☐ Check # N/A

Receipt No.:#: N/A

Permit Conditions: Notify EHS 48 hours in advance of fieldwork

Final Construction Approved by: TMR Date: 4/10/2019

Final Clearance by: TMR Date: 4/10/2019

COUNTY OF SANTA BARBARA

X 2120718

Environmental Health Services

Department

Date 4/09/2019

Received from GEORGE THOMPSON

In Payment of MW OBSERVATION @ 471 & 70 @ 157.00

ONE THOUSAND FIVE HUNDRED SEVENTY and 00/100 Dollars $ 1,570.00

Received original of the above numbered receipt

CREDIT CARD	V #5971
CASH	
CHECK	

BY PHONE
SIGNATURE OF PAYOR

AUTHORIZED SIGNATURE

AC-147

5419 SM ENVIRNMNTL HEA
2125 CTRPOINTE PKY S 33
SANTA MARIA, CA 9345513
04/09/2019 15:06:12
MID: XXXXXXXXXX310 TID: XXXXX806

CREDIT CARD
VISA SALE

Card # Token XXXXXXXXXXXX5971
SEQ #: 1
Batch #: 645
INVOICE 1
Approval Code: 024765
Entry Method: Manual
Mode: Online
Tax Amount: $0.00
Cust Code:
Avs Code: NYZ

SALE AMOUNT $1570.00

I agree to pay above total amount according to card issuer agreement.
(Merchant agreement if Credit Voucher)

X _____

MERCHANT COPY

Appendix D

Ortega Park – Master Plan



DESIGN KEY

GENERAL PARK IMPROVEMENTS

1. EXISTING BIKE PATH
2. EXISTING PARKWAY & STREET TREES
3. EXISTING TREES TO REMAIN WITH OPEN LAWN
4. DECORATIVE FENCE WITH PILASTERS
5. ANGLED PERMEABLE PARKING WITH SIDEWALK
6. STREET TREE WITH TREE GRATE
7. COTA STREET PARK PROMENADE
8. OPEN GRASS AREA
9. PLANTER AREA
10. BIORETENTION AREA
11. PILASTERS WITH ROLLING GATE
12. PILASTERS WITH SWING GATE
13. ENTRY PLAZA WITH ENTRY SIGN
14. HEAD-IN PERMEABLE PARKING SPACES
15. TEMPORARY POP-UP TENTS
16. PARK RESTROOMS

POOL AREA - 26,870 SQUARE FEET

17. POOL FACILITIES BUILDING
18. AQUATIC MECHANICAL AND CHEMICAL BUILDING
19. EXISTING WELCOME HOUSE & POOL ENTRY
20. WET PLAY / WADING POOL
21. POOL SLIDE / PLAY FEATURE
22. NON-COMPETITIVE LAP POOL
23. EXISTING WELL TO REMAIN
24. OVERHEAD SHADE STRUCTURE
25. MURAL LOCATION

SKATE PLAZA - 8,000 SQUARE FEET

26. SPECTATOR AREA
27. ENTRY FROM PARK
28. SKATE ELEMENTS

PLAYGROUND - 6,280 SQUARE FEET

29. DROUGHT TOLERANT PLANTING WITH DG
30. SPLASH PAD FEATURE IN PLAZA
31. BBQ AREA (RESERVABLE)
32. COLORIZED RUBBER SURFACING
33. FAMILY PICNIC AREA WITH SHADE SAILS
34. PLAY EQUIPMENT (2-5 YEARS, 5-12 YEARS)

MULTI-GENERATIONAL ACTIVITY ZONE - 11,760 SQUARE FEET

35. LOW SEAT WALLS WITH DG
36. BASKETBALL
37. CONCRETE CORNHOLE
38. DURABLE OUTDOOR PING PONG TABLES
39. BOCCE BALL COURT

MULTI-SPORT FIELD AREA - 86,500 SQUARE FEET

40. MULTI-SPORT SYNTHETIC TURF WITH LIGHTING
41. BASEBALL BACKSTOP
42. SOCCER FIELD PROMENADE
43. YOUTH BASEBALL STRIPING ON SYNTHETIC TURF
44. SECONDARY PEDESTRIAN ENTRANCE
45. FIELD ENTRANCE WITH SLIDING GATE & PILASTERS
46. LOW DECORATIVE FENCE

ORTEGA PARK - MASTER PLAN

SANTA BARBARA, CA.
PARK SIZE: 9.5 ACRES

0' 10' 20' 40' 80'
SCALE 1" = 20'
SEPT 2018

rrm design group

Appendix E

Photo Figure



Photograph 1. View of the restroom building and youth softball field, facing southwest.



Photograph 2. View of the swimming pool area and southwest perimeter of the park along Salsipuedes Street, facing southeast.



Photograph 3. View of the playground, facing northeast.



Photograph 4. View of the community building and basketball courts, facing northwest.



Photograph 5. View of boring location RB1 and northeast adjacent Santa Barbara Junior High School, facing northeast.



Photograph 6. View of boring location RB12 and the southwest corner of the park at Salsipuedes Street and East Cota Street.



Corrective Action Plan/Soil Management Plan

Ortega Park
604 East Ortega Street, Santa Barbara, California

prepared on behalf of

The City of Santa Barbara
620 Laguna Street
Santa Barbara, California 93101

submitted to

Santa Barbara County Public Health Department
Environmental Health Services Division
2125 South Centerpointe Parkway, Suite 333
Santa Maria, California 93455

prepared by

Rincon Consultants, Inc.
209 East Victoria Street
Santa Barbara, California 93101

June 10, 2020

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
rinconconsultants.com

Rincon Consultants, Inc.
209 East Victoria Street
Santa Barbara, California 93101

805 319 4092 OFFICE AND FAX

info@rinconconsultants.com
www.rinconconsultants.com

June 10, 2020
Project No. 18-06506

E. Steven Nailor, REHS, EIT
Senior Hazardous Materials Specialist
Santa Barbara County, Public Health Department
Environmental Health Services Division
2125 S. Centerpointe Parkway, Room #333
Santa Maria, California 93455
Via Email: Steve.Nailor@sbcphd.org

Subject: Corrective Action Plan and Soil Management Plan – Ortega Park, 604 East Ortega Street, Santa Barbara, California

Dear Mr. Nailor:

On behalf of the City of Santa Barbara, Rincon Consultants, Inc. has prepared this Corrective Action Plan and Soil Management Plan for the Ortega Park site located at 604 East Ortega Street, Santa Barbara, California.

Please do not hesitate to contact us with any questions or comments regarding this report or this project.

Sincerely,
Rincon Consultants, Inc.

Shawn Decker, MESM, LEED AP
Senior Program Manager

Walt Hamann, PG, CEG, CHG
Vice President, Environmental Services



Table of Contents

Introduction 1

Project and Regulatory History 2
- Site History 2
- April 2019 – Phase II Environmental Site Assessment 2
  - Distribution of Contaminants in Soil 2
  - Distribution of Contaminants in Groundwater 3

Physical Setting 4
- Topography 4
  - Site Geology 4
  - Regional Groundwater Occurrence and Quality 4

Ortega Park Renovations 5
- Playing Fields 5
- Aquatic Area 5
- Skate Park, Stormwater Chambers, And Multi-Generation Activity Zone 6
- Permeable Features 6
- Utility Connections and Street Improvements 6
- Tree Planting 6
- Park Irrigation 6
- Structures 7

Scope of Work 8
- Pre-field Work Tasks 8
  - Permits 8
  - Stormwater Pollution Prevention Plan 8
  - Agency Correspondence 8
  - Utility Notification 8
  - Health and Safety Plan 8
  - Waste Profiling 9
- Excavation of Contaminated Material 9
  - Excavation/Grading Contractor 9
  - Identification of Impacted Soil 9
  - Excavation, Segregation, and Assessment of Impacted Soil 10
  - Sorting of Trash/Debris and Soil 10
  - Monitoring 10
  - Soil Storage 11
  - Soil Sampling 11
  - Soil Sample Analysis 12
- Transportation Requirements and Procedures 12
  - Requirements of Haulers 12
  - Truck Loading Operations 13
  - Transportation Requirements 13

Transportation Routes....13
Traffic Control Procedures....14
Disposal of Impacted Soil....14
Shipment Documentation and Record Keeping....14
Shipment Documentation....14
Record Keeping....15
Reporting....15
CAP/SMP Administrative Flow Chart....15
Limitations....16

Figures

Figure 1 Vicinity Map
Figure 2 Site Map
Figure 3 TPH Concentrations in Soil Map
Figure 4 Lead Concentrations in Soil Map
Figure 5 PAH Concentrations in Soil Map
Figure 6 Preliminary Earthwork Map
Figure 7 Preliminary Grading and Utility Plan – Playing Fields
Figure 8 Preliminary Grading and Utility Plan – Aquatics
Figure 9 Preliminary Grading and Utility Plan – Skate Park and Stormwater Chambers
Figure 10 Preliminary Permeable Features Construction Details
Figure 11 Preliminary Plantings Details

Tables

Table 1 Soil Matrix Analytical Summary – TPH, VOCs, and PCBs
Table 2 Soil Matrix Analytical Summary – Metals
Table 3 Soil Matrix Analytical Summary – PAHs
Table 4 Groundwater Analytical Summary – TPH and VOCs

Introduction

On behalf of the City of Santa Barbara, Rincon Consultants, Inc. (Rincon) has prepared this Corrective Action Plan (CAP) and Soil Management Plan (SMP) for the Ortega Park site located at 604 East Ortega Street, Santa Barbara, California (Figure 1). It is our understanding that the site was used as a municipal waste dump from at least 1902 until at least 1927. Between 1927 and 1930, the site was developed to its current use as a City park (Figure 2). According to the preliminary plans, the park renovation will include the construction of an aquatics facility, a splash pad, a skate park, stormwater management systems, and artificial turf playing fields. Structures at the new park will include the existing welcome house, a new restrooms structure, and a new aquatic mechanical and chemical building.

The subject property is an open site in the Santa Barbara County Public Health Department, Environmental Health Services Division (EHS) Site Mitigation Unit (SMU) Program and identified as SMU Site Number 760 and Global Identification Number T10000014371. This CAP/SMP was prepared in response to a May 26, 2020 directive letter from EHS.

This CAP/SMP presents methodology and protocols to properly handle, store, transport, and dispose impacted soil that is encountered during subsurface work performed for the Ortega Park renovations. These methodologies and protocols are intended to ensure construction work is executed in a manner that is protective of worker, public, and environmental health. The impacted soil should be handled, stored, transported, and disposed in accordance with federal, state, and local regulations. Areas that may require over-excavation to remove contaminated soil at infiltration features are described in the Ortega Park Renovations section. Excavation beyond what is required to perform the park renovations is not proposed at features that do not create a conduit for surface water through contaminated soil and trash to groundwater. Excavation depths will likely be revised following the completion of geotechnical testing.

The following sections provide an overview of the project history and the physical setting, discuss the Ortega Park renovations, and present the scope of work. This CAP/SMP is prepared as a document that can be used for the current project and for future projects involving subsurface work at this site.

Project and Regulatory History

Site History

According to documents provided to Rincon by the City of Santa Barbara, the City purchased the site in 1902. The site served as a municipal waste dump possibly from the early 1900s to approximately 1927. It appears that the waste from the public in addition to debris resulting from the 1925 earthquake were disposed at the site. Debris has been encountered in trenches excavated at the site and EHS investigation records from 1992 to 1993 reference a dump at the site. Between 1927 and 1930, the site was developed as a City park.

April 2019 – Phase II Environmental Site Assessment

On April 16, 2019, twenty borings were advanced at the subject property. Five borings were advanced to 10 feet below grade (HP1 to HP5), 14 borings were advanced to 4 feet below grade (RB1 to RB11, RB12 to RB15), and 1 boring met refusal at 1 foot below grade (RB12) (Figure 2). Two soil matrix samples were collected from each of the 10-foot and 4-foot borings and 1 soil sample was collected from the 1-foot boring. Groundwater samples were collected from borings HP2 through HP5. Groundwater was not encountered in boring HP1.

Organic odor similar to decomposing vegetation was noted in the soil matrix sample collected at 10 feet below grade from boring HP3. Grey and black staining was encountered in borings RB4, RB5, RB6, RB9, and RB10. Debris, including glass, metal, and building materials such as brick, was noted in borings HP2, RB4, RB6, RB7, RB9, RB10, RB11, and RB12. Soil encountered in the borings generally consisted of silt with varying amounts of sand and clay. Field screening with the photoionization detector (PID) did not detect measurable concentrations of volatile organic compounds (VOCs) in the borings with the exception of RB3. Soil screened in boring RB3 at 2 and 4 feet below grade detected VOCs at concentrations of 4 parts per million by volume (ppmv) and 10 ppmv, respectively. The groundwater sample collected from HP3 exhibited a sheen and slight hydrocarbon odor.

Distribution of Contaminants in Soil

TPH

TPHd and TPHo were detected at concentrations exceeding the EHS Investigation Level (IL) of 100 milligrams per kilogram (mg/kg) in soil samples collected from 8 of the 20 borings advanced at the subject property (Figure 3, Table 1). The highest concentration of TPH was detected in soil sample RB6-4 (soil sample collected at 4 feet below grade from boring RB6) at a concentration of 12,700 mg/kg. TPH concentrations exceeding EHS ILs were generally detected in the northeastern, eastern, and southern portions of the subject property.

Metals

Metals were detected at concentrations exceeding EHS ILs in soil samples collected from 12 of the 20 borings advanced at the subject property (Table 2). Metals exceeding EHS ILs include arsenic, barium, chromium, lead, mercury, thallium and zinc. Lead was detected at concentrations exceeding California hazardous waste thresholds in soil samples collected from 7 borings advanced in the

eastern and southern portions of the subject property (Figure 4). Zinc was detected at a concentration exceeding California hazardous waste thresholds in the soil sample collected from boring RB6. Toxicity Characteristic Leaching Procedure (TCLP) lead was detected in soil sample HP4-10 at a concentration of 4.7 milligrams per liter (mg/L) which is below the Federal hazardous waste threshold of 5 mg/L.

PAHs

The benzo (a) pyrene (BaP) Toxicity Equivalent (TE) exceeds the EHS IL for BaP of 0.11 mg/kg in soil samples collected from 5 of 20 borings advanced at the subject property (Figure 5, Table 3). Similar to the TPH, the highest concentrations of PAHs were detected in soil sample RB6-4. BaP TE was calculated as 75 mg/kg in soil sample RB6-4. PAH concentrations exceeding EHS ILs were generally detected in soil samples collected from borings located in the north central and northeastern portions of the subject property.

Hazardous Waste Characterization

Lead concentrations exceeding California (non-RCRA) Hazardous Waste Thresholds were detected in borings RB5, RB6, RB7, RB9, RB10, RB12, and HP4, advanced in the eastern half of the subject property (Figure 4). Boring RB6 also detected zinc at a concentration exceeding the California Hazardous Waste Threshold for zinc in soil.

Distribution of Contaminants in Groundwater

The highest contaminant concentrations detected in the groundwater consisted of TPH in the diesel and motor oil ranges and tert-Butyl alcohol (TBA) in the groundwater sample collected from groundwater sample HP3. Boring HP3 was advanced between the existing locations of the pool and softball diamond in the southern portion of the site. Low concentrations of TPH were detected in the soil samples collected from HP3. Benzene was also detected at concentrations exceeding EHS ILs in groundwater sample HP5.

Groundwater was not encountered, and groundwater samples were not collected from borings advanced in the northeastern portion of the site in which the highest contaminant concentrations were detected in the soil. Groundwater samples were collected in the southern portion of the park in the vicinity of planned features requiring deeper excavation depths.

Physical Setting

Topography

The current United States Geological Survey (USGS) topographic map (Santa Barbara Quadrangle, 1952, photo revised 1988) indicates that the subject property is situated at an elevation of approximately 40 feet above mean sea level with generally flat topography. Regional topography slopes gently to the south towards the Pacific Ocean. Geology and Hydrogeology

Site Geology

The site is located on the gently sloping Santa Barbara Coastal Plain, which is comprised of recent-aged alluvium, deposited across raised marine terraces. These alluvial deposits were derived from older sedimentary deposits within the Santa Ynez Mountains north of the site, and overlie the Quaternary aged Santa Barbara Formation. Soil encountered during the April 2019 assessment generally consisted of silt with varying amounts of sand and clay.

No active faults have been mapped by Dibblee (1986) beneath the subject property. An active fault is defined by the State of California as one which has had surface displacement within the last 11,000 years (Holocene time on the geologic time scale). Active faults are also classified by historic (within the last 200 years) seismicity, where surface rupture may or may not be evident. The concealed trace of the potentially active Mesa Fault is located approximately 1 mile south-southwest of the subject property.

Regional Groundwater Occurrence and Quality

The project site is located within the Santa Barbara Hydrologic sub-area of the South Coast Hydrologic Unit, commonly known as the Santa Barbara Groundwater Basin. The basin is bounded on the southeast by the Pacific Ocean, on the southwest by the Lavigia Fault, on the west by an unnamed fault, and on the north by the Mission Ridge Fault. The Santa Barbara Formation and overlying unconsolidated Holocene alluvium comprise the water bearing zones within this unit. Aquifers within the Santa Barbara Groundwater Basin are used for municipal and domestic water supply. In the site vicinity, the unconsolidated Holocene alluvium aquifer is approximately 200 to 400 feet below grade and the Santa Barbara Formation is located at up to approximately 1,000 feet below grade. It is our understanding that there is a water well located at the subject property. Rincon has not reviewed records for the well.

Records were reviewed on the State Water Resources Control Board's GeoTracker website. GeoTracker records for the R.J. Carroll and Sons Plumbing site located adjacent to the subject property to the southwest indicate that as recently as 2014, groundwater has been encountered at depths ranging from less than 1 foot below grade to approximately 6 feet below grade. Based on information from this and other nearby sites, the local groundwater flow direction in the shallow zone is toward the east, and the regional groundwater flow direction in the shallow zone is toward the ocean (south to southeast). During the April 2019 assessment, groundwater was encountered in the southwest portion of the site at approximately 5 feet below grade.

Ortega Park Renovations

Rincon's understanding of the Ortega Park renovations is based upon our review of preliminary plans prepared by RRM Design Group (RRM). With permission of RRM, the preliminary plans detailing excavation depths are included as Figures 6 through 11 of this CAP/SMP. Preliminary plans do not include disposal of contaminated soil and trash/debris beneath the site. The final plans will include proper offsite disposal of excavated contaminated soil and trash/debris in accordance with this CAP/SMP, permits, rules and regulations. Excavation depths are preliminary and subject to change following the completion of geotechnical testing (Figure 6).

Groundwater was encountered during the April 2019 assessment at approximately 5 feet below grade in borings advanced in the southern portion of the site. Groundwater was not encountered to 10 feet below grade in boring HP1 advanced in the southwestern portion of the site.

Playing Fields

The existing grass field will be replaced with an approximately 90,000 square foot artificial turf field (Figure 7) with soil excavations from 1 to 3 feet below grade. Nineteen drainage pipes constructed of 12 inch diameter ADS AdvanEDGE® pipe planned to be installed beneath the field will drain infiltrated surface water to the northeast to an existing catch basin. According to detail A on Figure 7, the subgrade at 1 foot below grade will be compacted to 90%. Since the playing fields are artificial turf, irrigation will not be required; however, on very hot days the field is watered prior to games to bring down the temperature of the field material. Additional excavation is not planned in the turf field area for contaminated soil removal purposes, as surface water infiltration will be removed by the drainage pipes to an existing catch basin. Geotechnically testing may require additional soil and trash/debris removal for compaction purposes.

Aquatic Area

The existing pool will be replaced by a new wading pool, lap pool, and splash pad area with soil excavations from 1 to 11.5 feet below grade (Figures 6 and 8). The existing bathroom/pool facilities building will also be replaced and a new aquatic mechanical and chemical building will be built.

Preliminary plans indicate the following quantities of soil excavation:

- Swimming pool- 637 cubic yards
- Swimming pool surge tank- 33 cubic yards
- Wading pool- 72 cubic yards
- Slide balance tank- 57 cubic yards

Maximum excavation depth at the swimming pool of 11.5 feet below grade is associated with the main drain and the drain's hydrostatic relief valve and collector tube. Excavation beneath the remainder of the swimming pool is planned at approximately 8.5 feet below grade. According to documents provided to Rincon by RRM, the swimming pool must be constructed in a single soil condition for stability purposes and weight requirements. It is likely that groundwater will be

encountered at approximately 5 feet below grade at the excavations in the aquatic area. Dewatering will likely be necessary. Contaminated groundwater should be properly managed.

Skate Park, Stormwater Chambers, And Multi-Generation Activity Zone

A new skate park, subsurface stormwater chambers, and a multi-generation activity zone will be built to the east of the aquatic area with soil excavations from 1 to 6 feet below grade (Figures 6 and 9). CulTec stormwater chambers details are included on Figure 10. The stormwater chambers will direct water to the southeast to a proposed stormwater catch basin along Cota Street and via a storm drain to a proposed 15-inch diameter storm drain connection to existing curb inlet at the corner of Cota Street and Salsipuedes Street. Additional excavation due to potentially contaminated soil is not expected to be necessary in the stormwater chamber area, as surface infiltration will be removed by the drainage pipes.

Permeable Features

Along with stormwater chambers mentioned above, additional permeable features are proposed, such as bioretention areas and permeable pavement areas with trench drains (Figure 10). If these areas are designed to drain to groundwater, additional excavation would be recommended to groundwater depth with a lateral 3-foot buffer.

Utility Connections and Street Improvements

Improvements to the street surfaces and subsurface utility connections will occur in the streets surrounding Ortega Park (East Ortega Street, North Salsipuedes Street, East Cota Street, and North Quarantina Street). In locations requiring soil excavation, the area may be pre-assessed by drilling or potholing to collect soil samples or assessed during excavation activities, as detailed in the Excavation of Contaminated Material section below.

Tree Planting

Various trees and shrubs will be installed during the park renovations requiring soil excavations at various depths (Figure 12). Small trees and shrubs are proposed to be installed with minimal soil excavation and drainage; therefore, additional excavation is not recommended.

As depicted on Detail 2 on Figure 11, the proposed palm tree locations will be excavated 4 feet below grade for the rootball and backfill and an additional 4 feet below grade for drainage. If palm trees are to be installed in areas of contamination, additional excavation is recommended to reduce the risk of drainage water percolating into contaminated soil and mixing with the groundwater.

Park Irrigation

An irrigation plan is recommended to be developed if contamination is left in place in areas requiring irrigation. Irrigation should be limited to what is required to maintain the landscaping. Overirrigation should be avoided in areas of contamination to decrease the potential for contaminant migration. The playing fields (Figure 7) will be developed with artificial turf and will not

require irrigation, so irrigated areas will be limited to landscaping. On very hot days, the field will be watered prior to games to bring down the temperature of the field material.

Structures

As depicted on Figures 6 and 8, the planned structures at the renovated park will be in the southwest corner and consist of the existing Welcome House, a new restroom building, and a new aquatics mechanical and chemical building. Soil vapor and methane testing may be warranted at the locations of the structures.

Scope of Work

Pre-field Work Tasks

Permits

Prior to the start of subsurface activities, a permit for the excavation of over 1,000 cubic yards of contaminated soil will be obtained from the Santa Barbara County Air Pollution Control District (APCD). The APCD permit typically requires that contaminated soil management activities are performed outside of school hours.

The City of Santa Barbara and the City's contractors will obtain permits required to perform the planned park renovations from the City of Santa Barbara and any other permitting agencies.

Permits from the Central Coast Regional Water Quality Control Board (RWQCB) and/or the City of Santa Barbara will be required if there is the discharge of groundwater. Contaminated groundwater should be properly managed.

Stormwater Pollution Prevention Plan

As required by the Construction General Permit (CGP), a site-specific Stormwater Pollution Prevention Plan (SWPPP) is required to be prepared in compliance with the CGP 2009-0009-DWQ (as amended by Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ). The preparation of the SWPPP will address the site-specific Risk Level assessment and develop a plan for inspection and compliance requirements.

Agency Correspondence

Pursuant to the requirements of EHS, within thirty days of receiving project approval from the City of Santa Barbara Community Development Department, an implementation schedule will be submitted to EHS with field work beginning within 120 days.

EHS will be notified at least one week in advance of subsurface construction activities in the vicinity of contaminated soil. The APCD will be notified in accordance with permit requirements. Agency correspondence will follow the Administrative Flow Chart included in this CAP/SMP.

Utility Notification

Prior to the commencement of subsurface work, the contractor will notify the Underground Service Alert utility marking service. California law requires this notification. The utility marking service identifies known utility locations in the public right of way. Also, prior to the start of field work, the City of Santa Barbara will be asked if they know of any subsurface utilities in the proposed excavation areas. If the existence of utilities in the proposed excavation areas is known, then the contractor will consult with the City of Santa Barbara to avoid damaging these known structures.

Health and Safety Plan

A site-specific Health and Safety Plan (HASP) will be prepared that outlines the measures to be followed to minimize exposure to onsite workers and the public. The site safety plan is prepared in accordance with Occupational Safety and Health Administration (OSHA) requirements (California

Code of Regulations [CCR] Title 8 Section 5192) and contains safety provisions for routine response activities and unexpected emergencies. The plan contains information on chemical and physical hazards, personal protective equipment, decontamination procedures, personnel responsibilities, and emergency response protocols. The plan additionally includes the information required by the CUPA. This document is required by Federal law.

Waste Profiling

Contaminated non-hazardous waste soil and non-RCRA hazardous waste soil will be disposed at appropriately licensed facilities. Trash and debris may require sorting from the soil prior to disposal. There might be special handling and disposal requirements associated with the types of trash and debris encountered. Soil, trash and debris will be properly disposed in accordance with applicable laws and regulations.

The APCD requires that landfill acceptance letters be submitted with the permit application. Based on the age of the existing analytical data (April 2019), additional sampling and analysis will likely be required for landfill acceptance. The number of soil samples and analytical program will be in conformance with the requirements of the disposal facility.

Excavation of Contaminated Material

Excavation/Grading Contractor

Excavation work in areas with known contamination will be performed by a contractor with an active General A contractor's license with a hazardous waste endorsement from the State of California. Per OSHA regulations (Federal Standards – 29 CFR, Par 1926 and CCR Title 8 Section 5192) since soil is classified as a hazardous waste, the contractor's employees working on the site are required to be 40-hour trained in Hazardous Materials and Waste Operations (HAZWOPER) prior to conducting excavation activities at the site. Proof of the required training for each of the onsite excavation contractor's employees will be maintained at the site. In addition, EHS requires that site workers are HAZWOPER certified in areas with the potential for hazardous waste.

Installation Contractors

Once contaminated soil is excavated, the floor and sidewalls of excavations may be lined with plastic sheeting to effectively isolate contaminated soil so that workers who may not be HAZWOPER trained can proceed with park renovations activities. Alternative methods of isolation such as partially backfilling the excavation may be considered if the approach can effectively isolate contaminated soil so that direct exposure cannot occur, and that breathing-zone air quality can be maintained.

Identification of Impacted Soil

The constituents of concern are heavy-range TPH, metals, and PAHs. Field evidence of TPH contamination includes and is not limited to discoloration and odors. Elevated metals concentrations and PAHs may not exhibit field evidence of contamination. Trash and debris are field indicators of contamination. Field instruments such as a photoionization detector (PID) will be used for air quality monitoring and soil segregation. An x-ray fluorescence (XRF) field meter will be utilized to field screen the soil for lead during the excavation activities. XRF measurements will be collected at a rate based upon field indications of contamination and homogeneity of the soil being

excavated. At a minimum XRF measurements will be collected at a rate of four measurements per truck load. A Landtech GEM 2000 Plus or 5000 handheld meter will be utilized to monitor for methane. The site specific safety plan will include safety protocols associated with methane.

If field evidence of unidentified soil contamination is encountered during subsurface work, work should cease in that area of the excavation and the City of Santa Barbara representative should be contacted. Any excavated soil exhibiting evidence of contamination should be segregated and managed as described in the following subsection. Work should not resume in potentially contaminated areas of the site without the permission of the City of Santa Barbara project manager. Unless otherwise specified by the City of Santa Barbara project manager, the City of Santa Barbara project manager will notify the EHS Hazardous Materials Specialist, Steven Nailor, via telephone at (805) 346-8344 if potentially contaminated soil is encountered during excavation work.

Excavation, Segregation, and Assessment of Impacted Soil

An Environmental Scientist, working under the direction of a CA-licensed Professional Geologist or Professional Civil Engineer, will be onsite during excavation work conducted in contaminated areas. The Environmental Scientist will direct the excavation contractor on the segregation of the contaminated soil and controlling dust. As warranted, dust will be controlled by periodically spraying the work areas with water or other approved dust control materials. Contaminated soil will either stored onsite (with permission of the APCD) or will be loaded directly onto trucks, covered, and transported to an approved offsite disposal/recycling facility. Field meters, other field evidence of contamination, and analytical testing results from the previously performed borings will be used to direct soil segregation. Waste profile verification sampling will be performed as warranted.

If contamination is identified in areas of the project area that were not previously sampled then additional soil samples will be collected from the contaminated soil for characterization, profiling, and disposal purposes. Soil sampling is described below.

Sorting of Trash/Debris and Soil

Depending on the quantity and type of trash and debris encountered during excavation activities it might be required to sort the trash and debris from the soil prior to offsite disposal. Additional testing may be required.

Monitoring

The Environmental Scientist will monitor the air quality of the work area in conformance with the site-specific health and safety plan and permit requirements. Fugitive vapor emissions shall be monitored with the use of a PID or equivalent. The PID will be calibrated in accordance with manufacturer specifications at the commencement of earthwork activities each day. A particulate air monitor will be utilized to monitor dust. The dust meter will have an active pump and be in accordance with permit conditions.

During excavation or soil loading, air monitoring of dust and VOC concentrations shall be conducted continuously using a hand-held monitor. Monitoring shall be conducted in the downwind direction of the excavation site. The excavation site includes any stockpiles, any areas of disturbed soil, and any active work areas. Monitoring data shall be recorded on a regular time interval. Through the duration of the excavation project, a log of PID and dust readings (if required) shall be kept in accordance with APCD requirements. If fugitive airborne emissions are measured at levels exceeding permit conditions, the City of Santa Barbara will be notified in accordance with the

CAP/SMP Administrative Flow Chart. The City of Santa Barbara will direct the notification of the APCD.

Soil Storage

The APCD permit for the excavation of greater than 1,000 cubic yards of contaminated soil typically does not allow the stockpiling of soil for more than 24 hours. A variance that allows the stockpiling of contaminated soil for more than 24 hours may be applied for under certain circumstances.

If contaminated soil is stored onsite, it shall be placed in United States Department of Transportation (DOT) approved containers or stockpiled. Stockpiled material shall be stored on and covered by undamaged high-density polyethylene or equivalent impermeable barrier in a burrito wrap fashion. The stockpile shall not be located in sensitive site areas or in areas containing inlets to storm drains and other water ways. Stockpile areas will not contain standing water at any time. Residual water resulting from excavated soil that is too wet to transport will be properly containerized, tested, and disposed.

Trash and debris will be sorted and stored in accordance with applicable laws and regulations.

The SWPPP and the City of Santa Barbara Storm Water Management Program, Storm Water Best Management Practices (BMP) Guidance Manual will be followed. Spill containment equipment and devices will be on site at all times during the excavation work.

Soil Sampling

Soil sampling may be required for waste profile verification purposes and for the delineation and left in place documentation of contaminated soil. Soil sampling will be performed as directed by the EHS Hazardous Materials Specialist. Soil sampling rates are anticipated to be affected by the quantity of trash and soil encountered. Soil sampling in areas that are predominantly trash may not be possible.

If soil sampling is performed it will be in accordance with the following methodology. In sloped excavation areas less than 5 feet in depth that are safe to access, the soil samples will be collected by driving the soil sampler directly into the excavation sidewall and excavation bottom. In excavation areas greater than 5 feet in depth, soil samples will be collected directly from the bucket on the excavator. The excavator bucket will be securely placed on the ground prior to collecting the soil sample from the excavator bucket. The excavator bucket will contain enough soil that the Environmental Scientist can collect a representative soil sample from below the top 2 inches of the soil in the excavator bucket. The soil samples will be collected in appropriate sampling containers provided by the analytical laboratory. The container will be labeled, sealed with Teflon, and stored in a cooler chilled to 4 degrees Celsius. The contractor will coordinate with the analytical laboratory to have samples couriered to a State of California certified analytical laboratory using chain-of-custody protocol. For rush turnaround, the samples can be analyzed by a mobile onsite laboratory. Soil sample collection will be in conformance with the current revision of the United States Environmental Protection Agency (USEPA), SW-846 guidance document- *Test Methods for Evaluating Solid Waste*.

Following collection of samples, all sampling equipment will be washed in a non-phosphate detergent soap solution and triple rinsed. Soil sampling will be performed under the oversight of a California Professional Geologist.

Soil Sample Analysis

Soil samples will be transported to the State certified analytical laboratory following chain-of-custody protocol. The laboratory analyses shall be performed by a laboratory certified by the California Department of Health Services Lab Accreditation Program for each of the analyses to be performed. The analytical laboratory Environmental Laboratory Accreditation Program (ELAP) number will be included in the analytical report. The analytical program used for the profiling of the soil and for waste profile verification shall be in accordance with the requirements of the disposal facility that will accept the excavated soil and is anticipated to include the following:

- Title 22 Metals by EPA Method 6010B/7471A
- Full Range TPH by EPA Method 8015M
- Full list VOCs including oxygenates by EPA Method 8260B
- PAHs by EPA Method 8270C

Soil samples analyzed for delineation and left-in-place documentation will be analyzed for the following:

- Title 22 Metals by EPA Method 6010B/7471A
    - Areas with previous metals analytical data may be only analyzed for specific metals such as lead.
- TPHd and TPHo by EPA Method 8015M
- PAHs by EPA Method 8270C

Total lead concentrations exceeding 10 times the soluble threshold limit concentration (STLC) will be analyzed for STLC lead. Total lead concentrations exceeding 20 times the STLC will be analyzed for TCLP lead.

Sample analysis turnaround time will be such that it meets contract requirements and hold times.

MDL

The analytical laboratory is required to report both the method detection limit (MDL) and the practical quantitation limit (PQL) for every sample result. Per 40 CFR, part 136, Appendix B, the MDL is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The PQL is typically 2 to 10 times the MDL. A detection between the MDL and the PQL is flagged by the laboratory to indicate that the laboratory cannot reliably quantify the detection. Laboratories are required to report all detections and all data qualifiers. All non-detections will be reported as not detected less than the value of the MDL.

Transportation Requirements and Procedures

Requirements of Haulers

Qualified haulers to transport soil from the site will be retained. The selected haulers will be fully licensed and insured to transport the soils. Haulers will follow all applicable requirements of the Department of Transportation (DOT) regulations contained in Code of Federal Regulations (CFR), Title 49 Parts 174 through 177 with regard to loading, unloading, and general handling based on

transport mode. If the soil is classified as a hazardous waste then the soil shall be transported by a hazardous waste hauler registered with the California EPA Department of Toxic Substances Control and excavation contractor employees assisting with loading of the trucks will be 40-hour trained in HAZWOPER. Proof of the required training for each of the onsite contractor's employees will be maintained at the site.

Truck Loading Operations

Trucks will be loaded at designated soil staging areas for transportation to the designated disposal facility. Stray waste material on vehicles, tires, or on the lips of the container, etc., will be removed manually with a brush; shaker plates may also be used to reduce tracking of the materials offsite. The container of the truck will be covered to prevent soil or dust from being released from the truck during transport to the disposal facility. Prior to leaving the soil staging areas, each truck will be inspected by environmental field personnel or the site supervisor to ensure that the containers are adequately covered or secured, the trucks are cleaned of overburdened soil, and the shipment is properly manifested. Each truck will receive the proper placarding and paperwork. Water spray or mist suppressant will be applied during soil loading operations, as appropriate.

Transportation Requirements

Transportation of non-hazardous waste or hazardous waste offsite will be in accordance with DOT regulations contained in CFR, Title 49 and the California Hazardous Waste Control Law (Health and Safety Code Section 25100 et seq.; California Code of Regulations (CCR), Title 22, Section 66428 et Seq.). Vehicle idling time within the staging areas will be kept to a minimum to limit air emissions.

All waste haulers will satisfy the following requirements:

- Vehicles will have passed an annual inspection.
- Vehicle operators will be trained in the safe handling of the waste/material.
- Haulers will maintain the ability to pay damages caused by their operations through proper insurance coverage.
- Haulers will have licenses issued by the California Highway Patrol (CHP) for transportation of hazardous materials.
- Haulers will take certain actions in response to waste discharges during transport (e.g., covering the load to prevent the discharge of dust/particulates into the atmosphere during hauling).

Hazardous waste haulers will satisfy the following additional requirements:

- Haulers will have a valid DTSC registration.
- Haulers will have an EPA identification number.
- Haulers will comply with the Uniform Hazardous Waste Manifest System.

Transportation Routes

Transportation of waste will follow routes on arterial streets and freeways approved for truck traffic to minimize potential impacts on the local neighborhood. Transportation should be conducted in accordance with the National Hazardous Material Route Registry - US Department of Transportation DOT-Federal Motor Carrier Safety Administration (FMCSA) Hazardous Materials (HM) designated, preferred, or prescribed routes for transportation of hazardous materials in California. Truck routes will be determined once a disposal facility is selected, as necessary.

Traffic Control Procedures

Soil for offsite disposal will be transported in trucks from the designated soil staging areas. Prior to loading, all trucks will be staged to avoid impacts on the local streets. Traffic will be coordinated in such a manner that, at any given time, a limited number of trucks will be at the site to reduce truck traffic on surrounding surface streets and to reduce dust generation during onsite transportation. While at the site, all trucks will be required to maintain slow speeds (e.g., less than 15-miles per hour) for safety purposes, and to minimize dust generation.

Disposal of Impacted Soil

Upon acceptance of the soil by the disposal facility, impacted soil will be loaded onto trucks, covered, and transported to the approved offsite disposal/recycling facility. The following are potential non-hazardous waste disposal facilities:

- Chiquita Canyon Landfill in Castaic, California- (661) 257-3655
- TRS in Azusa, California- (626) 969-1384
- Santa Maria Sanitary Landfill in Santa Maria, California- (805) 925-0951

The following are potential non-RCRA hazardous waste disposal facilities:

- Kettleman Hills Facility in Kettleman City, California - (559) 309-7688
- Clean Harbors in Buttonwillow, California - (661) 762-6200

It will be arranged that a representative of the City of Santa Barbara will sign the waste manifests at their convenience and prior to the date of waste removal. A copy of the waste manifest will be included as an appendix to the report documenting the findings of the contaminated soil excavation, removal, and disposal. Additionally, the generator's copy of the manifest shall either be mailed to the City of Santa Barbara representative or provided to them after shipment of the waste, but before the final report is released.

Shipment Documentation and Record Keeping

Shipment Documentation

The appropriate non-hazardous waste manifest or Uniform Hazardous Waste Manifest will be used to track the movement of waste soils from the point of generation to the disposal facility. Prior to transporting the excavated soil offsite, an authorized City of Santa Barbara representative will sign each waste manifest. The City of Santa Barbara will maintain a copy of the waste manifest for each truckload onsite until completion of the project. At a minimum, the shipping documents will include the following information:

- Name and address of waste generator
- Name and address of waste hauler
- Name and address of disposal facility
- Description of the waste
- Quantity of waste shipped
- Department of Toxic Substances Control temporary 90 day EPA identification number for Uniform Hazardous Waste Manifests.

Record Keeping

Waste transportation will comply with the California Vehicle Code (CVC), CHP Regulations (13 CCR), California State Fire Marshal Regulations (19 CCR), DOT Regulations, Title 49, Code of Federal Regulations (49 CFR), and the California Health and Safety Code (HSC) and 22 CCR. These requirements include the keeping of appropriate records during transportation activities. The contractor will be responsible for maintaining a record book during onsite activities. The record book will serve to document observations, personnel onsite, as well as truck arrival and departure times.

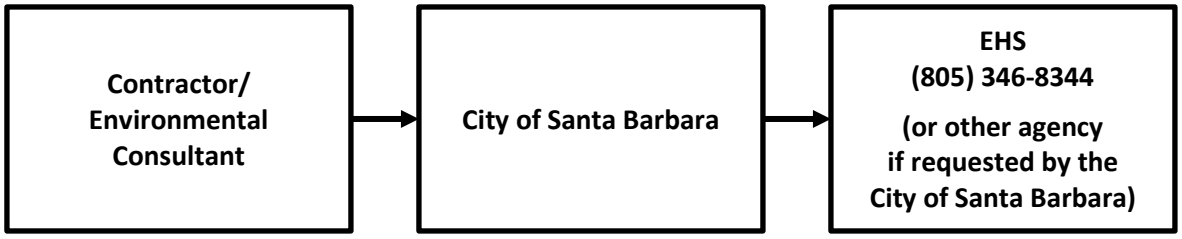
Reporting

The APCD requires that a project completion report is prepared and submitted within 60 days of completion of the project.

If a report is required by EHS it will include a summary of the excavation methodology, volumes and locations of impacted soil removed from the site, a map depicting excavation and sample locations, tabulated analytical results and copies of waste manifests. The report will be signed and stamped by a California Professional Geologist.

CAP/SMP Administrative Flow Chart

The following flow chart describes the contacts and flow of knowledge during the soil management portion of the project:



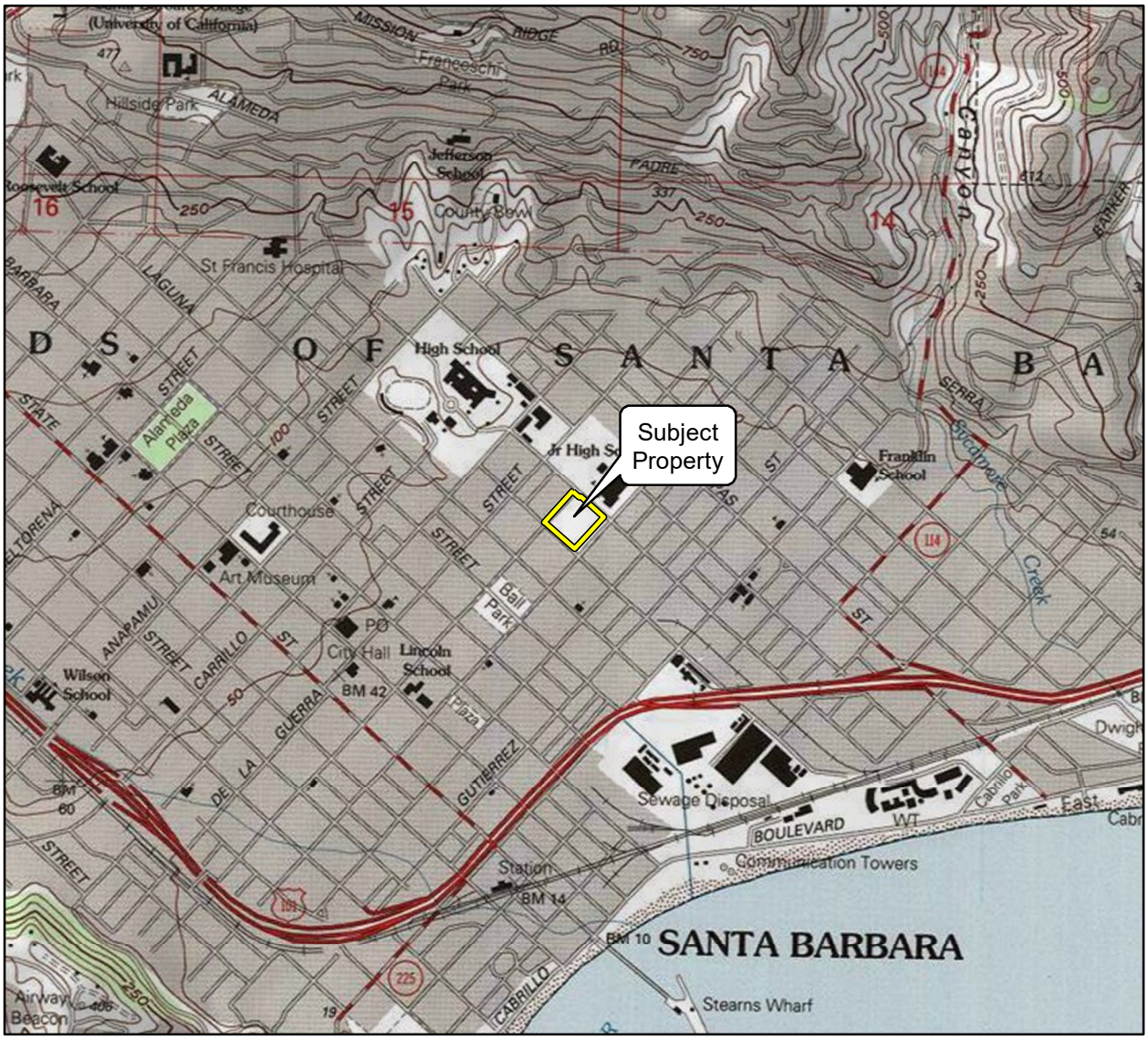
The contractor will contact the environmental consultant prior to initiation of excavation and grading in areas of the site with known contamination. If contamination is encountered in areas of the site where contamination had not previously been identified, the contractor will cease work in that area and contact the on-call Environmental Scientist. Work will not resume in the potentially contaminated area until the soil has been adequately characterized by the Environmental Scientist.

Limitations

This report has been prepared for and is intended for the exclusive use of the City of Santa Barbara and its contractor(s). The contents of this report should not be relied upon by any other party without the written consent of Rincon Consultants, Inc.

Our conclusions regarding the subject property are based on the results of limited subsurface sampling programs. The results of these evaluations are qualified by the fact that only limited sampling and analytical testing was conducted during these assessments. The concentrations of contaminants measured at any given location may not be representative of conditions at other locations. Further, conditions may change at any particular location as a function of time in response to natural conditions, chemical reactions and other events. Conclusions regarding the condition of the subject property do not represent a warranty that all areas within the subject property are similar to those sampled.

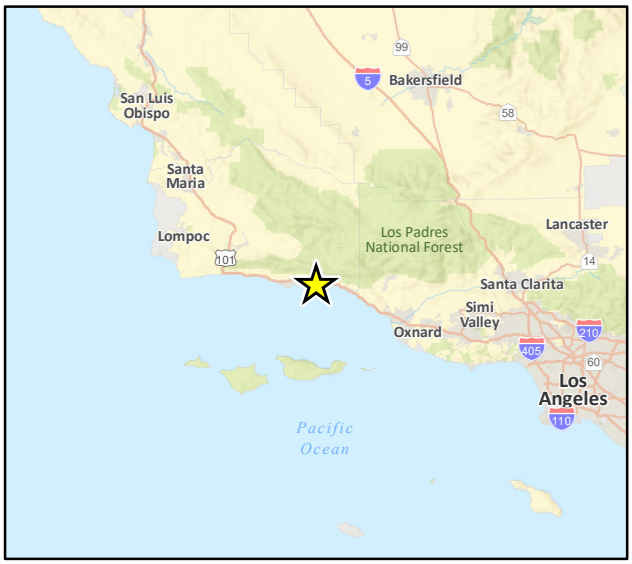
Figures



Imagery provided by National Geographic Society, Esri and its licensors © 2018. The topographic representation depicted in this map may not portray all of the features currently found in the vicinity today and/or features depicted in this map may have changed since the original topographic map was assembled.

0 1,000 2,000
Scale in Feet

N



Vicinity Map

Figure 1

Sample Location	Latitude	Longitude
HP1	34.425142	-119.690793
HP2	34.424946	-119.690714
HP3	34.424794	-119.690307
HP4	34.424541	-119.690432
HP5	34.424487	-119.690045
RB1	34.425792	-119.690202
RB2	34.425738	-119.690000
RB3	34.425601	-119.689655
RB4	34.425323	-119.689568
RB5	34.425291	-119.689246
RB6	34.425169	-119.68964
RB7	34.425385	-119.689888
RB8	34.425388	-119.690285
RB9	34.424848	-119.689661
RB10	34.42469	-119.689779
RB11	34.424873	-119.690128
RB12	34.424344	-119.689939
RB13	34.425371	-119.690729
RB14	34.424895	-119.690896
RB15	34.424696	-119.690661



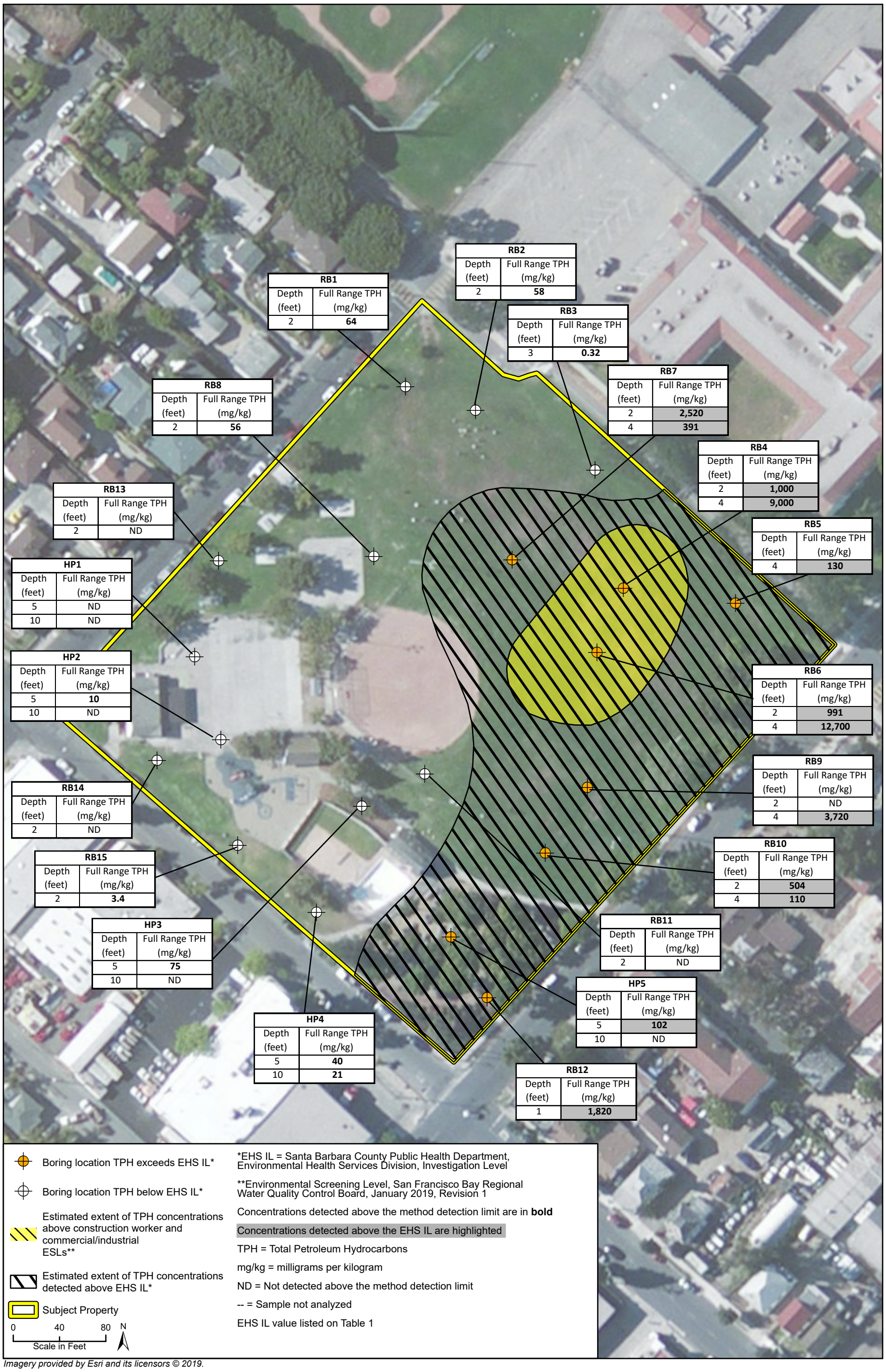
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April 16, 2019

Site Map

Figure 2

Rincon Consultants, Inc.



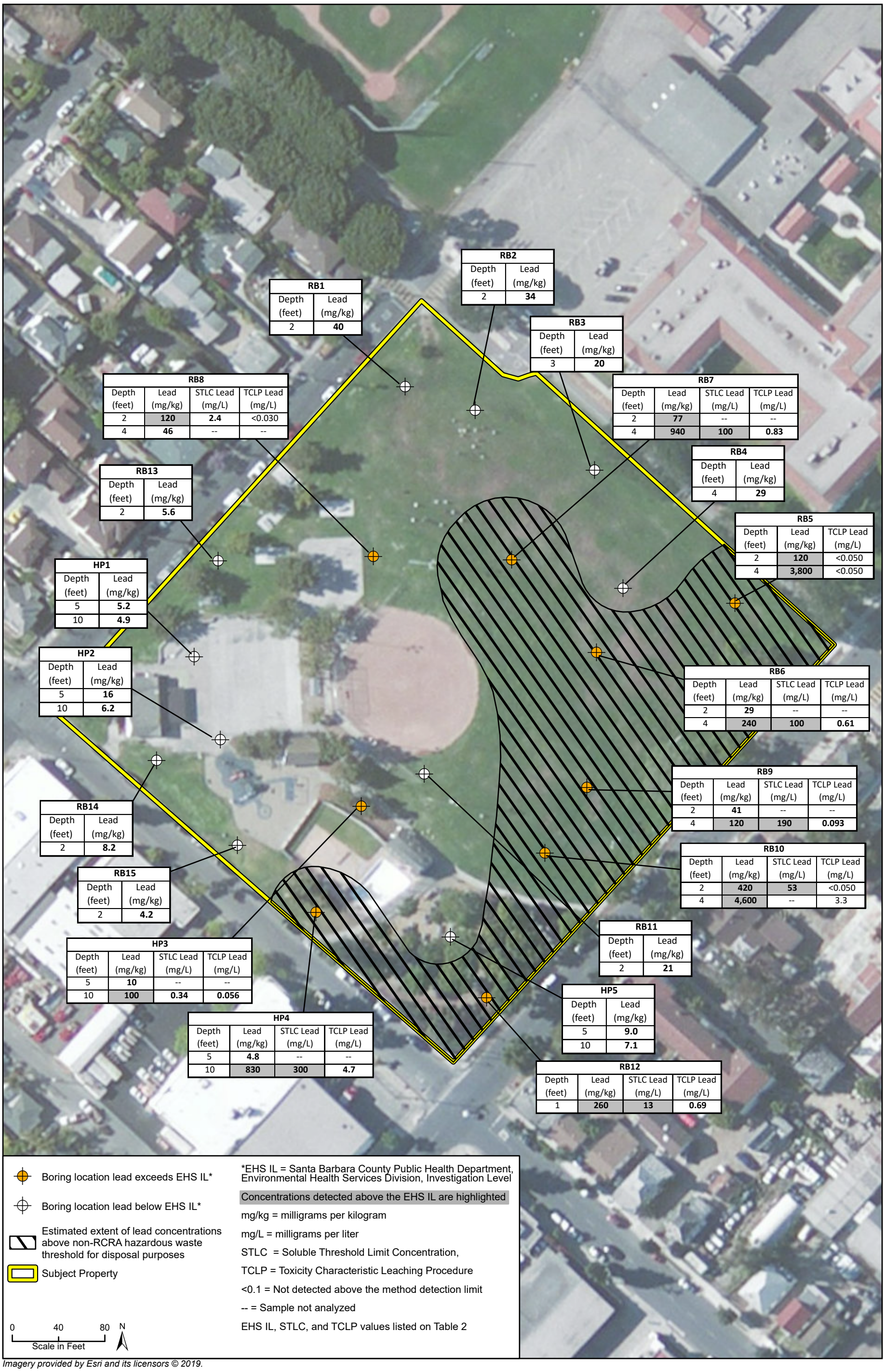
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Samples Collected on April 16, 2019

TPH Concentrations in Soil Map

Figure 3

Rincon Consultants, Inc.



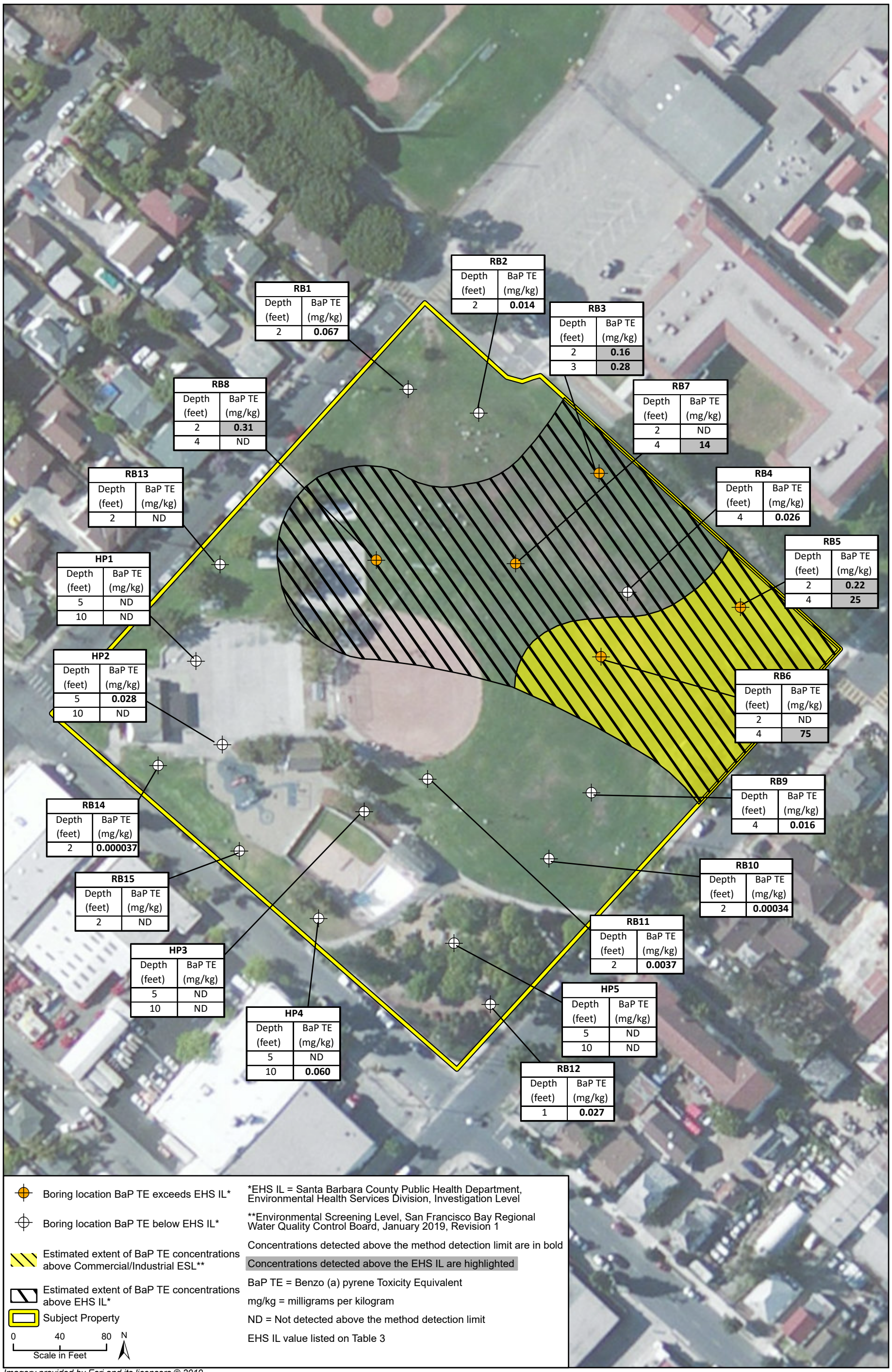
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Samples Collected on April 16, 2019

Lead Concentrations in Soil Map

Figure 4

Rincon Consultants, Inc.



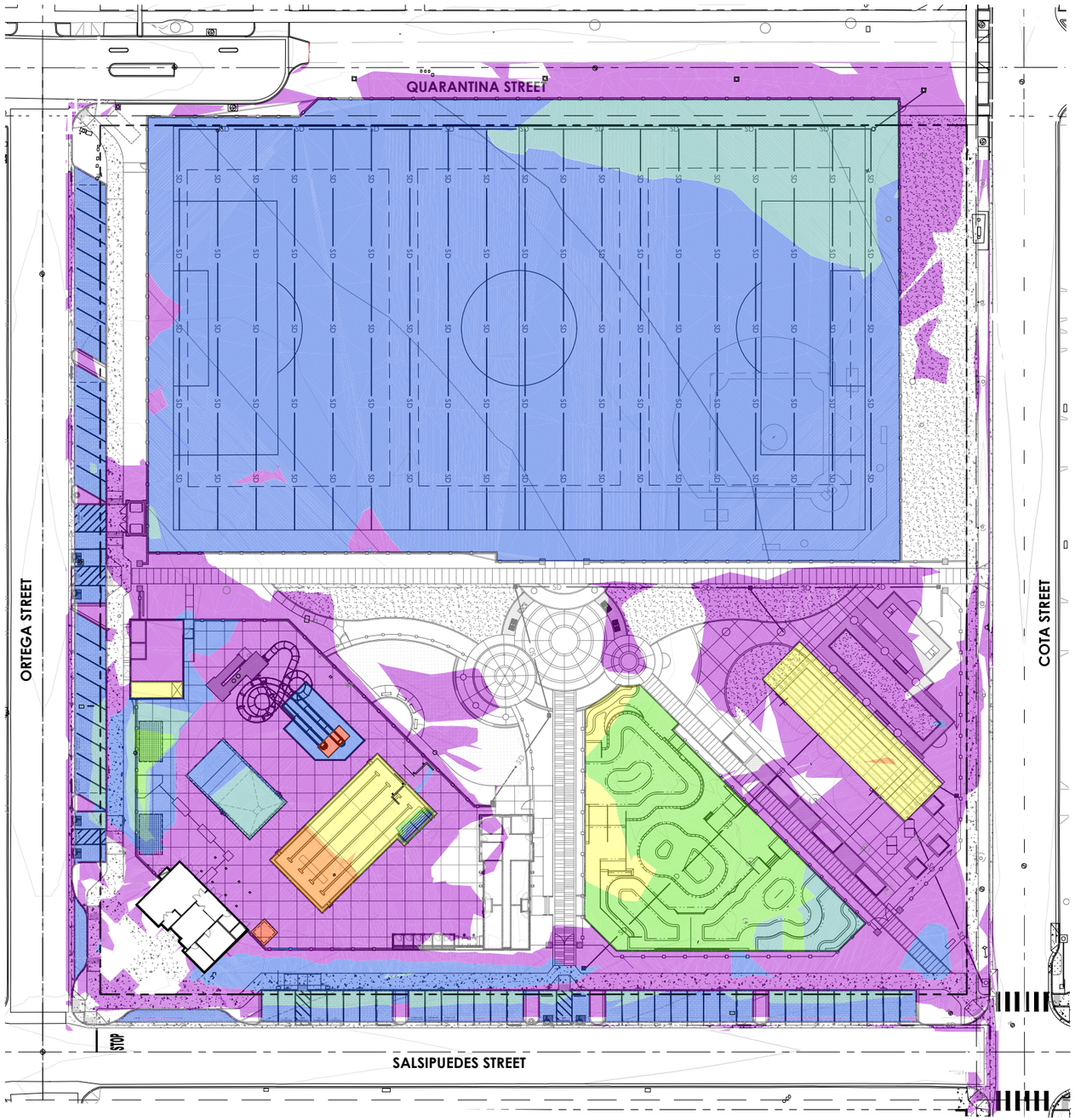
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Samples Collected on April 16, 2019

PAH Concentrations in Soil Map

Figure 5

Rincon Consultants, Inc.



GRADING NOTE:

SITE GRADING SHALL CONFORM TO THE RECOMMENDATIONS MADE BY THE GEOTECHNICAL ENGINEER IN THE APPROVED SOILS REPORT.

EARTH QUANTITIES:

AREA OF DISTURBANCE 5.5 AC±

RAW CUT: 10,600 CY
RAW FILL: 480 CY
NET: 10,120 CY CUT

QUANTITY ESTIMATES ON THESE PLANS ARE TO BE USED FOR PERMIT PURPOSES ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ACTUAL QUANTITIES FOR THE PURPOSE OF CONSTRUCTION.

THE RAW EARTHWORK QUANTITIES SHOWN HEREON REPRESENT THE ESTIMATED VOLUMETRIC DIFFERENCE BETWEEN THE PROPOSED ROUGH GRADE AND THE LIMITED TOPOGRAPHIC EXISTING GRADES. THESE ESTIMATES DO NOT MAKE CONSIDERATIONS FOR LOSSES OR BULKING DUE TO: SHRINKAGE, SOIL AMENDMENTS, STABILIZATION, CONSTRUCTION TECHNIQUE, FOOTING & TRENCHING SPOILS, ETC. THESE, IN ADDITION TO ACTUAL FIELD CONDITIONS, CONSTRUCTION TECHNIQUE AND THE FINAL RECOMMENDATIONS OF THE SOILS ENGINEER MAY SIGNIFICANTLY EFFECT THE FINAL IMPORT/EXPORT QUANTITIES.

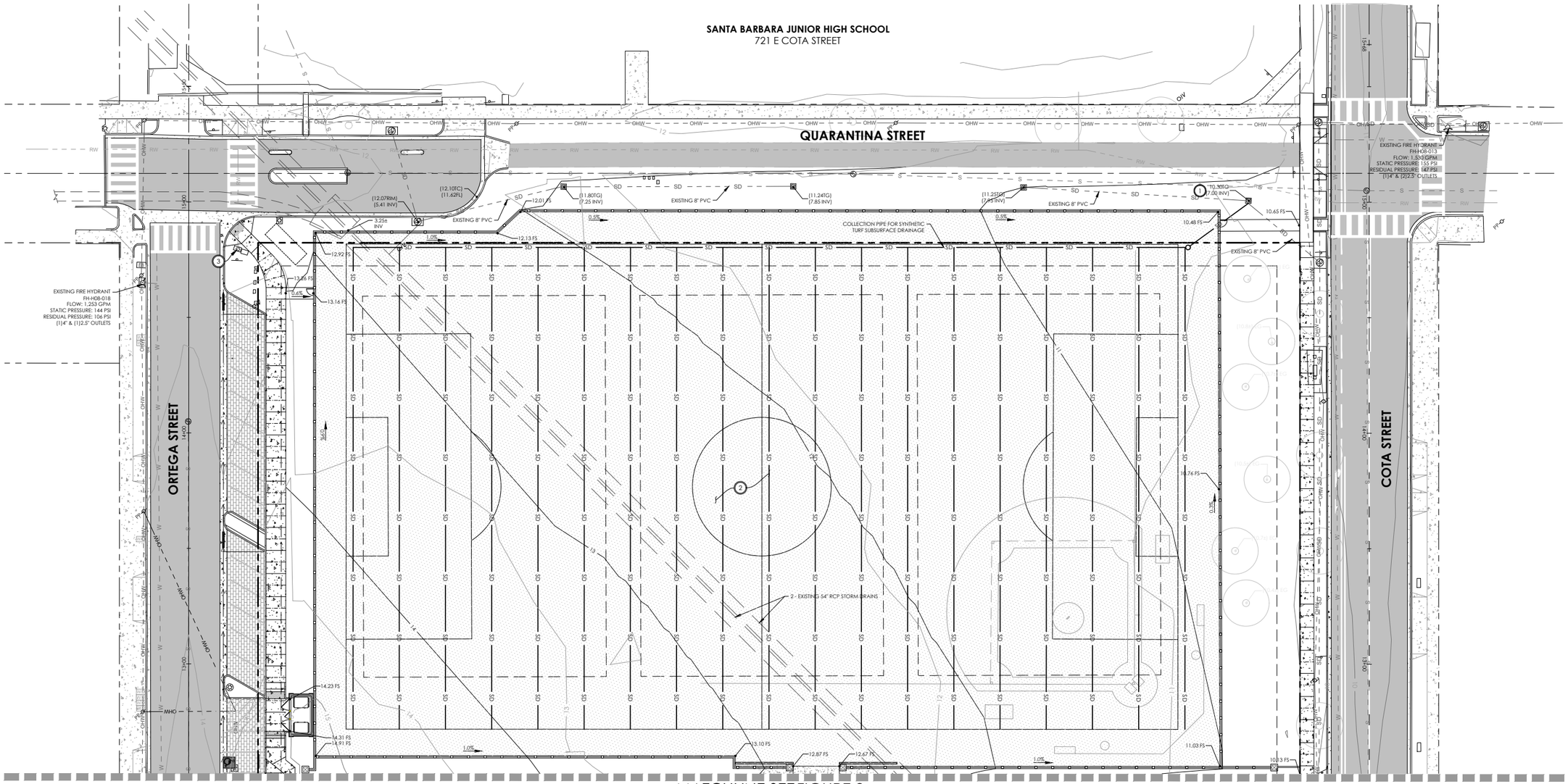
CUT FILL ANALYSIS				
NUMBER	MIN	MAX	AREA	COLOR
1	-11.00	-9.00	221 SQFT	
2	-9.00	-6.00	1,090 SQFT	
3	-6.00	-4.00	6,768 SQFT	
4	-4.00	-3.00	9,901 SQFT	
5	-3.00	-2.00	15,173 SQFT	
6	-2.00	-1.00	97,002 SQFT	
7	-1.00	0.00	61,225 SQFT	
8	0.00	2.00	47,345 SQFT	

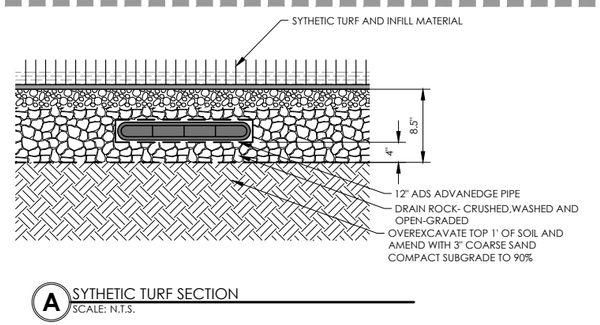
0 50 100 Feet

N

Preliminary Earthwork Map

Source: RRM Design Group, 2020





A SYTHETIC TURF SECTION
SCALE: N.T.S.

IMPROVEMENT NOTES

1. CONNECT TO EXISTING CATCH BASIN.
2. PROPOSED SYNTHETIC TURF AND SUBSURFACE DRAINAGE. SEE DETAIL 'A' THIS SHEET.
3. EXISTING 2" RECYCLED WATER METER TO BE USED FOR IRRIGATION.

LEGEND

- PROPOSED SYNTHETIC TURF
- PROPOSED BIO-RETENTION AREA
- PROPOSED CONCRETE
- PROPERTY LINE
- 821 EXISTING CONTOUR
- 821 PROPOSED CONTOUR
- PROPOSED FLOWLINE
- SD PROPOSED STORM DRAIN
- W EXISTING WATER MAIN
- S EXISTING SANITARY SEWER MAIN
- SD EXISTING STORM DRAIN
- PROPOSED GRADE BREAK

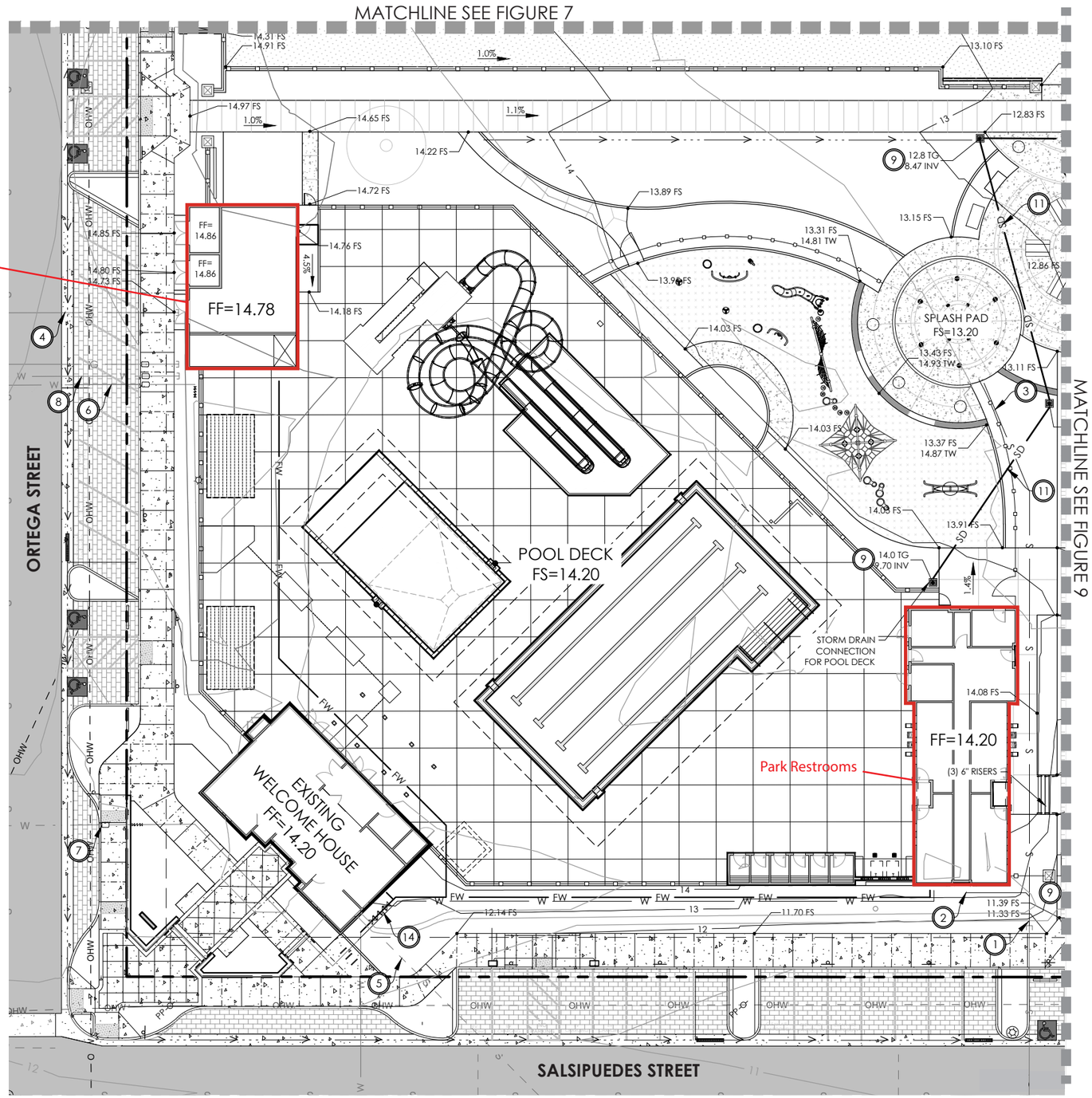
0 25 50 Feet

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Source: RRM Design Group, 2020

Preliminary Grading and Utility Plan – Playing Fields

Figure 7



IMPROVEMENT NOTES

1. PROPOSED 4" SEWER LATERAL.
2. PROPOSED RESTROOM BUILDING SEWER CONNECTION.
3. PROPOSED SPLASH PAD SEWER CONNECTION.
4. PROPOSED DEDICATED 6" SEWER LATERAL FOR POOL FACILITIES.
5. EXISTING SEWER LATERAL SERVING WELCOME HOUSE TO REMAIN.
6. EXISTING IRRIGATION METER AND BACKFLOW DEVICE TO BE UPSIZED TO 3" METER AND LINE FOR IRRIGATION USE (SYNTHETIC TURF MAINTENANCE).
7. EXISTING WATER METER AND BACKFLOW TO REMAIN FOR DOMESTIC USE (WELCOME HOUSE AND RESTROOM BUILDING).
8. PROPOSED 3" WATER METER AND SERVICE FOR POOL EQUIPMENT.
9. PROPOSED STORM DRAIN CATCH BASIN.
10. PROPOSED UNDERGROUND STORMWATER CHAMBERS. SEE DETAIL 'A' THIS SHEET.
11. PROPOSED 8" STORM DRAIN AT 1.0% MINIMUM SLOPE.
12. PROPOSED 15" STORM DRAIN AT 1.0% MINIMUM SLOPE.
13. PROPOSED 15" STORM DRAIN CONNECTION TO EXISTING CURB INLET.
14. PROPOSED FIRE WATER LINE AND BACKFLOW PREVENTER.

LEGEND

- PROPOSED SYNTHETIC TURF
- PROPOSED BIO-RETENTION AREA
- PROPOSED CONCRETE
- PROPERTY LINE
- 821 EXISTING CONTOUR
- 821 PROPOSED CONTOUR
- PROPOSED FLOWLINE
- SD PROPOSED STORM DRAIN
- W EXISTING WATER MAIN
- S EXISTING SANITARY SEWER MAIN
- SD EXISTING STORM DRAIN
- PROPOSED GRADE BREAK

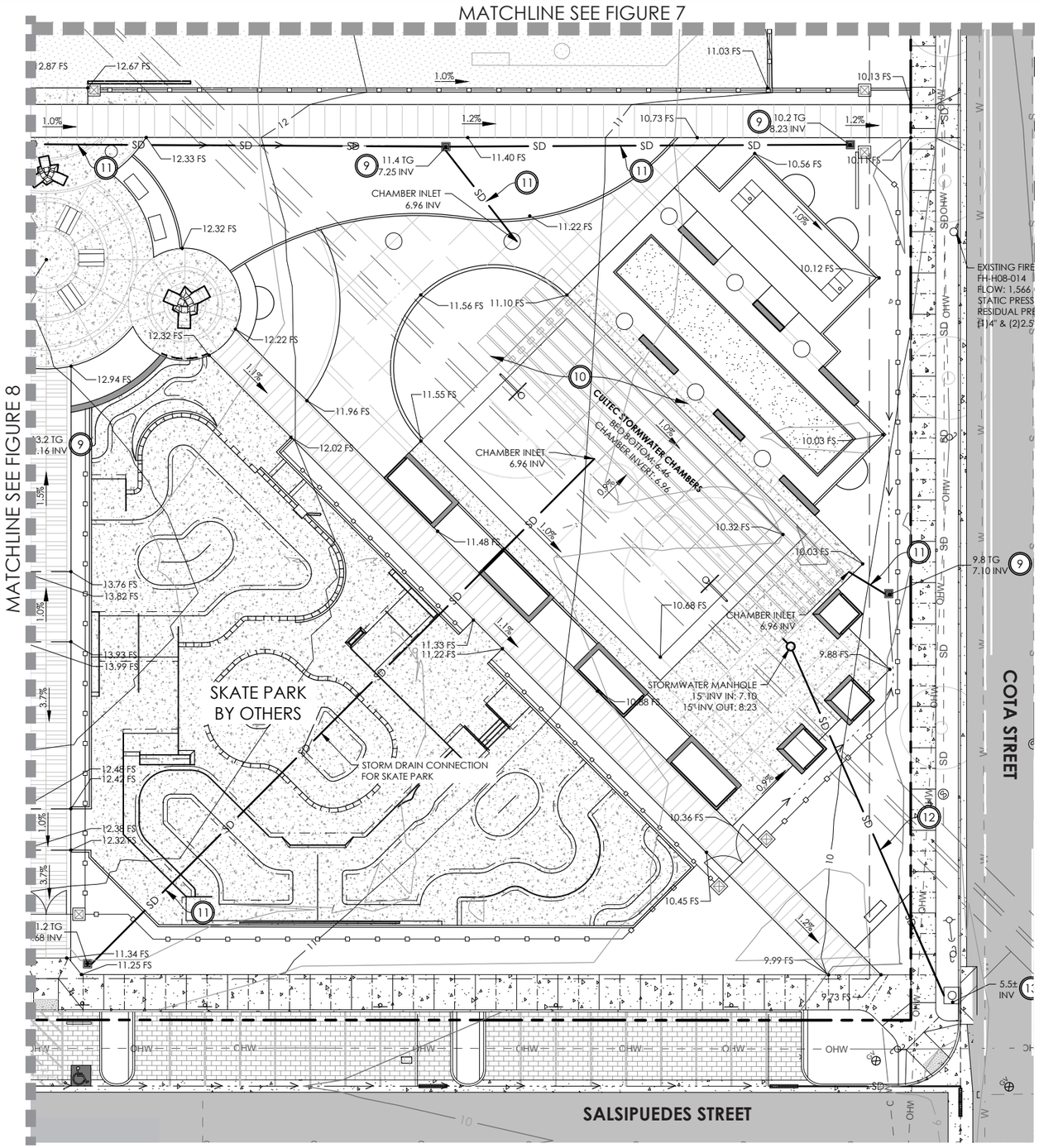
0 15 30 Feet

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Preliminary Grading and Utility Plan – Aquatics

Source: RRM Design Group, 2020

Figure 8



IMPROVEMENT NOTES

1. PROPOSED 4" SEWER LATERAL.
2. PROPOSED RESTROOM BUILDING SEWER CONNECTION.
3. PROPOSED SPLASH PAD SEWER CONNECTION.
4. PROPOSED DEDICATED 6" SEWER LATERAL FOR POOL FACILITIES.
5. EXISTING SEWER LATERAL SERVING WELCOME HOUSE TO REMAIN.
6. EXISTING IRRIGATION METER AND BACKFLOW DEVICE TO BE UPSIZED TO 3" METER AND LINE FOR IRRIGATION USE (SYNTHETIC TURF MAINTENANCE).
7. EXISTING WATER METER AND BACKFLOW TO REMAIN FOR DOMESTIC USE (WELCOME HOUSE AND RESTROOM BUILDING).
8. PROPOSED 3" WATER METER AND SERVICE FOR POOL EQUIPMENT.
9. PROPOSED STORM DRAIN CATCH BASIN.
10. PROPOSED UNDERGROUND STORMWATER CHAMBERS. SEE DETAIL 'A' THIS SHEET.
11. PROPOSED 8" STORM DRAIN AT 1.0% MINIMUM SLOPE.
12. PROPOSED 15" STORM DRAIN AT 1.0% MINIMUM SLOPE.
13. PROPOSED 15" STORM DRAIN CONNECTION TO EXISTING CURB INLET.
14. PROPOSED FIRE WATER LINE AND BACKFLOW PREVENTER.

LEGEND

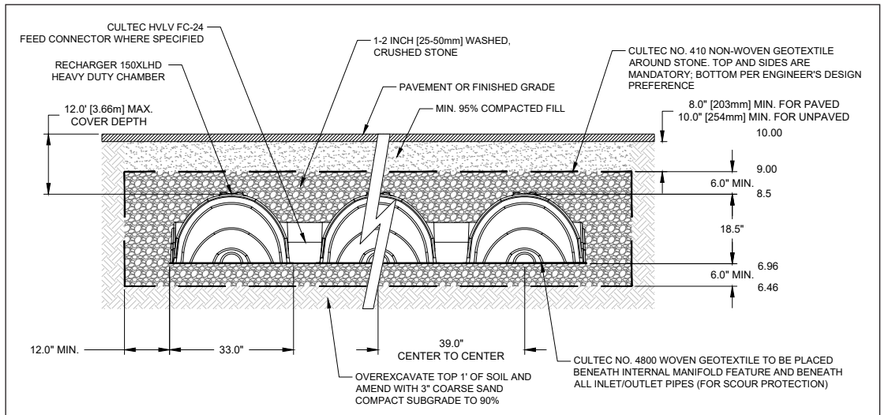
- PROPOSED SYNTHETIC TURF
- PROPOSED BIO-RETENTION AREA
- PROPOSED CONCRETE
- PROPERTY LINE
- 821 EXISTING CONTOUR
- 821 PROPOSED CONTOUR
- PROPOSED FLOWLINE
- SD PROPOSED STORM DRAIN
- W EXISTING WATER MAIN
- S EXISTING SANITARY SEWER MAIN
- SD EXISTING STORM DRAIN
- PROPOSED GRADE BREAK

0 15 30 Feet

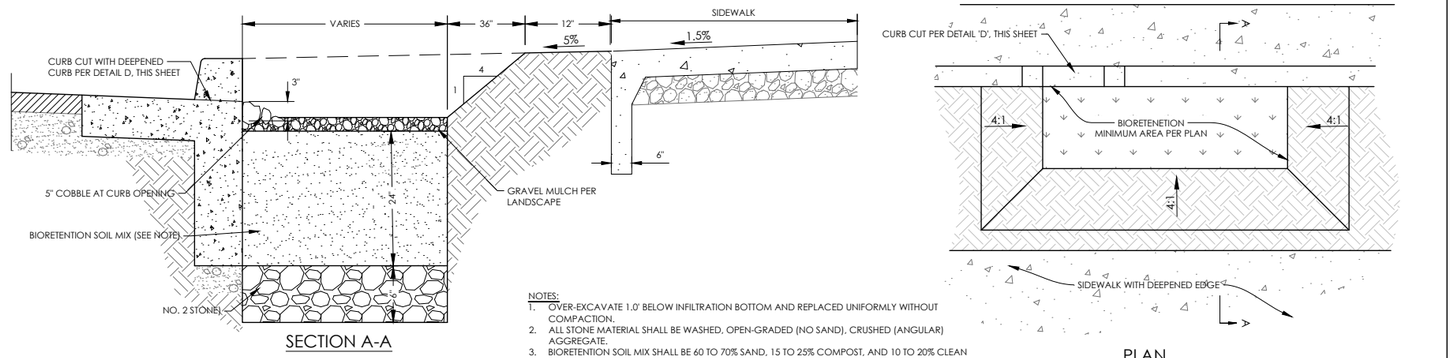
Source: RRM Design Group, 2020

Preliminary Grading and Utility Plan – Skate Park and Stormwater Chambers

Figure 9

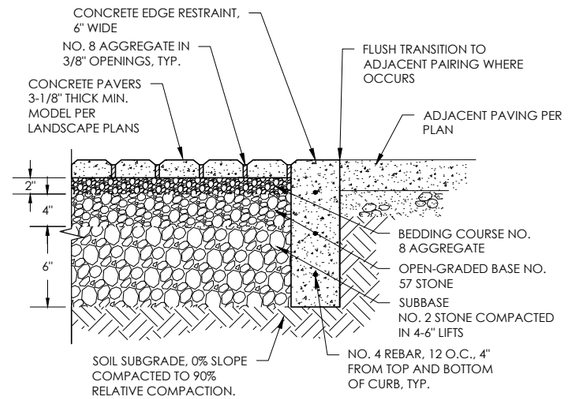


A CULTEC STORMWATER CHAMBERS
SCALE: N.T.S.



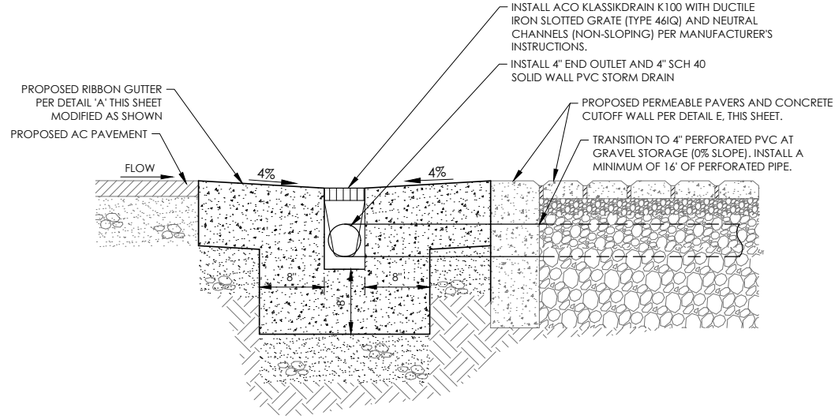
NOTES:
1. OVER-EXCAVATE 1.0' BELOW INFILTRATION BOTTOM AND REPLACED UNIFORMLY WITHOUT COMPACTION.
2. ALL STONE MATERIAL SHALL BE WASHED, OPEN-GRADED (NO SAND), CRUSHED (ANGULAR) AGGREGATE.
3. BIORETENTION SOIL MIX SHALL BE 60 TO 70% SAND, 15 TO 25% COMPOST, AND 10 TO 20% CLEAN TOPSOIL. THE ORGANIC CONTENT SHALL BE 8 TO12% AND PH RANGE SHALL BE 5.5 TO 7.5.
4. EXTEND DEEPENED CURB AND SIDEWALK EDGE 5' BEYOND BOTH SIDES OF BIORETENTION AREA.

B BIORETENTION CROSS-SECTION
SCALE: N.T.S.



NOTES:
1. ALL AGGREGATE BASE MATERIAL SHALL BE WASHED, OPEN-GRADED (NO SAND), CRUSHED (ANGULAR) AGGREGATE.

C PERMEABLE PAVEMENT
SCALE: N.T.S.



NOTES:
1. INSTALL TWO ONE-METER (39.37") CHANNELS AT EACH TRENCH DRAIN LOCATION.

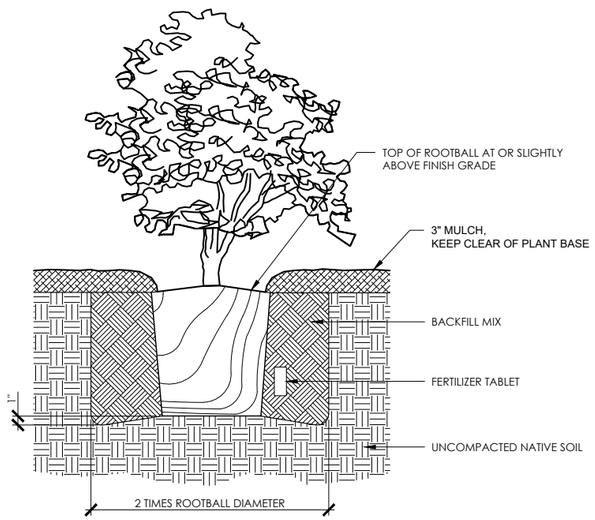
D TRENCH DRAIN TO PERMEABLE PAVEMENT
SCALE: N.T.S.

Preliminary Permeable Features Construction Details

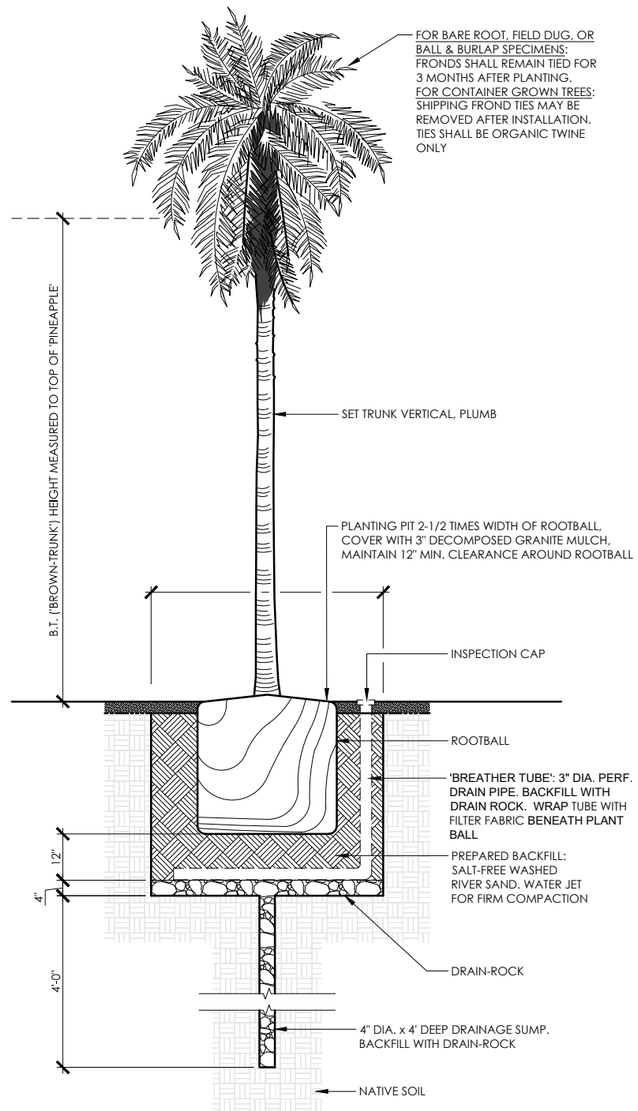
Source: RRM Design Group, 2020

Figure 10

Rincon Consultants, Inc.

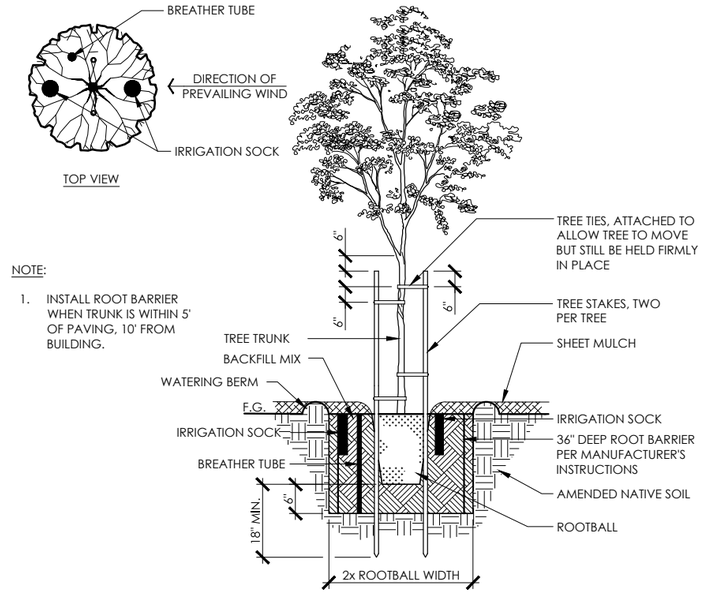


1 SHRUB PLANTING
1 1/2" = 1'-0" 329333-48



NOTE:
1. CONTRACTOR SHALL STAKE SPECIMEN PALM TREES IN THE EVENT PLANT CANNOT SUPPORT ITSELF.

2 PALM TREE PLANTING
1/2" = 1'-0" RRM-1144.01-09



3 TREE PLANTING WITH WOOD STAKING
1/2" = 1'-0" RRM-1144.01-11

Preliminary Plantings Details

Source: RRM Design Group, 2020

Figure 11

Tables

TABLE 1

Summary of TPH, VOCs, and PCBs in Soil Matrix Samples

Ortega Park Phase II Environmental Site Assessment

604 East Ortega Street, Santa Barbara, California

Sample Location	Sample Depth (feet)	TPH				VOCs		PCBs
		TPHg (C_4-C_{12})	TPHd (C_{13}-C_{22})	TPHo (C_{23}-C_{40})	Full Range TPH	4-Isopropyl Toluene	Other VOCs	
		Results in milligrams per kilogram (mg/kg)						
RB1	**2**	<0.00099	<7.6	**64**	**64**	--	--	--
	4	--	--	--	--	--	--	--
RB2	**2**	<0.098	<7.6	**58**	**58**	--	--	--
	4	--	--	--	--	--	--	--
RB3	**2**	--	--	--	--	--	--	--
	3	**0.32**	<7.6	<40	**0.32**	**0.12**	ND	<0.010
RB4	**2**	<0.097	**110**	**890**	**1,000**	--	--	--
	4	<0.099	**1,000**	**8,000**	**9,000**	<0.0020	ND	<0.010
RB5	**2**	--	--	--	--	--	--	--
	4	<0.10	<7.5	**130**	**130**	<0.0020	ND	--
RB6	**2**	<0.099	**31**	**960**	**991**	<0.0020	ND	--
	4	<0.10	**5,800**	**6,900**	**12,700**	<0.0020	ND	--
RB7	**2**	<0.097	**120**	**2,400**	**2,520**	--	--	--
	4	<0.10	**31**	**360**	**391**	<0.0020	ND	<0.030
RB8	**2**	<0.098	<7.6	**56**	**56**	--	--	--
	4	--	--	--	--	--	--	--
RB9	**2**	<0.098	<7.6	<40	ND	--	--	--
	4	<0.10	**420**	**3,300**	**3,720**	<0.0020	ND	<0.010
RB10	**2**	<0.099	**54**	**450**	**504**	<0.0020	ND	--
	4	<0.099	<7.6	**110**	**110**	--	--	--
RB11	**2**	<0.099	<7.6	<40	ND	--	--	--
	4	--	--	--	--	--	--	--
RB12	**1**	<0.10	**120**	**1,700**	**1,820**	<0.0020	ND	<0.010
RB13	**2**	<0.098	<7.5	<40	ND	--	--	--
	4	--	--	--	--	--	--	--
RB14	**2**	<0.099	<7.6	<40	ND	--	--	--
	4	--	--	--	--	--	--	--
RB15	**2**	**3.4**	<7.6	<40	**3.4**	--	--	--
	4	--	--	--	--	--	--	--
HP1	**5**	<0.097	<7.6	<40	ND	<0.0020	ND	--
	10	--	<7.6	<40	ND	<0.0020	ND	--
HP2	**5**	<0.10	**9.6**	<40	**10**	--	--	--
	10	<0.096	<7.6	<40	ND	--	--	--
HP3	**5**	<0.097	<7.6	**75**	**75**	--	--	--
	10	<0.098	<7.5	<40	ND	--	--	--
HP4	**5**	<0.097	<7.6	**40**	**40**	--	--	--
	10	<0.20	**21**	<40	**21**	<0.0020	ND	--
HP5	**5**	<0.099	**10**	**92**	**102**	--	--	--
	10	<0.098	<7.6	<40	ND	--	--	--
EHS IL		*100*	*100*	*100*	*100*	--	*varies*	*0.23*
Tier 1 ESL		*100*	*260*	*1,600*	--	--	*varies*	*0.23*
ESL (C/I)		*2,000*	*1,200*	*180,000*	--	--	*varies*	*0.94*
ESL (CW)		*1,800*	*1,100*	*54,000*	--	--	*varies*	*5.5*

Soil samples collected by Rincon Consultants on April 16, 2019

Concentrations detected above the method detection limit are in **bold**

Concentrations detected above the EHS IL are highlighted grey

TPH = Total Petroleum Hydrocarbons

TPHg = TPH as gasoline

TPHd = TPH as diesel fuel

TPHo = TPH as motor oil

VOCs = Volatile Organic Compounds

PCBs = Polychlorinated Biphenyls

EHS IL = Santa Barbara County Public Health Department, Environmental Health Services Division, Investigation Level

ESL = Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, January 2019, Rev. 1

Tier 1 ESL = Based on a generic conceptual site model designed for use at most sites

ESL (C/I) = Commercial/Industrial: Shallow Soil Exposure - Direct Exposure Human Health Risk Levels (Table S-1)

ESL (CW) = Any Land Use/Any Depth Soil Exposure: Construction Worker - Direct Exposure Human Health Risk Levels (Table S-1)

mg/kg = milligrams per kilogram

<0.1 = Not detected above the method detection limit

ND = Not detected above the method detection limit

-- = Value not established

Soil samples analyzed by Oilfield Environmental and Compliance, Inc.

Analyses:

Full Range TPH by EPA Method 8015M

VOCs by EPA Method 8260B

PCBs by EPA Method 8082

TABLE 2
Summary of Metals in Soil Matrix Samples
Ortega Park Phase II Environmental Site Assessment
604 East Ortega Street, Santa Barbara, California

Sample Location	Sample Depth (Feet)	Antimony	Arsenic	Barium	STLC Barium (mg/L)	Beryllium	Cadmium	Chromium	STLC Chromium (mg/L)	TCLP Chromium (mg/L)	Cobalt	Copper	Lead	STLC Lead (mg/L)	TCLP Lead (mg/L)	Mercury	STLC Mercury (mg/L)	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	STLC Zinc (mg/L)
		Results in milligrams per kilogram (mg/kg) unless otherwise noted																							
RB1	2	<0.95	**4.4**	**74**	--	**0.38**	<0.14	**22**	--	--	**4.3**	**18**	**40**	--	--	**0.078**	--	**0.40**	**19**	<0.95	<0.19	**1.9**	**27**	**65**	--
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RB2	2	<1.0	**4.9**	**67**		**0.37**	<0.15	**22**			**4.4**	**22**	**34**	--	--	**0.079**		**0.59**	**18**	<1.0	<0.20	**1.7**	**25**	**63**	--
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RB3	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	3	<0.99	**10**	**57**	--	**0.31**	<0.15	**15**	--	--	**4.1**	**14**	**20**	--	--	**0.049**	--	**0.27**	**15**	<0.99	<0.20	**1.8**	**20**	**41**	--
RB4	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4	<0.93	**3.3**	**57**	--	**0.28**	<0.14	**15**	--	--	**4.1**	**11**	**29**	--	--	**0.32**	--	**0.59**	**14**	<0.93	<0.19	**1.6**	**22**	**90**	--
RB5	2	--	--	--	--	--	--	**15**	--	--	--	--	**120**	--	<0.050	**0.075**	--	--	--	--	--	--	--	--	--
	4	**9.9**	**5.0**	**500**	--	**0.25**	<0.15	**120**	**0.071**	<0.025	**5.7**	**150**	**3,800**	--	<0.050	**2.1**	<0.00050	**0.62**	**21**	<0.97	<0.19	<0.48	**16**	**1,100**	--
RB6	2	--	--	--	--	--	--	--	--	--	--	--	**29**	--	--	--	--	--	--	--	--	--	--	**39**	--
	4	**2.7**	**4.7**	**680**	--	<0.24	**3.1**	**20**	--	--	**2.9**	**46**	**240**	**100**	**0.61**	**0.067**	--	<0.24	**16**	<0.96	<0.19	**1.4**	**7.3**	**3,300**	**330**
RB7	2	--	**5.9**	**100**	--	--	--	**13**	--	--	--	--	**77**	--	--	--	--	--	--	--	--	--	--	--	--
	4	**5.9**	**20**	**1,200**	**13**	<0.24	<0.14	**72**	**0.19**	--	**7.1**	**170**	**940**	**100**	**0.83**	**0.44**	--	**1.9**	**120**	<0.96	<0.19	<0.48	**5.8**	**380**	--
RB8	2	<0.93	**3.2**	**72**	--	**0.27**	<0.14	**14**	--	--	**4.0**	**24**	**120**	**2.4**	<0.030	**0.15**	--	<0.23	**15**	<0.93	<0.19	**0.55**	**17**	**100**	--
	4	--	--	--	--	--	--	--	--	--	--	--	**46**	--	--	--	--	--	--	--	--	--	--	--	--
RB9	2	--	--	--	--	--	--	--	--	--	--	--	**41**	--	--	--	--	--	--	--	--	<0.49	--	--	--
	4	<0.95	**4.2**	**640**	--	**0.46**	<0.14	**20**	--	--	**7.6**	**16**	**120**	**190**	**0.093**	**0.45**	--	**0.32**	**16**	<0.95	**13**	**2.0**	**26**	**120**	--
RB10	2	**2.1**	**3.7**	**260**	--	**0.28**	<0.15	**40**	--	--	**5.1**	**42**	**420**	**53**	<0.050	**1.3**	--	**0.46**	**14**	<0.99	**0.65**	**1.1**	**19**	**630**	--
	4	--	--	--	--	--	--	--	--	--	--	--	**4,600**	--	**3.3**	--	--	--	--	--	--	--	--	--	--
RB11	2	<0.98	**3.4**	**74**	--	**0.26**	**0.19**	**19**	--	--	**3.2**	**12**	**21**	--	--	**0.065**	--	**1.4**	**16**	<0.98	<0.20	**2.0**	**31**	**51**	--
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.47	--	--	--
RB12	1	<0.99	**4.7**	**150**	--	**0.28**	**1.8**	**17**	--	--	**5.6**	**54**	**260**	**13**	**0.69**	**0.47**	--	<0.25	**19**	<0.99	<0.20	**0.61**	**20**	**630**	--
RB13	2	<0.95	**3.7**	**96**	--	**0.53**	<0.14	**23**	--	--	**3.0**	**12**	**5.6**	--	--	**0.034**	--	<0.24	**19**	<0.95	<0.19	**0.95**	**31**	**33**	--
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RB14	2	<0.92	**4.9**	**53**	--	**0.32**	<0.14	**22**	--	--	**4.1**	**7.5**	**8.2**	--	--	**0.024**	--	**2.2**	**23**	<0.92	<0.18	**2.1**	**21**	**31**	--
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.48	--	--	--
RB15	2	<0.97	**3.9**	**25**	--	**0.29**	<0.15	**18**	--	--	**3.8**	**5.9**	**4.2**	--	--	**0.013**	--	**1.3**	**20**	<0.97	<0.19	**1.7**	**19**	**24**	--
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HP1	5	<0.93	**2.8**	**96**	--	**0.44**	<0.14	**12**	--	--	**6.4**	**6.1**	**5.2**	--	--	**0.0099**	--	<0.23	**12**	<0.93	<0.19	<0.46	**22**	**11**	--
	10	<0.92	**2.0**	**57**	--	**0.31**	<0.14	**11**	--	--	**2.5**	**6.3**	**4.9**	--	--	<0.010	--	<0.23	**8.2**	<0.92	<0.18	<0.46	**17**	**18**	--
HP2	5	<0.95	**2.4**	**95**	--	**0.42**	<0.14	**14**	--	--	**7.2**	**12**	**16**	--	--	**0.29**	--	<0.24	**14**	<0.95	<0.19	**0.76**	**22**	**32**	--
	10	<1.0	**5.2**	**44**	--	**0.50**	<0.15	**15**	--	--	**3.9**	**9.5**	**6.2**	--	--	<0.010	--	**0.64**	**19**	<1.0	<0.20	**1.0**	**23**	**31**	--
HP3	5	<0.97	**2.5**	**61**	--	**0.40**	<0.15	**13**	--	--	**5.4**	**8.4**	**10**	--	--	**0.028**	--	<0.24	**11**	<0.97	<0.19	**1.0**	**21**	**23**	--
	10	<0.97	**5.5**	**130**	--	**0.72**	<0.15	**25**	--	--	**6.4**	**23**	**100**	**0.34**	**0.056**	**0.17**	--	<0.24	**17**	<0.97	<0.19	**0.65**	**38**	**360**	--
HP4	5	<0.99	**4.1**	**36**	--	**0.27**	<0.15	**18**	--	--	**3.5**	**5.7**	**4.8**	--	--	**0.017**	--	**1.4**	**19**	<0.99	<0.20	**1.9**	**18**	**25**	--
	10	**1.2**	**3.9**	**360**	--	**0.29**	<0.14	**20**	--	--	**3.7**	**79**	**830**	**300**	**4.7**	**0.66**	--	<0.23	**15**	<0.93	**1.9**	**0.46**	**18**	**1,200**	--
HP5	5	<0.93	**3.2**	**130**	--	**0.51**	<0.14	**28**	--	--	**6.8**	**17**	**9.0**	--	--	**0.014**	--	<0.23	**33**	<0.93	<0.19	**2.8**	**34**	**200**	--
	10	**1.1**	**5.3**	**170**	--	**0.67**	<0.14	**44**	--	--	**8.7**	**20**	**7.1**	--	--	**0.016**	--	<0.23	**50**	<0.91	<0.18	**2.7**	**38**	**59**	--
Background Concentration		*0.15 - 1.95*	*0.6 - 11*	*133 - 1,400*		*0.25 - 2.70*	*0.05 - 1.70*	*23 - 1,579*			*2.7 - 46.9*	*9.1 - 96.4*	*12.4 - 97.1*			*0.05 - 0.90*		*0.1 - 9.6*	*9.0 - 509*	*0.015 - 0.430*	*0.10 - 8.3*	*0.17 - 1.1*	*39 - 288*	*88 - 236*	
EHS IL		*11*	*11*	*1,000*		*7.5*	*10*	*50*			*23*	*250*	*50*			*2*		*390*	*200*	*10*	*50*	*2*	*240*	*2,500*	
Tier 1		*11*	*0.067*	*390*		*5.0*	*1.9*	*16*			*23*	*18*	*32*			*13*		*6.9*	*86*	*2.4*	*25*	*0.78*	*18*	*34*	
ESLs (C/I)		*160*	*0.31*	*220,000*		*230*	*1,100*	*1,800,000*			*350*	*47,000*	*320*			*190*		*5,800*	*11,000*	*5,800*	*5,800*	*12*	*5,800*	*350,000*	
ESL (CW)		*50*	*0.98*	*3,000*		*27*	*5,100*	*53,000*			*28*	*14,000*	*160*			*44*		*1,800*	*86*	*1,700*	*1,800*	*3.5*	*470*	*110,000*	
TTLC		*500*	*500*	*10,000*		*75*	*100*	*2,500*			*8,000*	*2,500*	*1,000*			*20*		*3,500*	*2,000*	*100*	*500*	*700*	*2,400*	*5,000*	
STLC (mg/L)		*15*	*5*	*100*		*0.75*	*1*	*5*			*80*	*25*	*5*			*0.2*		*350*	*20*	*1*	*5*	*7*	*24*	*250*	
TCLP (mg/L)		*--*	*5*	*100*		*--*	*1*	*5*			*--*	*--*	*5*			*0.2*		*--*	*--*	*1*	*5*	*--*	*--*	*--*	

Soil samples collected by Rincon Consultants on April 16, 2019
Concentrations detected above the method detection limit are in **bold**
Concentrations detected above EHS ILs are highlighted grey
Background Concentration = Kearney, *Background Concentrations of Trace and Major Elements in California Soils*, University of California, 1996
EHS IL = Santa Barbara County Public Health Department, Environmental Health Services Division, Investigation Level
ESL = Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, January 2019, Rev. 1
Tier 1 ESL = Based on a generic conceptual site model designed for use at most sites
ESL (C/I) = Commercial/Industrial: Shallow Soil Exposure - Direct Exposure Human Health Risk Levels (Table S-1)
ESL (CW) = Any Land Use/Any Depth Soil Exposure: Construction Worker - Direct Exposure Human Health Risk Levels (Table S-1)
TTLC = Total Threshold Limit Concentration, California Code of Regulations, Title 22, Chapter 11, Article 3
STLC = Soluble Threshold Limit Concentration, California Code of Regulations, Title 22, Chapter 11, Article 3
TCLP = Toxicity characteristic leaching procedure, USEPA
mg/L = milligrams per liter
mg/kg = milligrams per kilogram
<0.1 = Not detected above the method detection limit
-- = Sample not analyzed or value not established
Soil samples analyzed by Oilfield Environmental and Compliance, Inc.

Analyses:
CAM17 Metals by EPA Method 6010B/7471A

TABLE 3
Summary of PAHs in Soil Matrix Samples
Ortega Park Phase II Environmental Site Assessment
604 East Ortega Street, Santa Barbara, California

Sample Location	Sample Depth (feet)	Acenaphthene	Acenaphthylene	Anthracene	Benz (a) anthracene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (a) pyrene	Benzo (g,h,i) perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene Toxicity Equivalent Concentration
		Results in milligrams per kilogram (mg/kg)																
RB1	2	<0.0060	**0.0060**	<0.0060	**0.020**	**0.031**	**0.032**	**0.059**	**0.072**	**0.029**	<0.010	**0.062**	<0.0060	**0.023**	<0.010	**0.023**	**0.14**	**0.067**
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RB2	2	<0.0060	**0.0067**	<0.0060	**0.0080**	**0.0093**	**0.013**	**0.012**	<0.010	**0.013**	<0.010	**0.017**	<0.0060	<0.0060	**0.039**	**0.015**	**0.020**	**0.014**
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RB3	2	<0.030	<0.030	<0.030	**0.050**	**0.097**	**0.077**	**0.14**	**0.21**	**0.067**	<0.050	**0.15**	<0.030	**0.063**	<0.050	**0.067**	**0.31**	**0.16**
	3	**0.042**	<0.0030	**0.096**	**0.22**	**0.23**	**0.19**	**0.21**	**0.060**	**0.26**	**0.014**	**0.480**	**0.040**	**0.063**	**0.018**	**0.39**	**0.40**	**0.28**
RB4	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4	<0.012	<0.012	<0.012	<0.012	**0.015**	**0.015**	**0.024**	**0.032**	**0.016**	<0.020	**0.031**	<0.012	<0.012	<0.020	**0.016**	**0.059**	**0.026**
RB5	2	<0.012	**0.020**	**0.012**	**0.051**	**0.11**	**0.088**	**0.19**	**0.28**	**0.077**	<0.020	**0.20**	<0.012	**0.083**	<0.020	**0.061**	**0.41**	**0.22**
	4	<0.060	**1.3**	**0.73**	**2.9**	**6.5**	**4.4**	**22**	**67**	**4.2**	**0.14**	**18**	**0.11**	**15**	**0.23**	**3.5**	**61**	**25**
RB6	2	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.040	<0.024	<0.040	<0.024	<0.024	<0.024	<0.040	<0.024	<0.024	ND
	4	**0.90**	**25**	**24**	**36**	**30**	**39**	**59**	**47**	**51**	**5.2**	**130**	**11**	**40**	**42**	**200**	**150**	**75**
RB7	2	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<0.60	<1.0	<0.60	<1.0	<0.60	<0.60	<0.60	<1.0	<0.60	<0.60	ND
	4	**0.92**	**0.91**	**0.85**	**1.7**	**3.8**	**2.6**	**12**	**42**	**2.4**	**0.11**	**11**	**0.21**	**8.5**	**0.23**	**4.6**	**31**	**14**
RB8	2	<0.024	**0.027**	**0.027**	**0.045**	**0.13**	**0.053**	**0.27**	**0.65**	**0.064**	<0.040	**0.39**	<0.024	**0.17**	<0.040	**0.15**	**0.81**	**0.31**
	4	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0050	**0.0030**	<0.0030	<0.0030	<0.0050	<0.0030	**0.0076**	ND
RB9	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	4	<0.0030	<0.0030	**0.0030**	**0.010**	<0.0030	<0.0030	**0.014**	**0.011**	**0.012**	<0.0050	**0.017**	<0.0030	**0.0050**	<0.0050	**0.0090**	**0.021**	**0.016**
RB10	2	<0.0030	<0.0030	<0.0030	<0.0030	**0.0033**	<0.0030	<0.0030	<0.0050	**0.0083**	<0.0050	**0.0033**	<0.0030	<0.0030	<0.0050	**0.0040**	**0.0040**	**0.00034**
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RB11	2	<0.0030	<0.0030	<0.0030	<0.0030	**0.0040**	<0.0030	**0.0033**	<0.0050	<0.0030	<0.0050	**0.0067**	<0.0030	<0.0030	<0.0050	**0.0043**	**0.0077**	**0.0037**
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RB12	1	<0.0060	**0.0080**	<0.0060	**0.013**	<0.0060	<0.0060	**0.024**	**0.057**	**0.025**	<0.010	**0.033**	<0.0060	**0.014**	<0.010	**0.011**	**0.047**	**0.027**
RB13	2	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0030	ND
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RB14	2	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	**0.0037**	<0.0030	<0.0050	<0.0030	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0030	**0.000037**
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RB15	2	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0030	ND
	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
HP1	5	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0030	ND
	10	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0030	ND
HP2	5	<0.0033	**0.0033**	<0.0030	**0.013**	<0.0030	<0.0030	**0.026**	**0.024**	**0.020**	<0.0050	**0.012**	<0.0030	**0.010**	<0.0050	**0.012**	**0.040**	**0.028**
	10	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0030	ND
HP3	5	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.010	<0.0060	<0.010	**0.0060**	<0.0060	<0.0060	<0.010	<0.0060	**0.0060**	ND
	10	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0030	ND
HP4	5	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0030	ND
	10	<0.018	<0.018	<0.018	**0.042**	**0.054**	<0.018	**0.050**	**0.044**	**0.078**	<0.030	**0.034**	<0.018	<0.018	<0.030	**0.020**	**0.064**	**0.060**
HP5	5	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0030	ND
	10	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0050	<0.0030	<0.0030	<0.0030	<0.0050	<0.0030	<0.0030	ND
Benzo (a) pyrene TEF		--	--	--	*0.1*	*0.1*	*0.01*	*1*	--	*0.001*	*1*	--	--	*0.1*	--*	--	--	--
EHS IL		*12*	*6.4*	*1.9*	*0.63*	*1.1*	*2.8*	*0.11*	*2.5*	*2.2*	*0.11*	*0.69*	*6.0*	*0.48*	*0.042*	*7.8*	*45*	*0.11*
Tier 1 ESL		*12*	*6.4*	*1.9*	*0.63*	*1.1*	*2.8*	*0.11*	*2.5*	*2.2*	*0.11*	*0.69*	*6.0*	*0.48*	*0.042*	*7.8*	*45*	*0.11*
ESL (C/I)		*45,000*	--	*230,000*	*20*	*21*	*210*	*20*	--	*2,100*	*2.1*	*30,000*	*30,000*	*21*	*17*	--	*23,000*	*20*
ESL (CW)		*10,000*	--	*50,000*	*11*	*11*	*910*	*110*	--	*9,100*	*11*	*6,700*	*6,700*	*110*	*400*	--	*5,000*	*110*

Soil samples collected by Rincon Consultants on April 16, 2019
Concentrations detected above the method detection limit are in **bold**
Concentrations detected above the EHS IL are **highlighted**
PAHs = Polycyclic Aromatic Hydrocarbons
Benzo (a) pyrene TEF = Relative Potency Factor values for carcinogenic PAHs (excluding naphthalene*), United States Environmental Protection Agency
*Naphthalene is evaluated separately from other carcinogenic PAHs, no TEF is listed
EHS IL = Santa Barbara County Public Health Department, Environmental Health Services Division, Investigation Level
ESL = Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, January 2019, Rev. 1
Tier 1 ESL = Based on a generic conceptual site model designed for use at most sites
ESL (C/I) = Commercial/Industrial: Shallow Soil Exposure - Direct Exposure Human Health Risk Levels (Table S-1)
ESL (CW) = Any Land Use/Any Depth Soil Exposure: Construction Worker - Direct Exposure Human Health Risk Levels (Table S-1)
mg/kg = milligrams per kilogram
<0.1 = Not detected above the method detection limit
-- = Value not established
Soil samples analyzed by Oilfield Environmental and Compliance, Inc.

Analyses:
PAHs by EPA Method 8270

TABLE 4

Summary of TPH and VOCs in Groundwater Samples

Ortega Park Phase II Environmental Site Assessment

604 East Ortega Street, Santa Barbara, California

Sample Location	TPH				VOCs				
	TPHg (C_4-C_{12})	TPHd (C_{13}-C_{22})	TPHo (C_{23}-C_{40})	Full Range TPH	Benzene	t-Butyl Alcohol	Toluene	Trichloroethene (TCE)	Other VOCs
	Results in micrograms per liter (µg/L)								
HP2	<20	<44	**57**	**57**	<0.25	<2.5	<0.25	**0.31**	ND
HP3	<200	**1,300**	**2,000**	**3,300**	<2.5	**26**	<2.5	<2.5	ND
HP4	<200	**170**	**520**	**690**	<2.5	<25	<2.5	<2.5	ND
HP5	<20	**81**	**170**	**251**	**1.0**	<2.5	**0.36**	<2.5	ND
EHS IL	*1,000*	*1,000*	*1,000*	*1,000*	*1*	--	*150*	*5*	*varies*
MCL	--	--	--	--	*1*	--	*150*	*5*	*varies*

Soil samples collected by Rincon Consultants on April 16, 2019

Concentrations detected above the method detection limit are in **bold**

Concentrations detected above EHS ILs are **highlighted**

TPH = Total Petroleum Hydrocarbons

TPHg = TPH as gasoline

TPHd = TPH as diesel fuel

TPHo = TPH as motor oil

VOCs = Volatile Organic Compounds

EHS IL = Santa Barbara County Public Health Department, Environmental Health Services Division, Investigation Level

MCL = Maximum Contaminant Levels for drinking water established by the California Department of Public Health, March 2018

<0.1, ND = Not detected above the method detection limit

-- = Sample not analyzed or value not established

Soil samples analyzed by Oilfield Environmental and Compliance, Inc.

Analyses:

TPHd and TPHo by EPA Method 8015M

VOCs including TPHg by EPA Method 8260B

Santa Barbara County
PUBLIC Health
DEPARTMENT

Environmental Health Services

225 Camino del Remedio • Santa Barbara, CA 93110
805/681-4900 • FAX 805/681-4901

2125 S. Centerpointe Pkwy. #333 • Santa Maria, CA 93455-1340
805/346-8460 • FAX 805/346-8485

Van Do-Reynoso, MPH, PhD *Director*
Suzanne Jacobson, CPA *Chief Financial Officer*
Paige Batson, MA, PHN, RN *Deputy Director*
Douglas Metz, DPM, MPH *Deputy Director*
Polly Baldwin, MD, MPH *Medical Director*
Henning Ansorg, M.D. *Health Officer*
Darrin Eisenbarth, *Deputy Director*

Lawrence Fay, *Director of Environmental Health*

June 29, 2020

City of Santa Barbara
Attn: Ms. Jill Zachary
PO Box 1990
Santa Barbara, CA 93102-1990

Subject: 604 E. Ortega Street, Santa Barbara, California; Ortega Park
SMU# 760, Global ID# T10000014371, APN# 031-172-002

Dear Ms. Zachary:

The Santa Barbara County Public Health Department, Environmental Health Services Division (EHS), Site Mitigation Unit (SMU) has reviewed the *Corrective Action Plan/Site Mitigation Plan (CAP/SMP),* dated June 10, 2020, for the subject site. EHS has the following comments for this site:

1. The *CAP/SMP* notes that a large portion of the 5.35 acre site, will be extensively modified to revitalize the existing Ortega Park. The planned major renovations will include, replacing and relocating the pool, installing a wading pool, installing a splash pad, building a skate park, replacing the existing grass field with an artificial turf field, and replacing the bathroom/pool facilities building. Several of these facilities will require excavating to depths up to 11.5 feet below ground surface (bgs). Most of the assessment soil borings performed to date have extended to a maximum depth of 4 feet bgs with only three going to 10 feet bgs. Therefore the vertical extent of contaminated soils that may be encountered during the renovation activities is largely unknown.

2. The *CAP/SMP* notes soil contamination including the following:
   a. Total Petroleum Hydrocarbons (TPH) in the diesel and motor oil ranges (RB3, RB4, RB5, RB6, RB7, RB9, RB10, RB11, and RB12).
   b. Metals: arsenic, barium chromium, lead, mercury, thallium and zinc (RB5, RB6, RB7, RB9, RB10, RB11, HP3, HP4, and HP5).
   c. Polycyclic Aromatic Hydrocarbons (PAHs) - Benzo(a)pyrene equivalents (RB3, RB5, RB6, RB7, and RB8).

3. The *CAP/SMP* notes groundwater contamination including the following:
   a. Total Petroleum Hydrocarbons (TPH) in the diesel and motor oil ranges.
   b. Volatile Organic Compounds (VOCs): one sample result for benzene was equal to the MCL.

4. The CAP/SMP proposes to conduct excavation activities and perform soil verification sampling of both the bottom and sidewalls of the excavations, to ensure that the final excavation depths reached provide the respective required spatial separation of impacted soils from the features being installed during the park renovation activities. A phased renovation approach may make handling the impacted soils more difficult. Verification sampling shall be conducted at the following rates and shall serve to supplement the existing assessment data:
    a. Bottom samples at one sample collected and analyzed per every 100 square feet of bottom.
    b. Sidewalls at the rate of one sample for every 150 square feet.
    c. It is EHS' understanding that geotechnical borings shall be advanced prior to construction of select features. Samples shall be collected and analyzed from these borings to verify the depth of contaminants to inform future projects and provide data for a Land Use Covenant.

5. As the planned renovation activities will encounter hazardous materials, multiple work agencies will likely have restrictions on how and when work will be allowed to proceed. The agencies most likely with restrictions include but are not limited to:
    a. SBCo-EHS - requires all excavated impacted soils, above cleanup goals (appropriate ESLs), to be properly disposed of offsite and not used for fill onsite or anywhere else. Any fill necessary shall be clean imported fill tested in accordance with the October 2001 document titled *DTSC Information Advisory Clean Imported Fill*.
        i. EHS has concerns about the proposed locations and function of the Cultec storm water chambers, which act as a water detention and infiltration system. The proposed location appears to be over areas of contaminated soils and historic fill at the closed landfill, leading to concerns regarding leaching those contaminants into groundwater. EHS requires this issue to be resolved prior to the start of field work.
        ii. The City of Santa Barbara's own storm water management requirements shall be reviewed prior to making the final design changes.
    b. The Central Coast–Regional Water Quality Control Board may have additional requirements for lead impacted soils being located near stormwater infiltration devices which also discharge to stormwater drains.
    c. The Santa Barbara APCD - may restrict when work can occur, such as when school is out of session, and will likely require various dust control methods.

After a careful review of the *CAP/SMP*, EHS has the following directives:

1) EHS conditionally approves the general concept and approach noted in the *CAP/SMP*.
2) Verification samples shall be determined based upon the findings during the field work, but you shall prepare to collect samples at the rate of: bottom samples at one per 100 square feet and sidewall samples at the rate of one per 150 square feet.
3) Any impacted soils or materials left-in-place which exceed the SF-RWQCB Environmental Screening Levels (ESLs) for residential scenarios, shall require a Land Use Covenant, to be recorded to the deed.
4) Please ensure that your design follows and incorporates the requirements noted in the California Code of Regulations Title 27, Section 21190.

5) Submit to EHS a schedule for implementation, 60-days after receiving approval from Community Development. Notify EHS both 30-days and again, one-week prior to the start of field work. EHS requires a 30-day public comment period for the proposed Corrective Action Plan. Based upon the scope of the project, a newspaper advertisement and mailed notices to residents and fee title owners within 500 feet of the site are appropriate. Submit a draft newspaper ad and fact sheet to EHS for approval by July 30, 2020.
   i) As required by State and County requirements under the California Environmental Quality Act (CEQA), EHS will issue a Notice of Exemption (NOE) for the *CAP/SMP.* EHS will post the NOE on GeoTracker and the public will have 180-days to file a legal challenge to this NOE (not just present a public comment). Corrective action may commence prior to conclusion of the 180-day statute of limitations period on legal challenges.
   ii) You may file, a wet signature copy of the NOEs with the Clerk of the Board of Supervisors, for a filing fee of $50. Filing an NOE with the Clerk of the Board, reduces the legal challenge period from 180-days to 35-days. Please let me know if you wish to pursue this option.
   iii) If the City has already completed their own CEQA determination for this project, that includes the excavation and off-site disposal of impacted soil and/or groundwater, EHS shall not duplicate the efforts. Please provide EHS a copy of the documentation if this is the case.

6) It is your responsibility to obtain all permits and appropriate clearances prior to beginning fieldwork. All required permits shall be in hand prior to initiating fieldwork.

7) This approval is valid for **one (1) year** from the date of this letter, upon which EHS reserves the right to review and reassess this proposal.

If you have any other questions regarding the aforementioned, please contact me at (805) 346-8344, or via email at steve.nailor@sbcphd.org. Written correspondence regarding this matter should be sent to EHS at Attn: Steven Nailor 2125 S. Centerpointe Parkway, Suite 333, Santa Maria, CA 93455.

Respectfully yours,



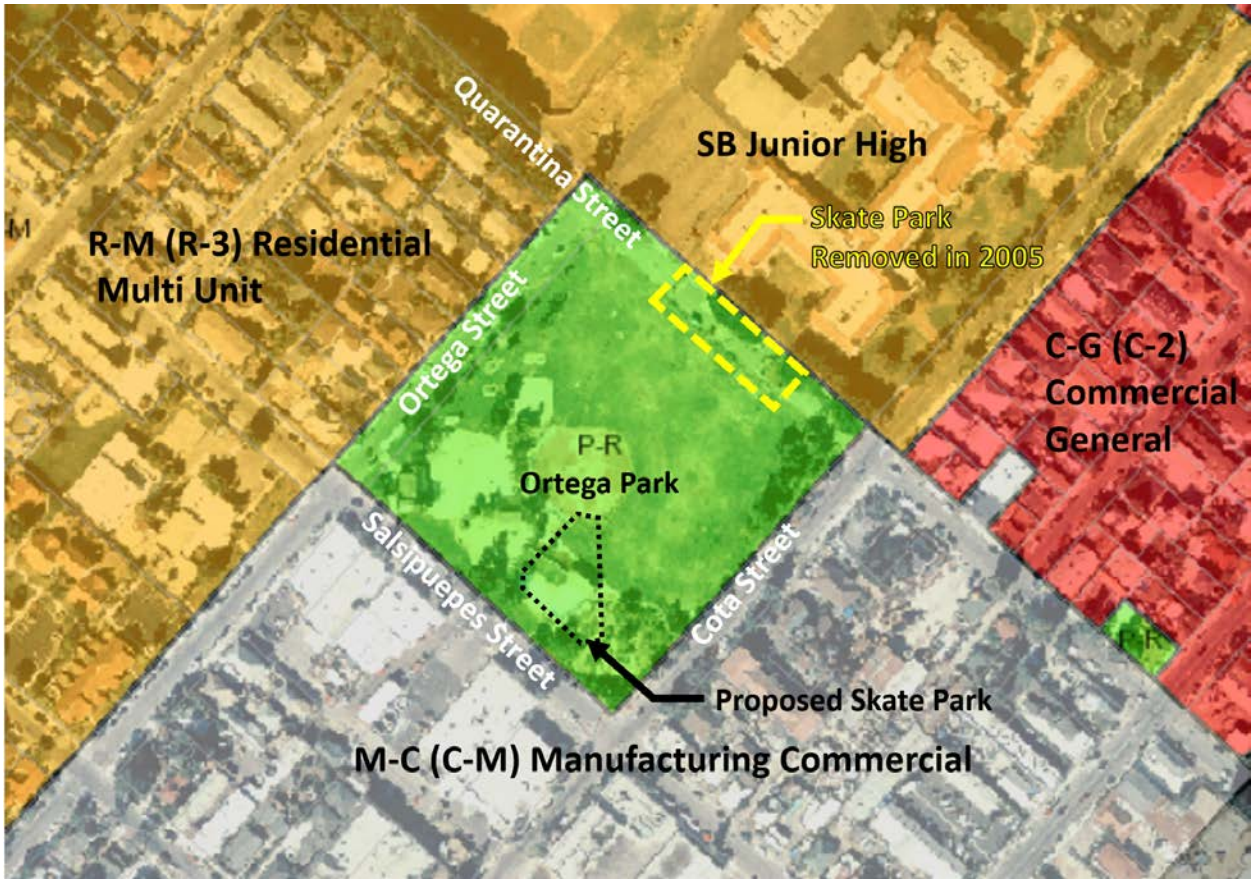
E. Steven Nailor, REHS, EIT
Senior Hazardous Materials Specialist
LUFT & SMU Programs

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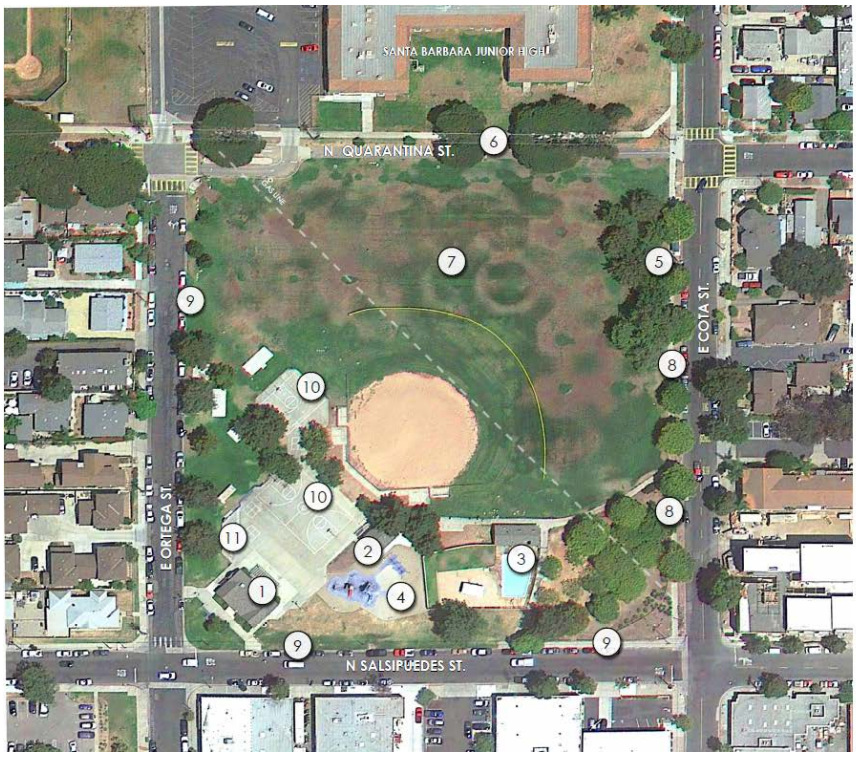
ec: Mr. Shawn Decker, Rincon Consultants, Inc. (sdecker@rinconconsultants.com)
Mr. Richard Aparicio, City of Santa Barbara (raparicio@santabarbaraca.gov)
Mr. Justin Van Mullem, City of Santa Barbara (jvanmullem@santabarbaraca.gov)
Ms. Norma Campos Bernal, Santa Barbara County PHD-EHS (Norma.CamposBernal@sbcphd.org)
Ms. Lisa Sloan, Santa Barbara County PHD-EHS (Lisa.Sloa@sbcphd.org)
Mr. E. Steven Nailor, Santa Barbara County PHD-EHS (steve.nailor@sbcphd.org)
Mr. Greg Bishop, Central Coast RWQCB (greg.bishop@waterboards.ca.gov)
GeoTracker

Noise Analysis of Proposed Skate Park

Ortega Park Santa Barbara, CA



Zoning Map



EXISTING SITE ELEMENTS

EXISTING SITE ELEMENTS

1. WELCOME HOUSE AND COMMUNITY ROOM
2. PARK RESTROOM
3. POOL FACILITY
4. PLAYGROUND
5. CANOPY TREES WITH LAWN
6. BIKE PATH
7. ATHLETIC FIELD
8. PARKWAY & STREET TREES
9. PARALLEL PARKING WITH PARTIAL OR NO SIDEWALK
10. BASKETBALL COURT
11. STAGE



PROPOSED SITE ELEMENTS

- A *PARK ENTRIES & PARKING IMPROVEMENTS*
- B *POOL AREA & WELCOME HOUSE*
- C *MULTI-SPORT FIELD AREA*
- D *MULTI-GENERATIONAL ACTIVITY ZONE & COTA STREET PROMENADE*
- E *SKATE PARK*
- F *PLAYGROUND, FAMILY PICNIC AREA & OPEN LAWN SEATING*

Project Description:

The project consists of the Ortega Park Master Plan, including a new swimming pool, wading pool, water slide, skate park, splash pad, sport courts, shade trellis, sports field with synthetic turf, ping pong tables, corn hole, and buildings for restrooms and maintenance. Site improvements such as fencing, parking, landscaping, dumpsters and related enclosures, and walkways are also proposed. The park is considered a Community Park (except the ballfields and related facilities), a Sports Facility (for the ballfields and related facilities only), and a Community Building (the Welcome House) per City Council Resolution 17-074. The parcel is zoned P-R, with a General Plan designation of Parks and Open Space.

Existing Setting:

Off-Site Noise Sources

The primary source of noise around the project site is traffic on Cota Street. This street is not a main day and night arterial like Haley Street measuring at 60-65 dBa Ldn (Day Night Sound Level); however, it is well used during the day, especially during the school year. Typical vehicle pass by noise levels range from 60 -70 dBA at 50 feet. Trucks, buses, and motorcycles produce peak levels 5 to 15 dBA higher on pass by. The adjacent Santa Barbara Junior High can create noise at the start and end of the school day, and when the bell rings as student switch classes. There is also typical noises from lawn care equipment, garbage pickup, and animals that is sporadic.

On-Site Noise Sources

The existing park includes several recreational uses including a ballfield, multi-use turf fields, basketball court (full and half court), small pool and aquatics building, playground rated for 5 to 12 year olds, restroom building, small amphitheater reservable community building with indoor kitchen and two outdoor picnic areas.

There was a 9,500 sq. ft. skate park permitted and constructed in 1997. It was located mid-block on Quarantina Street, constructed above grade with plywood and steel. As noted in the correspondence from stakepark.com designer Zachary Worhoudt, above grade wood and metal ramp skate parks on asphalt generate a significant amount of noise. With the 1997 skate park so close the two-story junior high the sound could have reverberated as well. However, concrete skate parks do not generate much noise and the activity in general is quite compared to other types of recreational facilities like basket, etc. The 1997 skate park was 245 feet from multi-family residential on Ortega Street. Intended to serve the community for a short period of time in was removed in 2005.

Each of these uses create a source of noise.

Sensitive Receptor Locations and Descriptions

The sensitive receptor closest to noise generated by the project include multi-family housing across Ortega Street and mixed-use housing across Cota Street. The closest Residential Multi-Unit's property line on Ortega Street is **300** feet from the skate park. The 1997 Skate Park was less than 200 feet from the same multi-family house. The Mixed-use project on the corner of Cota and Salsipuedes Street zoned Manufacturing Commercial is

150 feet the proposed skate park. This study investigates the extent to which the nearest receptors could be impacted by noise generated by the skate park.

Potential Project Noise Impacts:
The current and past recreational amenities are very similar to the proposed amenities that include a multi-use artificial turf field, basketball court, bocce ball and corn hole court, ping pong table, aquatics building and pool, splash pad, playground rated for 5 to 12 year olds, restroom building, and skate park. The park will be fenced and have designated operating hours of 8 am to ½ hour after sunset. Any after-hours use of the park will by Parks and Recreation permit only.

Skate Park

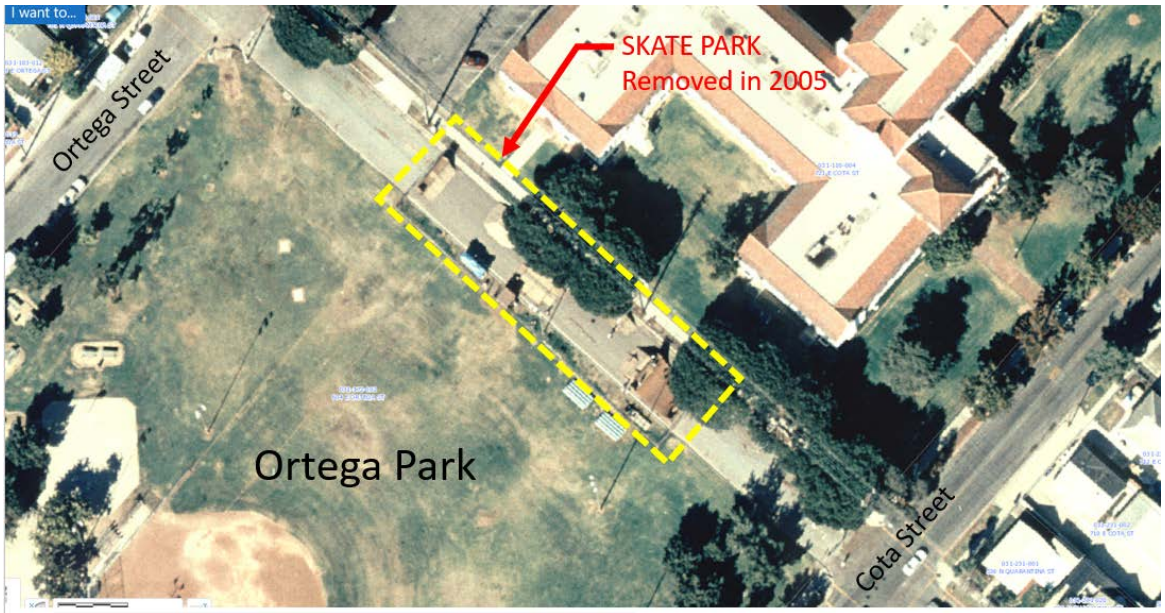
The expected noise levels associated with a skateboard park were estimated using measured data from two other skate parks. Measurements at one of the skate parks (Derby Park in Santa Cruz, which is surrounded on three sides by buildings and fences that created reverberation) were taken while 10 to 20 skaters were present at distances of 120 feet and 130 feet. Measurements at the other skate park (Santa Rosa Skate Park, which is a much larger skateboard park located in an open space area) were taken while 20 to 30 skaters were present at the same distances as taken at Derby Park. The Santa Rosa noise levels were consistently 4 dB lower than Derby Park, which is likely due to reverberation effects at Derby Park and differences in the skating surfaces. The Santa Rosa track is believed to have a smoother surface than Derby Park, as the rolling noise at Santa Rosa was inaudible at 120 feet, and noise produced by rolling is strongly dependent on the roughness of the rolling surface. The skate park noise data used for Ortega Park were averages of measurements collected on the two example skate parks.

The design of the proposed skate park will limit noise generated while in use. Fifty percent of the structure will be 3 feet to 6 feet below grade, and the other half will be at grade. The concrete is specified to have a hand trowel finish which is a very smooth finish with virtually no noise generating from it. It should be noted due to its proposed size of 12,300 square feet, the skate park designer and consultant for Ortega Park anticipated that only 12 skaters will be actively using the park at one time.

Measured Ldn Noise Levels (dB)

Measurement Distance	Skating L_{dn}
340 feet	43
195 feet	48
335 feet	44
630 feet	38
455 feet	36

Source: Wilson, Ihrig & Associates, Inc., June 2009.



1999 Aerial Photo Enlarged View of Skate Park



1999 Aerial Photo of Skate Park

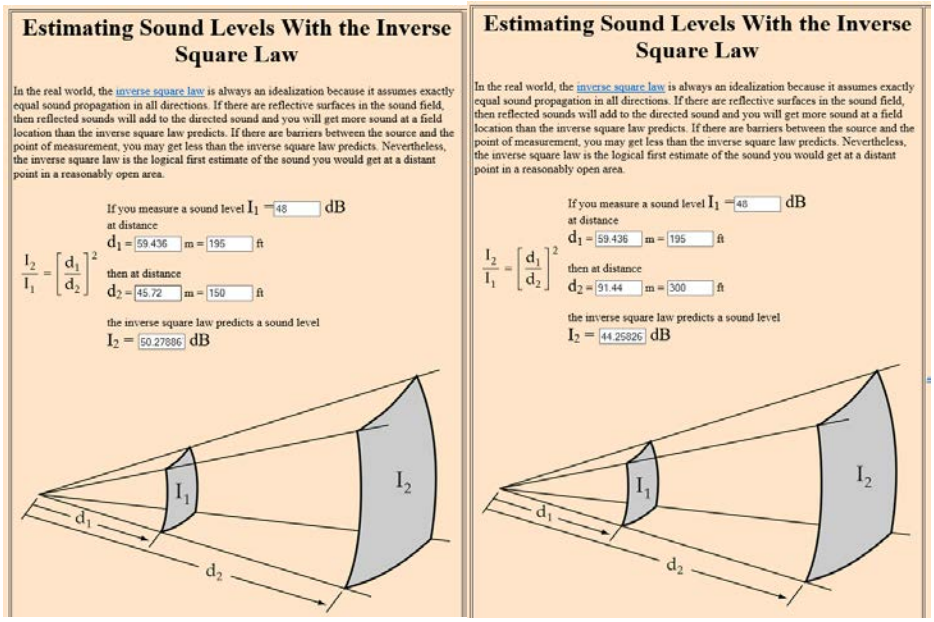
Conclusion:

Typical noise levels associated with a concrete below grade skate park are approximately 48 dB Ldn at a distance 195 feet. The primary noise produced by a skate park is strongly dependent on the roughness of the rolling surface. The closest Residential Multi-Unit on Ortega Street is **300** feet from the property line to the skate park and the approximate noise would be 44 dB Ldn (see Estimating Sound Levels With the Inverse Square Law below). The Mixed-use project on the corner of Cota and Salsipuedes Street is **150** feet the proposed skate park and the approximate noise would be 50.2 db Ldn.

The CEQA Guidelines define a project-level impact as being significant if it "[…] increases substantially the ambient noise levels for adjoining areas." The typical traffic noise and existing site amenities have a higher noise level than the proposed skate park.

Given the design of the proposed skate park with concrete specified to have a very smooth hand trowel finish, the assessment of existing ambient noise at the site, the distance from surrounding uses, and the hours of operation (8am to a ½ hour after sunset or with Department permit), the proposed skate park is not going to create noise impacts.

http://hyperphysics.phy-astr.gsu.edu/hbase/Acoustic/isprob2.html#c1



References:

1. Correspondents with SKATEPARKS.com designer
2. Pinole Valley Park Skateboard Park, Initial Study, Raney Planning and Management, Inc, March 2014

Schmitz, Anna K.

From: Schmitz, Anna K.
Sent: Friday, June 19, 2020 8:13 AM
To: 'Jill Zachary'; 'Justin Van Mullem'
Cc: Ferber, Jeffrey C.
Subject: Ortega Park - Skate Park Noise Studies
Attachments: ChanticleerPark_Ns_EIR_SantaCruzCounty_DrB.pdf; Pinole Intial Study pg 43.pdf; Hall Property Community Park Draft EIR.pdf

HI Jill and Justin,
Please find attached noise impact studies from Zach and his response to our inquiry in thread below.

These include analysis on the following projects:

- Chanticleer Park
- Pinole Valley Skate Park
- Hall Property Community Park

Thank you!

ANNA SCHMITZ, ASLA
3765 S. Higuera Suite 102
San Luis Obispo, CA 93401
(805) 748-9395 Cell
(805) 543-1794 Ext. 218
rrmdesign.com

From: Zach Wormhoudt <zach@skateparks.com>
Sent: Friday, April 24, 2020 11:10 AM
To: Schmitz, Anna K. <AKSchmitz@rrmdesign.com>
Cc: Ferber, Jeffrey C. <JCFerber@rrmdesign.com>; 'Andres Raygada' <andres@skateparks.com>
Subject: RE: Ortega Skate Park - Amenity Noise

Hi Anna and Jeff,

I have worked on numerous skate park projects that have required acoustical studies as part of the CEQA process. The studies typical review other similar skate parks to the proposed skate park and measure the DBA levels at various distances from the existing skate park. Those recordings are then compared to existing DBA levels at the proposed site and areas where there is concern regarding potential acoustical impacts. So far, every study I am aware of has concluded that there would not be a significant impact from the development of an in-ground concrete skate park. Sometimes the study will include design options that could be implemented to minimize potential sound from the skate park. These options typically include building earth berms or building the skate park below grade (we happen to be predominantly below grade for Ortega Park).

My observation is that people in general assume that skate parks will generate a significant amount of noise. Often this is because people are familiar with a neighborhood ramp (wood, metal, etc. / above ground) and those do generate significant noise. However, concrete skate parks do not generate much noise and the activity in general is quite compared to other types of recreational facilities like basketball, etc.

Let me know if you have any questions. I can potentially send some acoustical studies from other projects for reference.

Zachary Wormhoudt
Principal Landscape Architect

Wormhoudt INC
849 Almar Avenue, Suite 280 | Santa Cruz, CA 95060
p_831.426.8424 | F_831.426.8411 | m_831.334.4022
www.skateparks.com | Wormhoudt Instagram

CITY OF PINOLE
DEVELOPMENT SERVICES DEPARTMENT

Pinole Valley Park Skateboard Park

Initial Study

March 2014

RANEY
PLANNING & MANAGEMENT, INC.

1501 Sports Drive • Sacramento • CA • 95834
Office 916.372.6100 • Fax 916.419.6108

TABLE OF CONTENTS

A. BACKGROUND 1

B. SOURCES 2

C. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED 3

D. DETERMINATION 4

E. BACKGROUND AND INTRODUCTION 5

F. PROJECT DESCRIPTION 5

G. ENVIRONMENTAL CHECKLIST 9

I. AESTHETICS 10
II. AGRICULTURE AND FOREST RESOURCES 12
III. AIR QUALITY 13
IV. BIOLOGICAL RESOURCES 20
V. CULTURAL RESOURCES 25
VI. GEOLOGY AND SOILS 30
VII. GREENHOUSE GAS EMISSIONS 33
VIII. HAZARDS AND HAZARDOUS MATERIALS 35
IX. HYDROLOGY AND WATER QUALITY 38
X. LAND USE AND PLANNING 41
XI. MINERAL RESOURCES 42
XII. NOISE 43
XIII. POPULATION AND HOUSING 47
XIV. PUBLIC SERVICES 48
XV. RECREATION 49
XVI. TRANSPORTATION and CIRCULATION 50
XVII. UTILITIES AND SERVICE SYSTEMS 52
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE 54

INITIAL STUDY

March 2014

A. BACKGROUND

1. Project Title: Pinole Valley Park Skateboard Park

2. Lead Agency Name and Address: City of Pinole
Development Services Department
2131 Pear Street
Pinole, CA 94564

3. Contact Person and Phone Number: Dean Allison
Development Services Director
(510) 724-9017

4. Project Location: Pinole Valley Park
3790 Pinole Valley Road
Pinole, CA 94564
APN 360-200-004

5. Project Sponsor's Name and Address: City of Pinole
2131 Pear Street
Pinole, CA 94564

6. Existing General Plan Designations: Parks and Recreation (PR)

7. Existing Zoning Designation: Parks and Recreation (PR)

8. Project Description Summary: The proposed project consists of the construction of an 8,100 square foot concrete skateboard park and associated infrastructure within the Pinole Valley Park, just south of Pinole Valley Road in the City of Pinole, CA. The project site is adjacent to an existing soccer field and is surrounded by single-family residential to the north across Pinole Valley Road, open space to the south, soccer field to the east, and baseball park to the west.

B. SOURCES

It should be noted that all of the submitted technical reports and modeling results used for the purposes of this analysis are available upon request at the City of Pinole Development Services Department located at 2131 Pear Street, Pinole, California. The following documents are referenced information sources utilized by this analysis:

1. Austin-Foust Associates, Inc. *Center Avenue Skate Park Traffic Analysis*. December 2011.
2. Bay Area Air Quality Management District. *California Environmental Quality Act Air Quality Guidelines*. May 2011.
3. Bay Area Air Quality Management District. *Bay Area 2010 Clean Air Plan*. Adopted September 15, 2010.
4. California Air Resources Board. *Air Quality and Land Use Handbook: A Community Health Perspective*. April 2005.
5. California Department of Conservation, Division of Land Resource Protection. *Contra Costa County Important Farmland 2010*. July 2011.
6. California Department of Fish and Wildlife. *California Natural Diversity Database RareFind, Version 5*. Accessed February 2014.
7. California Environmental Protection Agency, Cortese List, http://www.envirostor.dtsc.ca.gov, accessed December 7, 2012.
8. City of Pinole. *City of Pinole General Plan Update*. November 2010.
9. City of Pinole. *City of Pinole General Plan Update Background Report, Chapter V: Traffic and Circulation Background*. September 2007. Available at: http://www.ci.pinole.ca.us/planning/genplan/documents.html#GeneralPlanBackgroundDocuments. Accessed February 2014.
10. City of Pinole. *City of Pinole General Plan Update Draft Environmental Impact Report*. July 2010.
11. City of Pinole. *City of Pinole General Plan Update Final Environmental Impact Report*. September 2010.
12. City of Pinole. Pinole, *CA Municipal Code*. December 4, 2012.
13. Cunha Engineering, Inc. Personal communications with Vincent Cunha, PE, PLS. February 19, 2014.
14. ENVIRON International Corporation and the California Air Districts. *California Emissions Estimator Model User's Guide Version 2013.2*. July 2013.
15. Foundation for Educational Development, Inc., California State College, Sonoma (Peter Banks, David A. Fredrickson). *An Archaeological Investigation of the Pinole Valley Park Project, Contra Costa County, California*. February 1977.
16. Holman & Associates. *Preliminary Results of Archaeological Site Indexing at Pinole Valley Park (CA-CCO-356), Pinole, California*. September 25, 2001.
17. Federal Emergency Management Agency. Flood Insurance Rate Map, City of Pinole, California, Contra Costa County, Community Panel Number 06013C0232F.
18. Tom Origer & Associates. *A Cultural Resources Study for the Pinole Skateboard Park Project*. February 4, 2014.
19. U.S. Department of Agriculture, Natural Resources Conservation Service. *Web Soil Survey*. Available at: http://websoilsurvey.nrcs.usda.gov/app/. Accessed February 2014.
20. Wilson, Ihrig & Associates, Inc. *Noise Assessment*. June 16, 2009.

C. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is "Less Than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

☐ **Aesthetics**	☐ **Agriculture and Forest Resources**	☐ **Air Quality**
✖ **Biological Resources**	✖ **Cultural Resources**	☐ **Geology and Soils**
☐ **Greenhouse Gas Emissions**	✖ **Hazards and Hazardous Materials**	☐ **Hydrology and Water Quality**
☐ **Land Use and Planning**	☐ **Mineral Resources**	☐ **Noise**
☐ **Population and Housing**	☐ **Public Services**	☐ **Recreation**
☐ **Transportation and Circulation**	☐ **Utilities and Service Systems**	☐ **Mandatory Findings of Significance**

D. DETERMINATION

On the basis of this initial study:

☐ I find that the Proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

✖ I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the Proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Dean Allison, Development Services Director	City of Pinole
Printed Name	For

E. BACKGROUND AND INTRODUCTION

This Initial Study identifies and analyzes the potential environmental impacts of the Pinole Valley Park Skateboard Park project (proposed project). The information and analysis presented in this document is organized in accordance with the order of the California Environmental Quality Act (CEQA) checklist in Appendix G of the CEQA Guidelines. If the analysis provided in this document identifies potentially significant environmental effects of the project, mitigation measures that should be applied to the project are prescribed.

The City of Pinole's current General Plan and associated General Plan Environmental Impact Report (EIR) was adopted in 2010. The City of Pinole General Plan EIR was prepared as a program-level EIR, pursuant to Section 15168 of the CEQA Guidelines (Title 14, California Code of Regulations, Sections 15000 *et seq*.). The City of Pinole General Plan EIR analyzed full implementation of the City of Pinole General Plan and identified measures to mitigate the significant adverse project and cumulative impacts associated with the General Plan. The environmental setting and impact discussion for each section of this Initial Study have been largely based on information in the City of Pinole General Plan and General Plan EIR.

The mitigation measures prescribed for environmental effects described in this Initial Study will be implemented in conjunction with the project, as required by CEQA. The mitigation measures will be incorporated into the project through project conditions of approval. The City will adopt findings and a Mitigation Monitoring and Reporting Program (MMRP) for the project in conjunction with approval of the project.

F. PROJECT DESCRIPTION

The proposed project site is located within Pinole Valley Park in the southwestern portion of the City of Pinole, Contra Costa County, California (see Figure 1, Regional Project Location). The project site is primarily an undeveloped slightly sloped area located immediately adjacent to the west of an existing soccer field and associated parking lot (see Figure 2, Project Vicinity Map). An existing baseball diamond and associated parking lot is located to the north and west. Open space associated with the remainder of Pinole Valley Park surrounds the project site to the south. Pinole Creek and associated vegetation, as well as Adobe Road further south, run in an east-west direction to the south of the site, and an unnamed tributary and associated vegetation is located to the west of the site. To the north of the proposed site across Pinole Valley Road is existing single-family residential development.

The proposed project would consist of the construction of an 8,100-square-foot concrete skateboard park and associated infrastructure, including a light and security camera pole. A utility trench would be required to connect to existing lines along Pinole Valley Road for the proposed on-site light and security camera. The skateboard park would include a variety of obstacles including, but not limited to, a mini ramp, ledges, stairs, and rails. In addition, a connection sidewalk would be located along the eastern boundary of the proposed skateboard park (i.e., along the western boundary of the existing soccer field). Figure 3 presents the proposed project site plan.

Figure 1
Regional Project Location

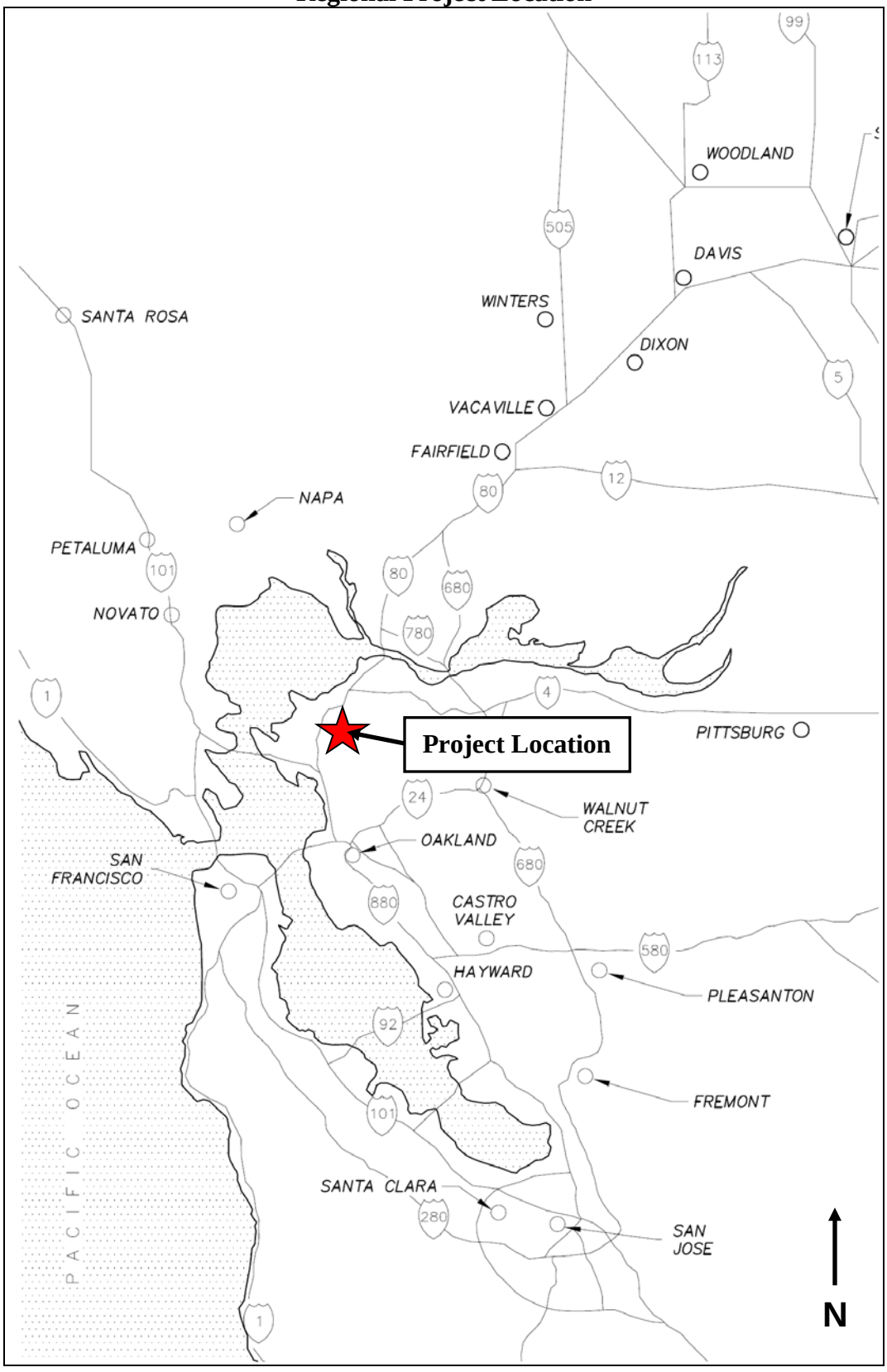
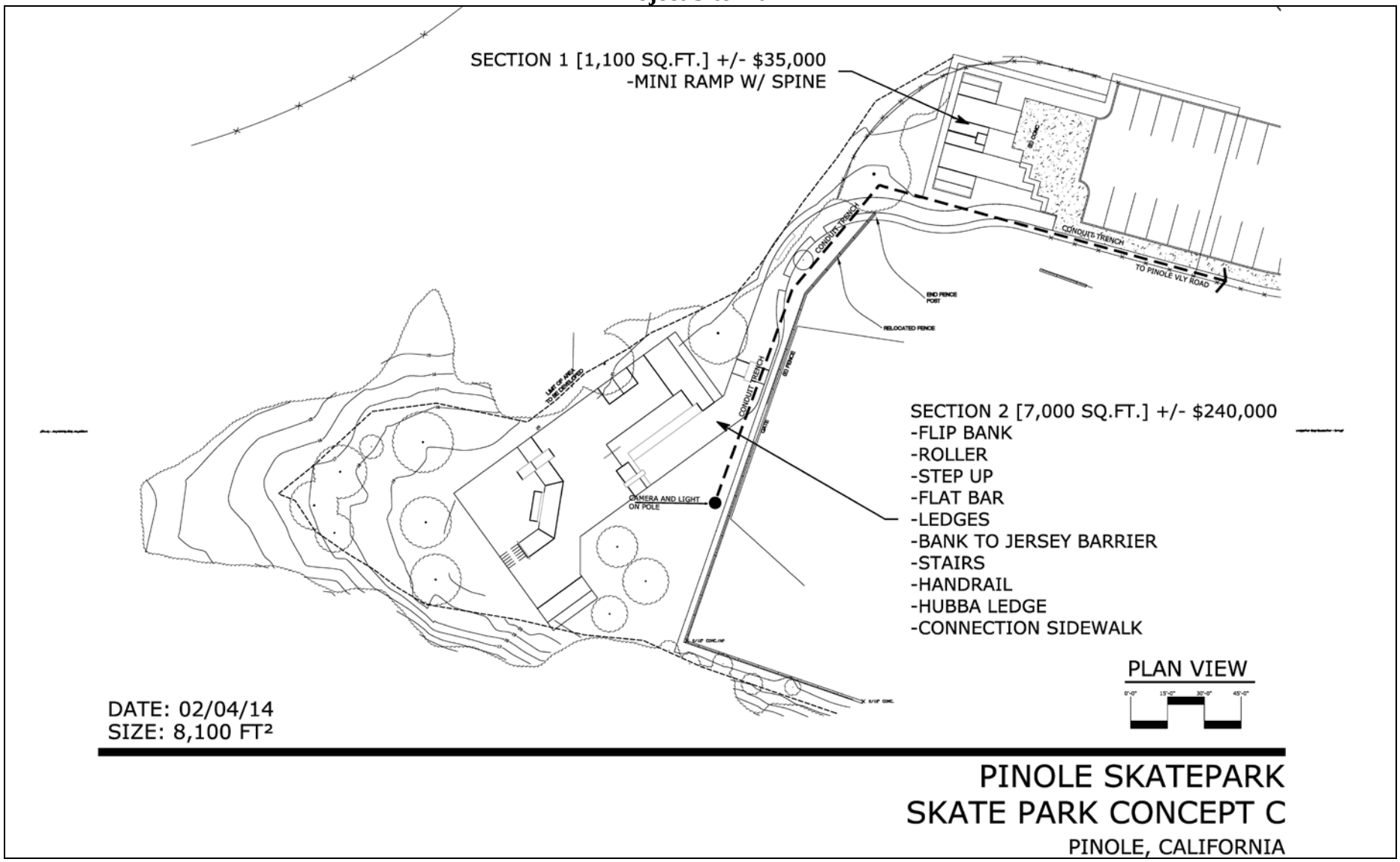


Figure 2
Project Vicinity Map



Figure 3
Project Site Plan



Discretionary Actions

Implementation of the proposed project would require the following discretionary actions by the City of Pinole: approval of the Initial Study, adoption of the Mitigation Monitoring and Reporting Program, and approval of a design review request for the skateboard park project.

G. ENVIRONMENTAL CHECKLIST

The following Checklist contains the environmental checklist form presented in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the proposed project. A discussion follows each environmental issue identified in the checklist. Included in each discussion are project-specific mitigation measures recommended, as appropriate, as part of the proposed project.

For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which no mitigation has been identified. If any potentially significant impacts are identified, an EIR must be prepared.

Less Than Significant with Mitigation Incorporated: An impact that requires mitigation to reduce the impact to a less-than-significant level.

Less-Than-Significant Impact: Any impact that would not be considered significant under CEQA relative to existing standards.

No Impact: The project would not have any impact.

I. AESTHETICS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	☐	✖	☐
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	☐	☐	✖	☐
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	✖	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	✖	☐

Discussion

a. According to the City of Pinole General Plan Update, officially designated scenic vistas do not exist within the City's planning area. The General Plan Update does consider scenic views of the bay and the surrounding city that can be seen from certain points along the City's ridgelines to be important. Figure 10.4, Pinole Visual Resources, of the City's General Plan Update shows the sensitive view protection corridors. Policies are included that would reduce impacts to such views through development requirements. The project site is not located in a view protection corridor or along an existing ridgeline, nor would the project block any views of the bay or surrounding city. Therefore, the proposed project's impact associated with a scenic vista would be considered ***less than significant***.

b. According to the City of Pinole General Plan Update, officially designated State scenic highways or highways that are eligible for such designation by the California Department of Transportation Scenic Highways Program do not exist within the City's planning area. In addition, the proposed project has been designed to avoid removal of any existing on-site trees; therefore, development of the proposed project would not damage any trees or other scenic resources. Overall, the proposed project's impacts associated with damage of scenic resources within a State scenic highway would be ***less than significant***.

c. The proposed project site is primarily an undeveloped area within Pinole Valley Park, and is bounded by open space to the west and south, an existing baseball diamond and associated parking lot to the north and west, and an existing soccer field and associated parking lot to the west. The project site may be partially visible from travelers along Pinole Valley Road or the existing residences to the north. However, the site would be located further from such views and would be mostly obstructed from such views by the existing soccer field, baseball diamond, and associated parking lots, as well as the vegetation associated with the unnamed tributary to the west. In addition, the proposed project would be consistent with the recreational facilities anticipated for the Pinole Valley Park and would be compatible with the existing visual character and quality of the

project area. Therefore, the proposed project would not be expected to substantially degrade the existing visual character or quality of the site or its surroundings, and impacts would be considered ***less than significant***.

d. The proposed project would include the installation of one light pole and security camera. The proposed lighting would comply with Chapter 17.46 of the Pinole Municipal Code, particularly Section 17.46.050, including, but not limited to, the following requirements:

- Be designed, located, installed, directed downward or toward structures, fully shielded, and maintained in order to prevent glare, light trespass, and light pollution;
- Illuminate at the minimum level necessary for safety and security and to avoid the harsh contrasts in lighting levels between the project site and adjacent properties. Illumination requirements applicable to the proposed project are as follows:
    - Public, civic, and religious buildings are permitted to be fully illuminated during hours of operation. After hours of operation, lighting may be dimmed or turned off such that only lighting essential of security or safety shall be maintained.
    - For Sports Fields/Outdoor Activity Areas, where playing fields or other specialty activity areas are to be illuminated, lighting fixtures shall be mounted, aimed, and shielded so that the light falls within the primary playing area and no significant off-site light trespass is produced. Additionally, the lights shall be turned off within one (1) hour after the end of the event.
- The maximum height of freestanding outdoor light fixtures abutting residential development shall be 18 feet. Otherwise, the maximum height for freestanding outdoor light structures shall be 24 feet. Height shall be measured from the finish grade, inclusive of the pedestal, to the top of the fixture.

In addition to compliance with the City's Municipal Code, as discussed above, the proposed project site would be located further from, and would be mostly obstructed from, views from Pinole Valley Road and nearby residences by the existing soccer field, baseball diamond, and associated parking lots, as well as the vegetation associated with the unnamed tributary to the west. Therefore, the proposed project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area, and impacts would be ***less than significant***.

II. AGRICULTURE AND FOREST RESOURCES. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	✖
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	✖
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	✖
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	✖
e. Involve other changes in the existing environment which, due to their location or nature, could individually or cumulatively result in loss of Farmland to non-agricultural use?	☐	☐	☐	✖

Discussion

a,e. According to the City's General Plan Update EIR, agricultural operations are not in existence within the City's planning area. Accordingly, impacts to agricultural resources associated with buildout of the entire General Plan were not analyzed in the General Plan EIR, as preliminary evaluation determined such impacts to be less than significant. In addition, the project site is designated Other Land on the Contra Costa County Important Farmland 2010 map. The City's General Plan designates the site as Parks and Recreation, and the site is zoned similarly. The project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use, and ***no impact*** would occur.

b. The project area is not under any Williamson Act contract and the area is zoned for parks and recreation. The site is not zoned for agricultural uses. Therefore, because buildout of the proposed project would not conflict with a Williamson Act contract or existing zoning for agriculture, the project would result in ***no impact***.

c,d. The project site is not considered forest land (as defined in Public Resources Code section 12220[g]), timberland (as defined by Public Resources Code section 4526), and is not zoned Timberland Production (as defined by Government Code section 51104[g]). Therefore, the proposed project would have ***no impact*** with regard to conversion of forest land or any potential conflict with forest land, timberland, or Timberland Production zoning.

III. AIR QUALITY. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	✖	☐
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	✖	☐
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	✖	☐
d. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	✖	☐
e. Create objectionable odors affecting a substantial number of people?	☐	☐	✖	☐

Discussion

a. The City of Pinole is within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), which regulates air quality in the San Francisco Bay Area, and located in the San Francisco Bay Area Air Basin (SFBAAB). The SFBAAB is currently designated as a nonattainment area for State and federal ozone, State and federal particulate matter 2.5 microns in diameter ($PM_{2.5}$), and State particulate matter 10 microns in diameter (PM_{10}) standards. In compliance with regulations, the BAAQMD periodically prepares and updates air quality plans that provide emission reduction strategies to achieve attainment of the air quality standards, including control strategies to reduce air pollutant emissions via regulations, incentive programs, public education, and partnerships with other agencies. The current air quality plans are prepared in cooperation with the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG).

The most recent federal ozone plan is the 2001 Ozone Attainment Plan, which is a proposed revision to the Bay Area part of the State Implementation Plan (SIP) to achieve the federal ozone standard. The plan was adopted on October 24, 2001 and approved by the California Air Resources Board (CARB) on November 1, 2001. The plan was submitted to the U.S. Environmental Protection Agency (USEPA) on November 30, 2001 for review and approval as a revision to the SIP. In addition, in order to fulfill federal air quality planning requirements, the BAAQMD adopted a $PM_{2.5}$ emissions inventory for the year 2010, which was submitted to the USEPA on January 14, 2013 for inclusion in the SIP.

The most recent State ozone plan is the 2010 Clean Air Plan (CAP), adopted on September 15, 2010. The 2010 CAP was developed as a multi-pollutant plan that provides an integrated control strategy to reduce ozone, PM, toxic air contaminants (TACs), and greenhouse gases (GHGs). Although the California Clean Air Act does not

require the region to submit a plan for achieving the State PM_{10} standard, the BAAQMD has prioritized measures to reduce PM in developing the control strategy for the 2010 CAP. The control strategy serves as the backbone of the BAAQMD's current PM control program. The 2010 Plan defined a comprehensive control strategy including 55 control measures to reduce emissions of PM and other air pollutants from a wide variety of emission sources. As these measures are implemented, emissions of primary PM and precursors to the formation of secondary PM would be reduced throughout the Bay Area. It should be noted that on January 9, 2013, the USEPA issued a final rule to determine that the San Francisco Bay Area has attained the 24-hour $PM_{2.5}$ federal standard, which suspends federal SIP planning requirements for the Bay Area.

The aforementioned air quality plans contain mobile source controls, stationary source controls, and transportation control measures (TCMs) to be implemented in the region to attain the State and federal standards within the SFBAAB. The plans are based on population and employment projections provided by local governments, usually developed as part of the General Plan update process. The proposed project would be considered to conflict with, or obstruct implementation of, an applicable air quality plan if the project would be inconsistent with the growth assumptions in the plans, in terms of population, employment, or regional growth in Vehicle Miles Traveled (VMT), which are based on ABAG projections that are, in turn, based on the City's General Plan. The proposed project would be located on an existing park site that is designated for parks and recreation. A General Plan amendment or zone change is not proposed for the project, and the project would be consistent with the intended uses on the overall park site. In addition, the proposed project would not involve any increase in population, employment, or significant VMT levels in the area. As such, the project would be considered consistent with the growth assumptions of the applicable air quality plans.

In addition, as presented in the sections below, the project would not exceed the applicable thresholds of significance for any pollutant and would not result in emissions that substantially contribute to the nonattainment designations of PM or ozone for the area. Therefore, the proposed project would not conflict with or obstruct implementation of the applicable air quality plans, and a ***less-than-significant*** impact would result.

b-c. According to the California Environmental Quality Act (CEQA) Guidelines, an air quality impact may be considered significant if the proposed project's implementation would result in, or potentially result in, conditions, which violate any existing local, State or federal air quality regulations. In order to evaluate ozone and other criteria air pollutant emissions and support attainment goals for those pollutants designated as nonattainment in the area, the BAAQMD has established significance thresholds associated with development projects for emissions of reactive organic gases (ROG), nitrogen oxide (NO_x), PM_{10}, and $PM_{2.5}$. The BAAQMD's significance thresholds, expressed in pounds per day (lbs/day) for project-level and tons per year (tons/yr) for cumulative, listed in Table 1, are recommended for use in the evaluation of air quality impacts associated with proposed development projects.

Table 1
BAAQMD Thresholds of Significance

Pollutant	Construction (lbs/day)	Operational (lbs/day)	Cumulative (tons/year)
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82	82	15
$PM_{2.5}$	54	54	10

Source: BAAQMD, CEQA Guidelines, May 2011.

In addition, the BAAQMD identifies screening criteria for development projects, which provide a conservative indication of whether a development could result in potentially significant air quality impacts. If all of the screening criteria are met by a project, a detailed air quality assessment of that project's air pollutant emissions would not be required. The screening criteria for a city park development are if the development is less than or equal to the following screening level sizes:

- 2613 acres for operational criteria pollutants;
- 600 acres for operational GHG; or
- 67 acres for construction criteria pollutants.

Accordingly, if a city park development is less than or equal to the screening size for operational or construction criteria pollutants, or for operational GHG, the development would not be expected to result in potentially significant air quality impacts, and a detailed air quality assessment would not be required.

It should be noted that the BAAQMD was challenged in Alameda County Superior Court, on the basis that the BAAQMD failed to comply with CEQA when it adopted its CEQA guidelines, including thresholds of significance. The BAAQMD was ordered to set aside the thresholds and conduct CEQA review of the proposed thresholds. On August 13, 2013, the First District Court of Appeal reversed the trial court's decision striking down BAAQMD's CEQA thresholds of significance for GHG emissions. The Court of Appeal's held that CEQA does not require BAAQMD to prepare an EIR before adopting thresholds of significance to assist in the determination of whether air emissions of proposed projects might be deemed "significant." The Court of Appeal's decision provides the means by which BAAQMD may ultimately reinstate the GHG emissions thresholds, though the court's decision does not become immediately effective. It should be further noted that a petition for review has been filed; however, the court has limited review to the following issue: Under what circumstances, if any, does CEQA require an analysis of how existing environmental conditions will impact future residents or users (receptors) of a proposed project? Ultimately, the thresholds of significance used to evaluate proposed developments are determined by the CEQA lead agency, which would be the City of Pinole for the proposed project. Per CEQA Guidelines Section 15064.7, the City has elected to use the BAAQMD's thresholds and methodology for this project, as they are based on substantial evidence and remain the most up-to-date, scientifically-based method available to evaluate air quality impacts. Thus, the BAAQMD's thresholds of significance presented in Table 1, and the screening criteria, are utilized for this analysis.

The proposed project is only an 8,100-square-foot portion of the much larger 197-acre Pinole Valley Park. As such, according to the BAAQMD screening criteria, the proposed project is not expected to result in any criteria pollutant emissions in excess of applicable standards or thresholds of significance. Nonetheless, the project's construction and operational emissions have been estimated for disclosure purposes. The proposed project's emissions were quantified using the California Emissions Estimator Model (CalEEMod) software version 2013.2.2.[1] Results of the CalEEMod modeling are expressed in lbs/day for construction and operational emissions, and in tons/yr for cumulative emissions, which allows for comparison between the model results and the BAAQMD significance thresholds. All modeling results are provided in Appendix A.

Construction Emissions

During construction of the project, various types of equipment and vehicles would temporarily operate on the project site. Construction exhaust emissions would be generated from construction equipment, earth movement activities, construction workers' commute, and construction material hauling during construction period. The aforementioned activities would involve the use of diesel- and gasoline-powered equipment that would generate emissions of criteria pollutants. Project construction activities also represent sources of fugitive dust, which includes PM emissions. As construction of the proposed project would generate air pollutant emissions intermittently within the site, and in the vicinity of the site, until all construction has been completed, construction is a potential concern because the proposed project is in a nonattainment area for ozone and PM.

Utilizing CalEEMod, the proposed project's construction-related criteria air pollutant emissions were estimated and are presented in Table 2 below.

Table 2
Maximum Unmitigated Project Construction Emissions

Pollutant	Project Emissions (lbs/day)	BAAQMD Significance Threshold (lbs/day)
ROG	1.54	54.0
NO_X	14.99	54.0
PM_{10}	1.78	82.0
$PM_{2.5}$	1.33	54.0

Source: CalEEMod, February 2014 (See Appendix A).

[1] CalEEMod is a statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify air quality emissions, including GHG emissions, from land use projects. The model applies inherent default values for various land uses, including construction data, trip generation rates based on the Institute of Transportation Engineers (ITE) Manual, vehicle mix, trip length, average speed, etc. However, where project- or site-specific data was available, such data was input into the model (e.g., construction phases and timing). Construction was assumed to commence in July 2014, and would involve approximately one month of grading and light earthmoving activities and three months of construction including laying the concrete. A list of anticipated pieces of equipment necessary for construction was provided by Cunha Engineering, Inc. Further details regarding the modeling assumptions can be viewed in the CalEEMod outputs included in Appendix A.

As anticipated based on the BAAQMD screening criteria and as shown in the table, the proposed project's construction-related emissions would be well below the applicable thresholds of significance. It should be noted that the project would be required to comply with all BAAQMD rules and regulations for construction, including implementation of the BAAQMD's recommended Basic Construction Mitigation Measures. The Basic Construction Mitigation Measures include, but are not limited to, watering exposed surfaces, covering all haul truck loads, removing all visible mud or dirt track-out, limiting vehicle speeds on unpaved roads, and minimizing idling time. Because the proposed project would not exceed the applicable thresholds of significance, the project would not violate construction-related air quality standards or contribute to the area's nonattainment status of ozone or PM, and impacts associated with construction-related emissions would be considered less than significant.

Operational Emissions

The proposed project would not involve any stationary sources of emissions. Day-to-day activities such as future users' vehicle trips to and from the project site would make up the majority of the mobile emissions. Emissions could also occur from area sources such as landscape maintenance equipment exhaust during maintenance of the area.

Utilizing CalEEMod and assuming the model defaults for a city park land use type, the proposed project's operational criteria air pollutant emissions were estimated and are presented in Table 3 below. As anticipated based on the BAAQMD screening criteria and as shown in the table, the proposed project's operational emissions would be well below the applicable thresholds of significance. Therefore, the proposed project would not violate operational air quality standards or contribute to the area's nonattainment status of ozone or PM, and impacts associated with operational emissions would be considered less than significant.

Table 3
Unmitigated Project Operational Emissions

Pollutant	Project Emissions (lbs/day)	BAAQMD Significance Threshold (lbs/day)
ROG	0.5150	54.0
NO_X	0.6679	54.0
PM_{10}	0.3459	82.0
$PM_{2.5}$	0.0992	54.0

Source: CalEEMod, February 2014 (See Appendix A).

Cumulative Emissions

The long-term emissions associated with operation of the proposed project in conjunction with other existing or planned development in the area would incrementally contribute to the region's air quality. In order to determine the proposed project's cumulative contribution to regional air quality, the City, as lead agency, has chosen to utilize the BAAQMD's cumulative thresholds as presented in Table 1. The proposed project's

contribution to cumulative emissions of criteria air pollutants were calculated using CalEEMod and are presented in Table 4 below. As shown in the table, the proposed project's unmitigated cumulative emissions would be below the applicable cumulative thresholds of significance. Therefore, the proposed project's incremental contribution to cumulative air quality impacts would be considered less than significant.

Table 4
Unmitigated Project Cumulative Emissions

Pollutant	Project Emissions (tons/yr)	BAAQMD Significance Threshold (tons/yr)
ROG	0.0927	10
NO_X	0.1297	10
PM_{10}	0.0606	15
$PM_{2.5}$	0.0175	10

Source: CalEEMod, February 2014 (See Appendix A).

Conclusion

As presented and discussed above, the proposed project would result in construction-related and operational emissions well below the applicable thresholds of significance. Therefore, the project would not violate air quality standards or contribute to the region's nonattainment status of ozone or PM, and impacts would be considered ***less than significant***.

d. Sensitive receptors are typically defined as facilities where sensitive receptor population groups (children, the elderly, the acutely ill, and the chronically ill) are likely to be located. Land uses associated with sensitive receptor groups, include: residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. The proposed project is located on an existing park site and is bounded by open space to the south and west, and an existing soccer field, baseball diamond, and associated parking lots to the north and east. The nearest sensitive receptor would be located in the residential area in the extended vicinity of the project, approximately 170 feet north of the project site, opposite Pinole Valley Road.

Emissions of carbon monoxide (CO) are of potential concern, as the pollutant is a toxic gas that results from the incomplete combustion of carbon-containing fuels such as gasoline or wood. CO emissions are particularly related to traffic levels. The proposed project would not be expected to result in a substantial increase in vehicle trips in the area, and would be consistent with what has been anticipated for the site, as the project is consistent with the land use and zoning designation and surrounding uses. Applying the default trip rate of 1.59 trips per acre of city park land use per day utilized in the CalEEMod software to the project site's 8,100 square feet (approximately 0.186 acres), the proposed project would result in less than one additional average daily trip. Thus, the proposed project would not result in a substantial increase in traffic volumes in the area and, similarly, would not result in a substantial increase in levels of CO at surrounding

intersections. Consequently, the project would not generate localized concentrations of CO in excess of applicable standards.

Another category of environmental concern is TACs. The CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook) provides recommendations for siting new sensitive land uses near sources typically associated with significant levels of TAC emissions, including, but not limited to, freeways and high traffic roads, distribution centers, and rail yards. The CARB has identified diesel particulate matter (DPM) from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Health risks from TACs are a function of both the concentration of emissions and the duration of exposure. Health-related risks associated with DPM in particular are primarily associated with long-term exposure and associated risk of contracting cancer.

The proposed project site is not located near any existing sources of TACs (i.e., high volume freeways, rail yards, stationary diesel engines, or facilities attracting heavy and constant diesel vehicle traffic such as warehouse distribution centers). In addition, the proposed project would not involve any operations that would involve or potentially result in the generation of TACs. However, during construction of the proposed project, various diesel-powered vehicles and equipment would be in use on the site. Emissions from diesel powered construction equipment on the site would be temporary and spread over the site and would not affect any specific receptor for any length of time.

The temporary nature of DPM is a result of the fact that project construction is limited in extent and would not be expected to occur more than one construction season. Furthermore, the federal government and BAAQMD have established regulations governing the emissions of off-road construction vehicles with the intent of reducing emissions over time. All construction vehicles would be required to comply with the applicable regulations. Overall, due to the site's location relative to the nearest sensitive receptor and the duration and temporary nature of the construction phase, emissions of DPM associated with construction emissions would not be substantial enough to cause health effects.

For the aforementioned reasons, the project would not expose sensitive receptors to substantial pollutant concentrations, and impacts would be ***less than significant***.

e. The proposed project may cause temporary odors from diesel exhaust during construction. However, these odors would cease after construction is completed. The proposed project does not involve any operations that could generate odors. The project site is bounded by open space to the west and south and Pinole Valley Road to the north and east. Sensitive receptors are not located in the immediate vicinity of the project site. The nearest sensitive receptor, which would be located in the residential area in the extended vicinity of the project, would be over approximately 170 feet from the project site. Therefore, the proposed project would not create objectionable odors affecting a substantial number of people, and impacts would be considered ***less than significant***.

IV. BIOLOGICAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	✖	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	✖	☐
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	✖	☐
d. Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	☐	☐	✖	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	✖	☐	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	✖

Discussion

a. The proposed project site is primarily made up of ruderal vegetation with a few scattered trees, which would not be removed during construction. Immediately adjacent to the site to the east is an existing soccer field and associated parking lot. The site was previously disturbed and covered with imported soils in association with development of the adjacent soccer field. An existing baseball diamond and associated parking lot is located further north/northwest of the site. Surrounding the site to the south and west is open space associated with the remainder of the Pinole Valley Park, including Pinole Creek to the south and an unnamed tributary to the west. The California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) was utilized to determine the special-status or sensitive plant and wildlife species known to occur within a five-mile radius of the proposed project site. The results of the CNDDB query indicate

that nine special-status or sensitive plant species and 15 special-status or sensitive wildlife species have been recorded within five miles of the project site.

All of the special-status plants and wildlife species recorded within five miles of the project site occur in specialized habitats that do not occur on the project site, such as chaparral (e.g., Diablo helianthella, Loma Pritea hoita), salt marshes (e.g., California black rail, California clapper rail, San Pablo song sparrow), coastal habitats (e.g., bent-flowered fiddleneck, fragrant fritillary, cackling goose), forests (e.g., western leatherwood, bald eagle), vernal pools (e.g., Contra Costa goldfields), mountains or hills (e.g., pallid manzanita), grasslands (e.g., Santa Cruz tarplant, Alameda whipsnake), or other aquatic habitats (e.g., California red-legged frog, western pond turtle). As stated above, the proposed project site is primarily made up of ruderal vegetation with a few scattered young oak trees, which would not be removed during construction. Dense vegetation does not exist on the site, nor do any waterways including riparian habitat, federally protected wetlands, or other sensitive natural communities. The site has been disturbed and covered with imported soils in association with development of the adjacent soccer field. In addition, the surrounding areas to the east and north/northwest are regularly utilized in association with the soccer field and baseball diamond and associated parking lots. It should be noted that the project site is located near riparian and woodland habitat associated with the remainder of Pinole Valley Park, including Pinole Creek to the south and the unnamed tributary to the west. Such habitat could be considered suitable for some of the special-status plants and wildlife species. However, as the proposed project site has been designed to avoid riparian habitat, has been disturbed, is adjacent to regularly disturbed areas, and does not include vegetation other than ruderal vegetation and a scattering of trees that would remain with implementation of the proposed project, the proposed project site itself would not represent suitable habitat for any of the identified special-status plants and wildlife species.

Due to the regularly utilized nature of the site's surrounding area and lack of suitable on-site habitat for the species identified by the CNDDB, special-status plant or wildlife species are unlikely to and are not anticipated to occur on the project site. In addition, for the same reasons, as well as due to the size of the project site and the project's maintenance of existing on-site trees, the proposed project is not expected to affect potential breeding, nesting, or foraging wildlife habitat or unique plant populations. Therefore, the proposed project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS. Accordingly, impacts would be ***less than significant***.

b. Riparian vegetation is considered sensitive. Riparian vegetation functions to control water temperature, regulate nutrient supply, bank stabilization, rate of runoff, wildlife habitat, the release of organic material into streams from surrounding land, release of woody debris which functions as habitat and slow nutrient release, and protection for aquatic organisms. Riparian habitat does not exist on the proposed project site. The nearest riparian habitat is located to the south and west along Pinole Creek and the associated unnamed tributary. Implementation of the proposed project would not involve

any disturbance within the riparian habitat. As such, the proposed project would not affect the riparian habitat or vegetation. In addition, local or regional sensitive habitat types or natural communities regulated by the CDFW or USFWS are not present or associated with the project footprint. The project does not involve removal of any riparian vegetation or sensitive native vegetation. Consequently, the proposed project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS, and impacts would be ***less than significant***.

c. Wetlands or seasonal wetlands generally denote areas where the soil is seasonally saturated and/or inundated by fresh water for a significant portion of the wet season, and then seasonally dry during the dry season. To be classified as "wetland," the duration of saturation and/or inundation must be long enough to cause the soils and vegetation to become altered and adapted to the wetland conditions. Varying degrees of pooling or ponding, and saturation produce different soil and vegetative responses. Such soil and vegetative clues, as well as hydrological features, are used to define the wetland type. Seasonal wetlands typically take the form of shallow depressions and swales that may be intermixed with a variety of upland habitat types. Seasonal wetlands fall under the jurisdiction of the U.S. Army Corps of Engineers (USACE).

The project site is relatively flat with a gradual grade towards the west, allowing natural drainage to the nearby unnamed creek and Pinole Creek. Wetlands, seasonal wetlands, or vernal pools do not exist on the proposed project site and development of the proposed project would not modify the nearby tributary or creek. Further discussion regarding erosion control and water quality is included in Section IX, Hydrology and Water Quality, of this IS/MND. Therefore, the proposed project would not have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means, and impacts would be ***less than significant***.

d. Migratory corridors are natural areas interspersed with developed areas and are important for animal movement, increasing genetic variation in plant and animal populations, reduction of population fluctuations, and retention of predators of agricultural pests, and for movement of wildlife and plant populations. Wildlife corridors have been demonstrated to not only increase the range of vertebrates including avifauna between patches of habitat but also facilitate two key plant-animal interactions: pollination and seed dispersal. Corridors also preserve watershed connectivity. Corridor users could be grouped into two types: passage species and corridor dwellers.

Pinole Creek and associated riparian vegetation would be considered a migratory corridor. However, development of the proposed project site would not modify the creek and riparian vegetarian in any way. In addition, the site is located adjacent to ample open space to the south and west, which allows ample room for any migratory species to go around the project site. Native habitat, plant, or animal populations would not be significantly reduced with implementation of the project. Therefore, the project would not

interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites, and impacts would be ***less than significant***.

e. According to the City Municipal Code Ordinance 2012-03, Tree Protection 17.96.070, protected trees are defined as any native tree with a single perennial stem of 12 inches or larger in circumference measured four and a half feet above the natural grade. While, the proposed project has been designed to avoid removal of any existing on-site trees, certain skateboard park improvements could require pruning of one oak tree, near the point where the connection sidewalk joins the main section of the skateboard park. Accordingly, the proposed project could conflict with the City's Tree Protection Ordinance if tree and root zone protection guidelines are not implemented, and a ***potentially significant*** impact could occur.

Mitigation Measure(s)
Implementation of the following mitigation measures would reduce the potential impacts to a *less-than-significant* level.

IV-1. Prior to and during construction, the City shall ensure that all contractors comply with the tree protection measures outlined in Section 17.96.070 of the Pinole Municipal Code, as follows:

Tree Protection Measures

1. *Prior to and during any demolition, grading or construction, all protected trees within a development area shall be protected by a six (6) foot high chain link (or other material approved by the Community Development Director) fence installed around the outside of the dripline of each tree.*
2. *No oils, gas, chemicals, liquid waste, solid waste, heavy construction machinery or other construction materials shall be stored or allowed to stand within the dripline of any tree.*
3. *No equipment washout will be allowed to occur within the dripline of any tree.*
4. *No signs or wires, except those needed for support of the tree, shall be attached to any tree.*

Damage to a Protected Tree

1. *If any damage occurs to a protected tree during construction, the developer, contractor, or any agent thereof shall immediately notify the Development Services Director so that professional methods of treatment accepted by the Development Services Director may be administered. The repair of the damage shall be at the expense of the responsible party and shall be by professional standards, approved by*

the Development Services Director. Failure to comply will result in a stop work order.

IV-2. *Prior to the issuance of any grading or building permits, all arborist tree protection measures shall be included on the project construction plans for review and approval by the Development Services Department.*

IV-3. *In accordance with Section 17.96.030 of the Pinole Municipal Code, the pruning of any protected tree shall be performed only when it enhances its structural strength, health, general appearance or for safety reasons. Any pruning must be completed by a certified/consulting arborist.*

f. According to the City's General Plan Update EIR, the City is within the boundaries of the Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area (USFWS, 1998). However, the City does not contain habitat for species listed in the recovery plan. The City, including the proposed project site, is not within the boundaries of any Habitat Conservation Plan/Natural Community Conservation Plan. Therefore, implementation of the proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan, and ***no impact*** would occur.

V. CULTURAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☐	✖	☐	☐
b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5?	☐	✖	☐	☐
c. Directly or indirectly destroy a unique paleontological resource on site or unique geologic features?	☐	✖	☐	☐
d. Disturb any human remains, including those interred outside of formal cemeteries.	☐	✖	☐	☐

Discussion

a. A Cultural Resources Study was performed for the proposed project by Tom Origer & Associates (see Appendix B). As discussed in further detail below, the Cultural Resources Study addresses the known buried archaeological materials located within the proposed project's study area. Historical maps do not show any buildings or structures within the study area. However, according to the Cultural Resources Study, historic remains expected in the general area commonly include items of ceramic, glass, and metal. Features that might be present at the project site include structure remains (e.g., cabins or their foundations) and pits containing historic artifacts. Therefore, construction activities have the potential to unearth such currently unknown historic resources, which could destroy or disturb the resources, and impacts would be considered ***potentially significant***.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the potential impacts to a *less-than-significant* level.

V-1. *Prior to the issuance of a grading permit for any construction activities, construction plans shall include a requirement (via notation) indicating that if historic resources are encountered during site grading or other site work, all such work shall be halted immediately within the area of discovery and the contractor shall immediately notify the City of the discovery. In such case, the applicant shall retain the services of a qualified archaeologist for the purpose of recording, protecting, or curating the discovery as appropriate. The archaeologist shall be required to submit to the City for review and approval a report of the findings and method of curation or protection of the resources. Further grading or site work within the vicinity of the discovery, as identified by the qualified archaeologist, shall not be allowed until the preceding steps have been taken.*

b-d. As stated above, a Cultural Resources Study was performed for the proposed project. According to the Cultural Resources Study, at the time of European settlement, the project study area was situated in the territory of the Ohlone, also referred to as the Costanoan. The Ohlone in the project area were of the *xučyun* triblet. The Ohlone were hunter-gatherers who lived in rich environments that allowed for dense populations with complex social structures. They settled in large, permanent villages about which were distributed seasonal camps and task-specific sites. Primary village sites were occupied throughout the year and other sites were visited in order to procure particular resources that were especially abundant or available only during certain seasons. Sites often were situated near fresh water sources and in ecotones where plant life and animal life were diverse and abundant.

As part of the Cultural Resources Study, the State of California's Native American Heritage Commission (NAHC) was contacted. The NAHC subsequently provided a list of Native American groups and individuals to contact. The groups and individuals, including the Ohlone Tribe, were contacted in writing and a log of contact efforts was maintained (see Appendix B). To date, responses have not been received from the tribes that were contacted.

In addition, archival research was completed including review of archaeological site base maps and records, survey reports, and other materials on file at the Northwest Information Center. Historical maps were also examined to gain insight into the nature and extent of historical development in the project vicinity. Ethnographic literature describing appropriate Native American groups and county histories were reviewed as well. According to the archival research, the entire project study area has been previously surveyed in 1977 and 1995, and a small portion of the area again in 2011. Two other studies have been conducted within a half-mile radius. One prehistoric site, CA-CCO-356, falls within the study area and another site, CA-CCO-355, which includes a prehistoric site and the Ignacio Martinez Adobe, is just across Pinole Creek from the study area.

CA-CCO-356 is a shell midden with possible burials and a sparse scatter of obsidian. Investigation of the extreme western portion of CA-CCO-356 was conducted in 2001 by Holman & Associates, for which they excavated 14 auger units and three test investigation units to mitigate the impacts of capping the site with fill through limited data recovery. Burials were not found during the data recovery. According to the Tom Origer & Associates study prepared for this IS/MND, CA-CCO-356 extends approximately 95 feet west from the edge of the adjacent soccer field, into the proposed skateboard park site footprint.

A field survey and four auger borings were completed on December 6, 2013 as part of the Cultural Resources Study to determine the extent of the fill that was placed atop the archaeological site for the creation of the adjacent soccer field and whether archaeological material from CA-CCO-356 extended beyond the fill area. Additional fieldwork was conducted on January 17, 2014 by Tom Origer & Associates to determine fill depth more precisely, including nine new auger borings within and adjacent to the

study area. One of the auger borings was made just beyond the study area to confirm the buried depth, presence, and nature of native soil.

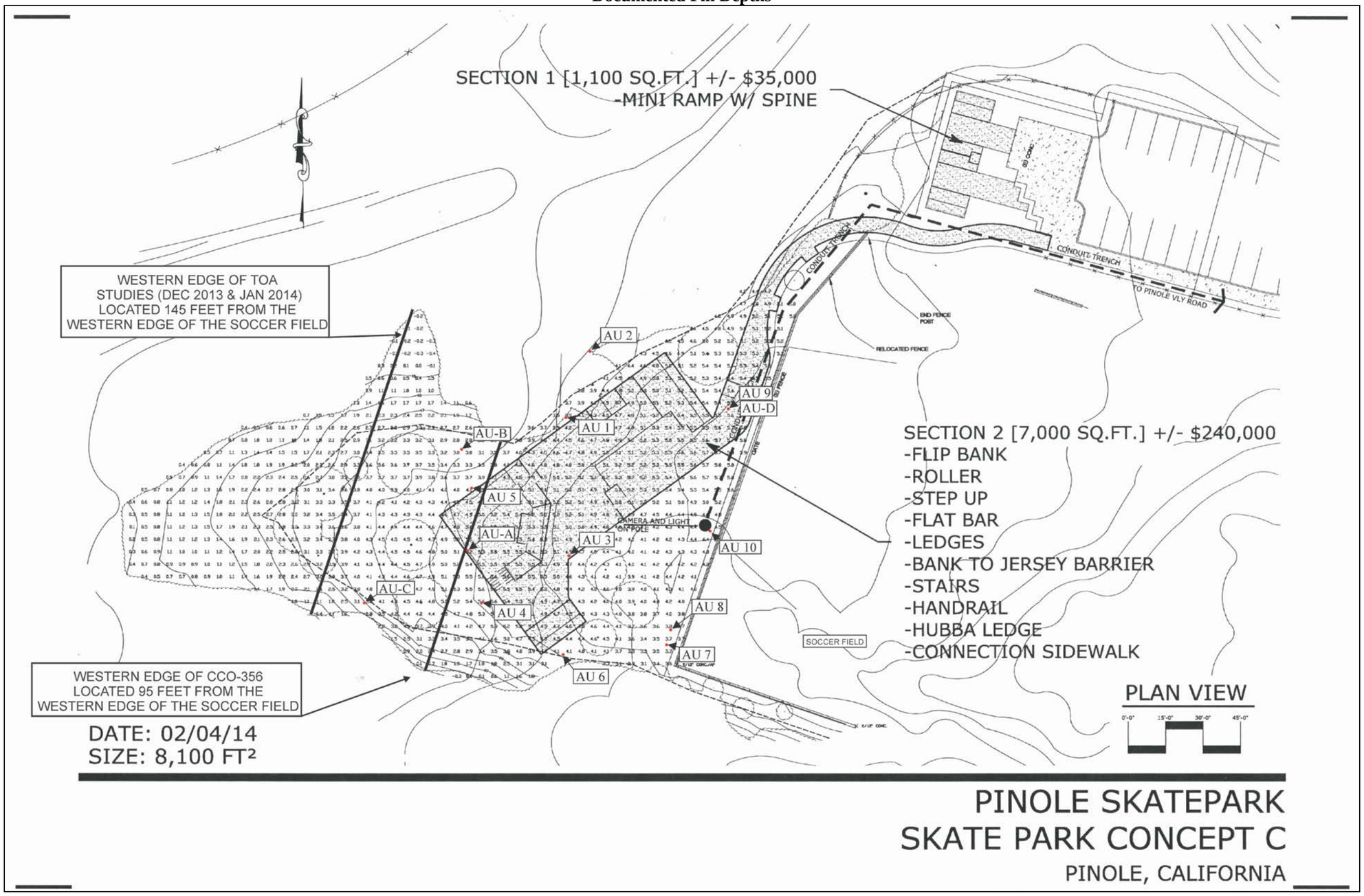
According to the field surveys, CA-CCO-356 is not visible on the current ground surface, as the site has been capped by fill prior to the construction of the adjacent soccer field. The mitigation measures required for the existing soccer field (i.e., limited data recovery and capping) extended west into the proposed project site in order to include the entire recorded site CA-CCO-356. The documented fill depths, as well as the auger boring locations in relation to the proposed project footprint and study area, are shown in Figure 4. Within the project footprint area, fill depths range from 3.1 feet to 5.9 feet, with the greatest depths occurring at the eastern end of the site nearest the adjacent soccer field.

According to the Tom Origer & Associates Cultural Resources Study, earth disturbing activities (e.g., vegetation clearing, utility trenching, excavation) that remain within the documented fill depths, as shown in Figure 4, would not result in adverse impacts to the archaeological resource CA-CCO-356, and do not require archaeological monitoring due to the lack of resources within fill soil. The project has been preliminarily designed to ensure that all improvements would occur within existing fill. Any on-site utility or other excavation within the limits of archaeological site CA-CCO-356 (i.e., zero to 95 feet west from the project's boundary with the adjacent soccer field) should be performed shallow enough to remain within the existing fill. Disturbance beyond the western boundary of the recorded archaeological site (between 95 to 145 feet west of the edge of the adjacent soccer field) would not result in impacts to CA-CCO-356 regardless of whether the activities would occur within the existing documented fill or below. Ground disturbing activities beyond 145 feet west of the edge of the adjacent soccer field are not part of the project. Should any trenching or other excavation within the site boundaries of CA-CCO-356 require such depth that the activities could reach below the documented fill and into the native soil, a qualified archaeologist, meeting the Secretary of the Interior's standards, is recommended to monitor such ground disturbing activities. Without implementation of the aforementioned recommendations identified in the Cultural Resources Study, a ***potentially significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the potential impacts to a *less-than-significant* level.

Figure 4
Documented Fill Depths



V-2(a) *For ground disturbing activities occurring within zero to 95 feet west of the edge of the adjacent soccer field (i.e., the westernmost boundary of CA-CCO-356), all ground disturbance for the project shall occur within the existing documented fill depths as shown in Figure 4 of the Pinole Valley Park Skateboard Park IS/MND. If, during the final design of the project, it is determined that trenching or other excavation in this area requires depths in excess of the documented fill depths shown in Figure 4, a qualified archaeologist, meeting the Secretary of the Interior's standards, shall be hired to monitor the ground disturbing activities. These requirements shall be included on the construction plans (via notation) and submitted to the City Development Services Department for review and approval.*

V-2(b) *For ground disturbing activities occurring within 95 to 145 feet west of the edge of the adjacent soccer field (i.e., area outside of CA-CCO-356) as shown in Figure 4 of the Pinole Valley Park Skateboard Park IS/MND, no mitigated is required.*

V-3. *Prior to issuance of any grading or building permit, the applicant shall ensure that ground disturbance boundary limits are clearly marked in the field and maximum excavation depths are discussed with the selected construction contractor and the City to help ensure adequate protection of potential cultural resources is achieved.*

V-4. *Pursuant to State Health and Safety Code §7050.5 (c) State Public Resources Code §5097.98, if human bone or bone of unknown origin is found during construction activities within the area between 95 feet and 145 feet west of the adjacent soccer field, all work shall stop in the vicinity of the find and the Contra Costa County Coroner shall be contacted immediately. If the remains are determined to be Native American, the coroner shall notify the Native American Heritage Commission who shall notify the person believed to be the most likely descendant. The most likely descendant shall work with the contractor to develop a program for re-internment of the human remains and any associated artifacts. Additional work is not to take place in the immediate vicinity of the find, which shall be identified, at a cost to the applicant, by the qualified archaeologist, until the identified appropriate actions have been implemented.*

VI. GEOLOGY AND SOILS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of a known fault?	☐	☐	✖	☐
ii. Strong seismic ground shaking?	☐	☐	✖	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	✖	☐
iv. Landslides?	☐	☐	✖	☐
b. Result in substantial soil erosion or the loss of topsoil?		☐	✖	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	✖	☐
d. Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code?	☐	☐	✖	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	✖

Discussion

ai-aiv,

c. The proposed project site is located within a region of California characterized by active faulting; however, active faults are not known to cross the project site area and the site is not within a current Earthquake Fault Zone (formerly known as an Alquist Priolo Special Studies Zone). The closest active fault mapped by the California Geological Survey is the Hayward Fault, located approximately four miles to the southwest of the site. According to the City's General Plan Update EIR, the maximum level of ground motion potentially experienced in the City's planning area would occur as a result of a 7.25 magnitude earthquake on the Hayward Fault zone.

Losses from groundshaking can occur where tall structures are built on thick, soft sediments. The amount of damage from shaking is also influenced by the structural integrity of buildings before an earthquake. According to the City's General Plan Update EIR, areas within the City's planning area that are highly susceptible to damages resulting from ground shaking are located between San Pablo Avenue and the San Pablo Bay shoreline, in the western portions of the City. The proposed project is not located in

the aforementioned area. In addition, the City utilizes the California Building Code (CBC) for all development within the City limits. The CBC standards address foundation design, shear wall strength, and other structural-related conditions. All development projects are subject to the CBC, which requires a seismic evaluation and particular seismic design criteria to reduce ground shaking effects.

Liquefaction is the loss of soil strength due to seismic forces generating various types of ground failure. The potential for liquefaction must account for soil types and density, the groundwater table, and the duration and intensity of ground shaking. Based upon known soil, groundwater, and ground shaking conditions within the City's planning area, the potential for liquefaction beneath the area is considered low. Areas potentially susceptible to liquefaction are located along the San Pablo Bay shoreline, the locations in the western portions of the City's planning area, and in areas located underneath deposits of active/recently active stream channels. Additionally, the potential for ground lurching, differential settlement or lateral spreading occurring during or after seismic events is also considered to be low except for the locations discussed above. The proposed project is not located in any such areas described above. Therefore, the proposed project would not be expected to be affected by liquefaction.

Seismically induced landslides are likely to occur along steep to intermediate hillside areas, as well as areas where previous land sliding or soil creeping has occurred, areas where non-engineered grading and uncontrolled drainage on slopes has occurred, or areas with deep colluvial deposits. Slope stability hazards could result in loose debris flows and landslides. The proposed project site is relatively flat and has been capped with soil fill. Therefore, typical conditions for landslides do not occur on the project site and the potential for landslides on the project site would be considered low.

The proposed project would not place any new structures on the site; but rather low-level concrete improvements and pre-fabricated skateboard park features would be installed. It should also be noted that the proposed project would not introduce new residents or employees to the site. Future patrons of the proposed skateboard park site would not be expected to be on-site for any extended periods of time. Accordingly, the likelihood for the project to expose people to risks, including loss, injury, or death involving earthquakes and related effects would be very low. Therefore, implementation of the proposed project would not expose people or structures to substantial adverse seismic-related effects, including landslides, or be placed on a geologic unit or soil that is unstable or would become unstable as a result of the proposed project, and impacts would be ***less than significant***.

b. During construction within the proposed project area, topsoil would be moved and graded, leading to disturbed soils that do not have as much connectivity to the ground as undisturbed soils. Such disturbed soils are likely to suffer from erosion from a variety of sources, such as wind, rainfall, and construction equipment. The City's Erosion and Sediment Control Plan Ordinance (Title 15, Chapter 15.36.190 of the City Code) requires that erosion and sediment control plans, prepared by a registered civil engineer, be submitted to the City for review for any building or construction activities over 0.25-acre.

Therefore, through compliance with the City's Erosion and Sediment Control Plan Ordinance requirements, the project would not result in substantial soil erosion or loss of topsoil, and impacts would be ***less than significant***.

d. According to the Cultural Resources Study prepared for the proposed project by Tom Origer & Associates and the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS)'s Web Soil Survey, soils within the study area are Botella clay loams, 2 to 9 percent slopes, which are well-drained, formed in alluvium from sedimentary rocks, and found in narrow upland valleys. Expansive soils are soils that have a potential for shrinking and swelling under changing moisture conditions. Expansive soils could cause lifting of a building or other structure during periods of high moisture. Conversely, during periods of low moisture, expansive soil will collapse and could result in building settlement. Accordingly, damage due to expansive soils occurs when the amount of moisture contained in the foundation soils fluctuates.

   Expansive soils are generally have a Plasticity Index (PI) greater than about 25. According to the USDA, are Botella clay loams, 2 to 9 percent slopes, has a PI of 17.5, which is below the typical PI range for expansive soils. In addition, the soil is well-drained. Furthermore, as discussed above, the proposed project would be required to comply with the CBC, as well as all other applicable federal, State, and local building codes, regulations, and practices including standards related to expansive soils. Therefore, the proposed project would not be located on or be affected by expansive soils, and impacts would be considered ***less than significant***.

e. The proposed project consists of the construction of a concrete skateboard park and installation of a light pole and security camera. A restroom is not proposed for the project. Because the project would not involve use of a septic system or any type of wastewater treatment, ***no impact*** would occur.

VII. GREENHOUSE GAS EMISSIONS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	✖	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses?	☐	☐	✖	☐

Discussion

a,b. Emissions of greenhouse gases (GHGs) contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on earth. A project's GHG emissions are at a micro-scale relative to global emissions, but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. As such, impacts related to emissions of GHG are inherently considered cumulative impacts.

Implementation of the proposed project would cumulatively contribute to increases of GHG emissions that are associated with global climate change. Estimated GHG emissions attributable to future development would be primarily associated with increases of carbon dioxide (CO_2) and, to a lesser extent, other GHG pollutants, such as methane (CH_4) and nitrous oxide (N_2O) associated with area sources, mobile sources or vehicles, utilities (electricity and natural gas), water usage, wastewater generation, and the generation of solid waste. The primary source of GHG emissions for the project would be mobile source emissions. The common unit of measurement for GHG is expressed in terms of annual metric tons of CO_2 equivalents ($MTCO_2e$/yr).

It should be noted that the BAAQMD was challenged in the Alameda County Superior Court, and was ordered to set aside the proposed thresholds of significance and screening criteria.[2] However, the City of Pinole has determined that the BAAQMD thresholds of significance are the best available option for evaluation of GHG impacts for the project and, thus, are used in this analysis.

[2] As explained previously, the BAAQMD was challenged in Superior Court, on the basis that the BAAQMD failed to comply with CEQA when it adopted its CEQA guidelines. The BAAQMD was ordered to set aside the proposed thresholds and conduct CEQA review of the thresholds. On August 13, 2013, the First District Court of Appeal reversed the trial court's decision. The Court of Appeal's held that CEQA does not require BAAQMD to prepare an EIR before adopting thresholds of significance to assist in determining whether air emissions of proposed projects might be deemed "significant." The Court of Appeal's decision provides the means by which BAAQMD may ultimately reinstate the GHG emissions thresholds, though the court's decision does not become immediately effective. It should be further noted that a petition for review has been filed; however, the court has limited review to the following issue: Under what circumstances, if any, does CEQA require an analysis of how existing environmental conditions will impact future residents or users (receptors) of a proposed project?

The BAAQMD identifies screening criteria for development projects, which provide a conservative indication of whether a development could result in a potentially significant impact associated with GHG emissions. If the screening criterion for GHG is met by a project, a detailed assessment of that project's GHG emissions would not be required. The operational GHG screening criterion for a city park development is if the development is less than or equal to 600 acres. Because the proposed project consists of a total of 8,100 square feet (approximately 0.186 acres), a detailed GHG assessment is not required for the proposed project. Nonetheless, the project's operational GHG emissions have been estimated using the CalEEMod software for disclosure purposes.

The BAAQMD threshold of significance for project-level operational GHG emissions is 1,100 $MTCO_2e$/yr. Construction GHG emissions are a one-time release and are, therefore, not typically expected to generate a significant contribution to global climate change. As such, BAAQMD has not established a threshold of significance for construction-related GHG emissions and does not require quantification.

According to the CalEEMod results, the proposed project would result in estimated unmitigated operational GHG emissions of 70.97 $MTCO_2e$/yr (see Appendix A), which is well below the applicable threshold of significance of 1,100 $MTCO_2e$/yr. Even if the one-time release of construction emissions were to be included in the annual operational GHG emissions estimate, the proposed project's total emissions would be 125.41 $MTCO_2e$/yr (70.97 $MTCO_2e$/yr + 54.44 $MTCO_2e$ = 125.41 $MTCO_2e$/yr), which would still be well below the applicable threshold of significance. Therefore, the proposed project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and impacts associated with the generation of GHG emissions would be considered ***less than significant***.

VIII. HAZARDS AND HAZARDOUS MATERIALS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	✖	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment?	☐	☐	✖	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	✖	☐
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	✖
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	✖
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	✖
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	✖	☐
h. Expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	✖	☐	☐

Discussion

a,b. The proposed project consists of the construction of a concrete skate park and installation of a light pole and security camera. The proposed project does not propose any land uses or operations that would involve the routine transport, use, or disposal of hazardous materials; thus, the project could not result in a reasonably foreseeable upset or accident condition involving the release of such materials into the environment, Therefore, the proposed project's impacts associated with the creation of a significant hazard to the public or the environment associated with hazardous materials would be ***less than significant***.

c. The nearest school is Ellerhorst Elementary School located approximately one-half mile northwest of the project site. Therefore, the project would have a ***less-than-significant*** impact related to hazardous emissions or the handling of hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

d. The proposed project site is not included on the list of hazardous materials sites complied pursuant to Government Code Section 65962.5.[3] As a result, the proposed project would not create a significant hazard to the public or the environment. Therefore, ***no impact*** would occur.

e,f. The project site is not located within an airport land use plan, two miles of a public airport, or the vicinity of a private airstrip. The nearest airport is the Buchanan Field Airport located approximately 12 miles east of the project site. In addition, the project does not involve any proposed uses that would result in an increase in populations in the area. Therefore, the project would not result in a safety hazard for people residing or working in the project area, and impacts would be ***less than significant***.

g. The proposed project would not physically interfere with any existing emergency plans, because the project would not alter the existing street system. Therefore, the project's impact would be ***less than significant***.

h. The proposed project is located within and adjacent to an open space area of an existing park site, which includes areas of dense brush. According to the City's General Plan Update, the project is located within a Very High Fire Hazard Severity Zone (VHFHSZ), which means that the site is in an area that is prone to wildfire. Such a designation places certain restrictive building codes on development in the area. The Pinole Fire Department manages the open space boundary issues and maintains the fire roads in the City's open space areas. It should be noted that the proposed project would not remove any existing on-site trees; however, other vegetation, such as flammable underbrush surrounding the proposed project area, may be required to be cleared. Compliance with the applicable building codes and any applicable Fire Department requirements would help to ensure the project would not be subject to wildland fires.

A concrete impervious area would be placed on the project site. Flammable materials or operations involving flammable materials are not proposed for the project site. In addition, the proposed project would not introduce new residents or employees to the area and is not immediately adjacent to existing development, other than the soccer field and associated parking lot. Future patrons of the proposed skateboard park site would not be expected to be on-site for any extended periods of time. Accordingly, the likelihood for the project to expose people to risks, including loss, injury, or death involving wildland fires would be very low. However, without compliance with any applicable vegetation clearance requirements, the project could expose future patrons to risks involving wildland fires, and impacts would be considered ***potentially significant***.

3 California Environmental Protection Agency, Cortese List, http://www.envirostor.dtsc.ca.gov, accessed December 7, 2012.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the potential impacts to a *less-than-significant* level.

VIII-1. *Prior to any construction, a pre-construction meeting shall be held between the construction contractors, a licensed arborist, Fire Department staff, and Development Services staff to coordinate vegetation clearance and tree protection measures during project construction.*

IX. HYDROLOGY AND WATER QUALITY. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements?	☐	☐	✖	☐
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	✖	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	✖	☐
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	✖	☐
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	✖	☐
f. Otherwise substantially degrade water quality?	☐	☐	✖	☐
g. Place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	✖	☐
h. Place within a 100-year floodplain structures which would impede or redirect flood flows?	☐	☐	✖	☐
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.	☐	☐	✖	☐
j. Inundation by seiche, tsunami, or mudflow?	☐	☐	✖	☐

Discussion

a,f. Surface water quality can be adversely affected by erosion during project construction. Construction activities disturbing one or more acres are required under the federal Clean Water Act to comply with the State Water Resources Control Board (SWRCB) General Construction Activity Stormwater Discharge Permit. The proposed project would disturb approximately 0.186 acres and, thus, would not be subject to the requirements of the

General Construction Activity Stormwater Permit. However, the proposed project would be required to comply with the City's Erosion and Sediment Control Plan Ordinance (Title 15, Chapter 15.36.190 of the City Code), including preparing an erosion and sediment control plan prepared by a registered civil engineer or providing verification that the project would be exempt from preparing an erosion and sediment control plan by showing how the project would meet the City's list of conditions (Section 15.36.190.A of City Code).

The proposed project would introduce new impervious surfaces to the site, where currently none exist, which would preclude erosion upon placement. In addition, although the project would modify the existing drainage pattern on the site, the amount of impervious surfaces proposed for the project is relatively minimal; thus, the project would not generate a substantially increased amount of urban runoff. The currently pervious surface of the project site allows runoff to percolate into the soil and/or drain to the nearby Pinole Creek and unnamed tributary. Any runoff from the project site would continue to percolate at the boundaries of the site and/or drain to the nearby creek upon development of the site. The proposed project would not involve any operations that could result in an increase in polluted runoff from the site. Implementation of the proposed project would not generate any new wastewater and would not involve the discharge of any materials. Therefore, the proposed project would not violate any water quality standards or waste discharge requirements and would not degrade water quality, and impacts would be ***less than significant***.

b. The proposed project would not introduce new population to the area. As such, a demand for water would not occur and groundwater supplies would not be depleted. The amount of impervious surfaces proposed for the project is relatively minimal and the site is located adjacent to open space areas within a much larger park site, which would allow adequate groundwater recharge in the project area. As such, the minimal addition of impervious surfaces would not substantially interfere with groundwater recharge. Because the project would not deplete groundwater supplies or interfere with groundwater recharge, a ***less-than-significant*** impact would occur.

c-e. The proposed project would introduce approximately 8,100 square feet of new impervious surfaces to the site where currently none exist. As such, the project would modify the existing drainage pattern of the site. However, due to the size of the project site and the amount of impervious surfaces proposed, the project would not generate a substantially increased amount of runoff. The currently pervious surface of the project site allows runoff to percolate into the soil and/or drain to the nearby Pinole Creek and unnamed tributary. Any runoff from the project site would continue to percolate at the boundaries of the site and/or drain to the nearby creek upon development of the site. Therefore, any increase in amount or rate of runoff resultant from the proposed project would not be considered substantial.

Development of the project site would not involve disturbance or alteration of the nearby Pinole Creek or unnamed tributary and, as discussed above, would not be expected to result in erosion with compliance with the City's Erosion and Sediment Control Plan

Ordinance. In addition, the proposed uses on the site would not cause an increase in polluted runoff. Because the project would not substantially alter the existing drainage pattern or the area and would not create or contribute substantial runoff water or polluted runoff, the project's impacts would be considered ***less than significant***.

g-i. According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map, Panel Number 06013C0232F, the proposed project is located in Flood Zone X, which is defined as an area of minimal flood hazard from the principal source of flood in the area and determined to be outside of the 0.2 percent annual chance floodplain. Therefore, the project site is not located within the 100-year floodplain. In addition, the project does not involve the placement of housing nor would the project increase population in the area. Because buildout of the proposed project would not place within the 100-year floodplain structures that would impede or redirect flood flows, and would not expose people or structures to a significant risk of loss, injury, or death involving flooding, the project would result in a ***less-than-significant*** impact related to development within the 100-year floodplain.

j. Tsunamis are defined as sea waves created by undersea fault movement. A tsunami poses little danger away from shorelines; however, when tsunamis reach the shoreline, high swells of water break and wash inland with great force. According to the City's General Plan Update EIR, the potential for a significant tsunami event to occur within the City's planning area and cause any significant damage is considered low. Possible effects of a tsunami would likely occur in areas near the shores of the San Pablo Bay, which is located on the western boundary of the City, opposite from the proposed project site. In addition, the General Plan Update EIR states that the San Francisco Bay would significantly attenuate the effect of tsunamis that might reach Pinole. Therefore, the project site would not be at risk of inundation by waters from a tsunami.

A seiche is a long-wavelength, large-scale wave action set up in a closed body of water such as a lake or reservoir, with destructive capacity that is not as great as that of a tsunami. The project is not located near a closed body of water large enough for a seiche to occur; therefore, the proposed project is not anticipated to be impacted by seiches. Mudflows typically occur at the base of mountainous or hilly terrain. Because the project site is not located at the base of any significant slopes, the project site would not be expected to be susceptible to mudflow inundation. Overall, the project area would not be threatened by a seiche, tsunami, or mudflow, and a ***less-than-significant*** impact would occur.

X. LAND USE AND PLANNING. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Physically divide an established community?	☐	☐	☐	✖
b. Conflict with any applicable land use plans, policies, or regulations of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating on environmental effect?	☐	☐	✖	☐
c. Conflict with any applicable habitat conservation plan or natural communities conservation plan?	☐	☐	☐	✖

Discussion

a. The proposed project site is an undeveloped area within Pinole Valley Park, adjacent to open space areas of the park as well as an existing soccer field, baseball diamond, and associated parking lots. Development of the proposed project would consist of construction of a concrete skate park and installation of a light pole and security camera. The site is not bounded by an established community and is consistent with the planned and surrounding existing uses. Therefore, implementation of the proposed project would not physically divide an established community, and ***no impact*** would occur.

b. The proposed project site is located within an existing City-owned park facility that is designated in the General Plan and zoned as Parks and Recreation. The project is consistent with the land use and zoning designation for the site. A modification to land uses in the area would not occur. Development of the project would not interfere with the existing uses and would not involve any identifiable potential for conflict with surrounding land uses. Therefore, the proposed project would not conflict with any applicable land use plans, policies, or regulations and would result in a ***less-than-significant*** impact.

c. According to the City's General Plan Update EIR, the City is within the boundaries of the Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area (USFWS, 1998). However, the City does not contain habitat for species listed in the recovery plan. The City, including the proposed project site, is not within the boundaries of any Habitat Conservation Plan/Natural Community Conservation Plan. Therefore, implementation of the proposed project would not conflict with any applicable Habitat Conservation Plan, Natural Community Conservation Plan, and ***no impact*** would occur.

XI. MINERAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	✖
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	✖

Discussion

a,b. The City of Pinole General Plan does not identify any regionally or locally important mineral resources within the City. In addition, known mineral resources of value to the region, residents of the state, or locally have not been identified on-site or during development of any adjacent uses. Therefore, the proposed project would not have an adverse effect on known mineral resources or recovery sites and ***no impact*** would occur.

XII. NOISE. *Would the project result in:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	✖	☐
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	✖	☐
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	✖	☐
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	✖	☐
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	✖
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	✖

Discussion

a,c. For most people, the usual consequences of noise are associated with speech interference, distractions at home and at work, disturbance with rest and sleep, and disruption of recreational pursuits. The ambient noise of a community is all environmental noise, which is usually a composite of sound from many sources near and far. The noise of individual events, such as a passing car or train, an aircraft flying overhead or a lawn mower in the neighborhood, are superimposed on this composite of sound. The CEQA Guidelines define a project-level impact as being significant if it "[…] increases substantially the ambient noise levels for adjoining areas."

The City's General Plan Update policies set forth acceptable exterior and interior noise level standards. The normally acceptable noise standards for new land uses are established in the Land Use Compatibility for Community Exterior Noise Environments table of the General Plan Update. The normally acceptable range for "Outdoor Sports & Recreation, Neighborhood Parks & Playgrounds" is noise levels below 65 dB day-night average sound level (L_{dn}), with a conditionally acceptable range from 65 to 80 dB Ldn, and unacceptable range for levels of 80 dB Ldn. In order to protect the noise environment in existing residential areas, the City requires mitigation for any project that would result in any of the following circumstances:

- The project would cause the Ldn to increase 3 dB or more;
- Any increase would result in an Ldn greater than 60 dB;
- The Ldn already exceeds 60 dB; or
- The project has the potential to generate significant adverse community response.



A noise assessment was prepared by Wilson, Ihrig & Associates, Inc. in June 2009 for a previously proposed skateboard park to be located directly adjacent to the baseball diamond in Pinole Valley Park, which is located approximately 450 feet west/northwest of the proposed project site. The previously proposed skateboard park would represent similar characteristics as the proposed project in relation to the location of the nearest sensitive receptors and the projected noise generation. The expected noise levels associated with a skateboard park were estimated using measured data from two other skate parks. Measurements at one of the skate parks (Derby Park in Santa Cruz, which is surrounded on three sides by buildings and fences that created reverberation) were taken while 10 to 20 skaters were present at distances of 120 feet and 130 feet. Measurements at the other skate park (Santa Rosa Skate Park, which is a much larger skateboard park located in an open space area) were taken while 20 to 30 skaters were present at the same distances as taken at Derby Park. The Santa Rosa noise levels were consistently 4 dB lower than Derby Park, which is likely due to reverberation effects at Derby Park and differences in the skating surfaces. The Santa Rosa track is believed to have a smoother surface than Derby Park, as the rolling noise at Santa Rosa was inaudible at 120 feet, and noise produced by rolling is strongly dependent on the roughness of the rolling surface. The skate park noise data used for Pinole Valley Park were averages of measurements collected on the two example skate parks.

The noise assessment looked at five locations in association with the previously proposed skateboard park, which included the following:

1. Pinole Valley Road at intersection with Monte Vista Drive (340 feet from skateboard park);
2. Pinole Valley Road at intersection with Monte Verde Drive (195 feet from skateboard park);
3. Pinole Valley Road at intersection with Simas Avenue (335 feet from skateboard park);
4. On Monte Verde Drive, between 2309 and 2311 Monte Verde Drive (630 feet from skateboard park); and
5. On Seville Court, beside 2305 Monte Verde Drive, 60 feet from Monte Verde Drive (455 feet from skateboard park).

According to the noise assessment, the then-existing levels at the five assessment locations, the estimated skateboarding noise contribution, and the change in noise relative to then-existing levels were determined to be as presented in Table 5. As shown in the table, areas away from traffic noise along Pinole Valley Road were observed to be in the normally acceptable range for new developments as discussed above; and the areas along Pinole Valley Road were observed to be in the conditionally acceptable range.

Table 5
Measured L_{dn} Noise Levels (dB)

Measurement Location	Existing L_{dn}	Skating L_{dn}	Combined L_{dn}	Increase dB
Location 1	68	43	68	0
Location 2	66	48	66	0
Location 3	67	44	67	0
Location 4	58	38	58	0
Location 5	56	36	56	0

Source: Wilson, Ihrig & Associates, Inc., June 2009.

According to the noise assessment, if two noise levels are 10 dB or more apart, the summation of the two noise levels is equal to the louder of the two noise levels (i.e., the addition of the second, lower noise level does not increase the overall level). The counter-intuitive result is a consequence of the logarithmic nature of decibels. Thus, as shown in the table, skateboarding was determined not to generate enough noise to increase the day-night noise exposure (L_{dn}) levels in the neighborhood. Utilizing the same method, even if the noise levels along Pinole Valley Road and areas further from Pinole Valley Road have increased since the time the noise assessment was prepared, the same results would occur, as the noise from the proposed skateboard park would be even further below existing noise levels in the neighborhood. In addition, the project site is bound by open space to the west and south, an existing soccer field and associated parking lot to the east, and an existing baseball diamond and associated parking lot further to the north/northwest. The nearest sensitive receptor would be approximately 170 feet from the project site, separated by Pinole Valley Road, and sound levels dissipate at a rate of approximately 6 dB with every doubling of distance. Thus, the proposed project would not be expected to generate enough noise to result in an increase in the L_{dn} levels in the neighborhood or expose any receptors to a substantial increase in noise levels. Noise associated with the proposed skateboard park would not involve any strong peaks and would be expected to blend in with the existing noises in the area.

Consequently, the proposed project would not result in exposure of persons to or generation of noise levels in excess of standards established in the City's General Plan. In addition, because the proposed project would only be used during the daytime hours, the project would not result in a substantial permanent increase in ambient noise levels in the project vicinity. Therefore, impacts would be considered ***less than significant***.

b. Federal, state, or local regulatory standards for vibration do not exist; however, various criteria have been established to assist in the evaluation of vibration impacts, including vibration criteria based on human perception and structural damage risks developed by Caltrans. For most structures, Caltrans considers a peak-particle velocity (ppv) threshold of 0.2 inches per second (in/sec) at a distance of approximately 50 feet to be the level at which architectural damage (i.e., minor cracking of plaster walls and ceilings) to normal structures may occur. In terms of human annoyance, continuous vibrations in excess of 0.1 in/sec ppv are identified by Caltrans as the minimum level perceptible for ground vibration.

The proposed project's operations would not involve sources of excessive groundborne vibration. However, construction activities could result in short-term groundborne vibration levels that could affect nearby sensitive land uses. According to the City's General Plan Update EIR, the maximum level of vibration associated with construction is typically due to a pavement breaker, which was measured to produce a ppv of 2.88 in/sec at 10 feet. Groundborne vibration levels of pile drivers can range from approximately 0.17 to 1.5 in/sec ppv. Pile driving could result in a high potential for human annoyance from vibrations if activities performed within 200 feet of occupied structures. As stated above, the nearest sensitive receptor would be located over approximately 170 feet from the project site, separated by Pinole Valley Road. In addition, it should be noted that a pavement breaker or pile driver would not be required for development of the proposed project. Consequently, groundborne vibration associated with the proposed project's construction activities would not be anticipated to be substantial at the nearest sensitive receptor. Furthermore, the City's Municipal Code Section 15.02.070, General Regulations of Construction, establishes hourly restrictions that pertain to construction-related activities, which would help to avoid vibrations during times when such noise would be more of a nuisance. Because the proposed project would not result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels, impacts would be ***less than significant***.

d. Noise levels would temporarily increase with the influx of trucks, construction equipment, and people during the construction process. According to the City's General Plan Update EIR, individual construction equipment noise levels typically range from approximately 74 to 88 dB at 50 feet. The City's Municipal Code Section 15.02.070, General Regulations of Construction, establishes hourly restrictions that pertain to construction-related activities. As stated above, the nearest sensitive receptor would be approximately 170 feet from the project site. In addition, due to the short-term nature of construction noise (approximately four months), the intermittent frequency of construction noise, and the required compliance with the construction noise standards established as part of the City's existing Municipal Code, construction noise level increases would not result in a substantial temporary or periodic increase in ambient noise levels that would result in exposure of persons to or generation of noise levels in excess of applicable standards. Therefore, impacts would be considered ***less than significant***.

e,f. The project site is not located within an airport land use plan, two miles of a public airport, or the vicinity of a private airstrip. The nearest airport is the Buchanan Field Airport located approximately 12 miles east of the project site. In addition, the project does not involve any proposed uses that would result in an increase in populations in the area and is not immediately adjacent to any sensitive receptors. Therefore, the project would not expose people to excessive noise levels associated with air traffic, and ***no impact*** would occur.

XIII. POPULATION AND HOUSING. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure)?	☐	☐	☐	✖
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	✖
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	✖

Discussion

a-c. The proposed project involves the construction of a concrete skatepark and associated infrastructure. Development of the proposed project would not result in any direct effect on population and would not involve the creation of any new housing or employment opportunities within the City. Housing does not currently exist on the project site and existing housing would not be demolished as part of the proposed project. Therefore, the project would not induce population in the area nor displace housing or people, and ***no impact*** would occur related to population and housing.

XIV. PUBLIC SERVICES. *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Fire protection?	☐	☐	✖	☐
b. Police protection?	☐	☐	✖	☐
c. Schools?	☐	☐	✖	☐
d. Parks?	☐	☐	✖	☐
e. Other Public Facilities?	☐	☐	✖	☐

Discussion

a. As stated in Section VIII, Hazards and Hazardous Materials, of this Initial Study, the project site is located within a Very High Fire Hazard Severity Zone (VHFHSZ), which means that the site is in an area that is prone to wildfire. Accordingly, the project would be required to comply with certain restrictive building codes, including vegetation clearance requirements, which would help to reduce the potential for fire hazards at the project site. However, it should be noted that implementation of the proposed project would not involve any uses that would result in an increase in the potential for fire hazards in the area.

The City's Fire Department manages open space boundary issues, as well as maintains the fire roads and fire breaks in the City's open space areas and patrols the open space with assistance from the Pinole Police Department. Thus, fire protection services are already provided to the project site. Therefore, as the project would not increase the potential for fire hazards and the project site is already provided fire protection services, an increase to the Fire Department's facilities or equipment would not be required in order for the Fire Department to provide adequate service to the project. Overall, the proposed project would result in a ***less-than-significant*** impact associated with fire protection services.

b-e. The proposed project involves the construction of a concrete skatepark and associated infrastructure. The project does not involve housing and would not introduce new residents or employees to the area. As such, the project would neither directly nor indirectly result in an increased demand for police protection services, schools, parks, or other public facilities. Therefore, overall the proposed project would have a ***less-than-significant*** impact regarding the provision of new or physically altered police protection, schools, park, or other services and facilities.

XV. RECREATION. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	✖	☐
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	✖	☐

Discussion

a,b. The proposed project is located within Pinole Valley Park, which is a large open space recreational area within the City. The project would not introduce new residents or employees to the area; thus, the project would not be expected to result in a direct increase in the use of the existing park facility such that physical deterioration of the facility would occur or be accelerated. The proposed project would introduce recreational amenities to the existing park that are current unavailable, thus, providing nearby residents with additional recreational opportunities. Impacts related to the physical effects on the environment associated with implementation of the proposed project are addressed throughout this IS/MND in each respective impact area, and mitigation measures sufficient to reduce any potentially significant impacts to less-than-significant levels are included, where necessary. Overall, the proposed project would result in a ***less-than-significant*** impact related to recreation.

XVI. TRANSPORTATION AND CIRCULATION. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	✖	☐
b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	✖	☐
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	✖
d. Substantially increase hazards due to a design features (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	✖	☐
e. Result in inadequate emergency access?	☐	☐	✖	☐
f. Conflicts with adopted policies supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	✖

Discussion

a,b. The proposed project would include the construction of a concrete skateboard park and installation of a light pole and security camera adjacent to existing play fields and associated parking lots within the Pinole Valley Park. Modifications to the existing roadway network or access points would not occur with implementation of the proposed project. The project would be consistent with the recreational uses anticipated for the site and would not be expected to exceed the number of vehicle trips anticipated for the entire Pinole Valley Park site. According to a traffic analysis prepared for a skate park project located in the City of Huntington Beach, where the traffic consultant surveyed other local skate parks within Orange County to derive an applicable trip rate from count data, a skate park could result in an associated average daily trip rate of 9.14 trips per thousand square feet (ksf).[4] The measured average daily trip rate is similar to that of the average daily trip rate on a Saturday for a Recreational Community Center (495) land use per the Institute of Transportation Engineers (ITE) Manual. Utilizing the same trip rate for the proposed project, the project would be estimated to generate up to 74 new daily vehicle trips (37 roundtrips). The roadway volumes computed by Dowling Associates, Inc. for the Pinole General Plan buildout conditions indicate that the segment of Pinole Valley

[4] Austin-Foust Associates, Inc. *Center Avenue Skate Park Traffic Analysis.* December 2011.

Road in the project's vicinity would operate at LOS C.[5] Adding 74 new daily trips to this roadway would not degrade the roadway to an unacceptable LOS E operation. Thus, the proposed project would not result in a substantial increase in traffic volumes in the area and would not cause, either individually or cumulatively, a level of service standard to be exceeded on any nearby roadway or intersection. Therefore, a ***less-than-significant*** impact would occur.

c. The nearest airport is the Buchanan Field Airport located approximately 12 miles east of the project site. In addition, the project would not increase the population in the area. Therefore, the project would not result in a change in air traffic patterns, including an increase in traffic levels or change in location, and ***no impact*** would occur.

d,e. Modifications to the existing roadway network or access points would not occur with implementation of the proposed project. The site would be accessible via the existing access and parking lot associated with the soccer field immediately adjacent to the west of the project site. As such, the project would not result in any sharp curves, dangerous intersections, or incompatible uses that would substantially increase hazards on the site or immediate vicinity. Adequate emergency access would be provided to the project site. Therefore, impacts would be ***less than significant***.

f. Due to the nature of the proposed project, population in the area would not increase with implementation of the project. The project does not involve the placement of housing or any other land use that would require alternative transportation options. In addition, the project does not involve modifications to area roadways or access points. Therefore, implementation of the proposed project would not conflict with any adopted policies supporting alternative transportation, and ***no impact*** would occur.

[5] City of Pinole. *City of Pinole General Plan Update Background Report, Chapter V: Traffic and Circulation Background*. September 2007. Available at: http://www.ci.pinole.ca.us/planning/genplan/documents.html#GeneralPlanBackgroundDocuments. Accessed February 2014.

XVII. UTILITIES AND SERVICE SYSTEMS. *Would the project:*	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	✖	☐
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	✖	☐
c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	✖	☐
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	✖	☐
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	✖	☐
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	✖
g. Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	✖

Discussion

a,b,d,e. The proposed project would include the construction of a concrete skateboard park and installation of a light pole and security camera. After installation, only routine maintenance would be required at the site. The project would not introduce new residents or employees to the area. As such, the project does not involve any demand for water supply and would not generate any wastewater. Therefore, the project would not exceed any wastewater treatment requirements, require or result in the construction of new water or wastewater treatment facilities or expansion of any existing facilities, affect water supplies, nor affect the capacity of wastewater treatment facilities. Consequently, impacts would be ***less than significant***.

c. The proposed project located adjacent to open space areas within the Pinole Valley Park, which provides sufficient stormwater retention in the area. As discussed in Section IX, Hydrology and Water Quality, of this IS/MND, development of the proposed project would not substantially increase the amount or rate of stormwater runoff. The currently pervious surface of the project site allows runoff to percolate into the soil and/or drain to

the nearby Pinole Creek and unnamed tributary. Any runoff from the project site would continue to percolate at the boundaries of the site and/or drain to the nearby creek upon development of the site. Therefore, new stormwater drainage facilities or expansion of existing facilities would not be required for the project, and a ***less-than-significant*** impact associated with stormwater drainage facilities would occur.

f,g. The proposed project does not involve any uses that would generate solid waste. As such, the project would not affect landfill capacities and would not conflict with any federal, state, or local regulations related to solid waste, and ***no impact*** would occur.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	✖	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	✖	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	✖	☐

Discussion

a. Given the size and location of the proposed project site, as well as the recreational nature of the project, the proposed project would have a low potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. However, where a potentially significant impact could occur (i.e., impacts related to cultural resources and vegetation clearance for wildland fire protection), mitigation measures have been included in this IS/MND that would reduce such impacts to less-than-significant levels. Therefore, the proposed project would have a ***less-than-significant*** impact.

b,c. This IS/MND demonstrates that the proposed project would not be expected to result in adverse impacts to human beings, either directly or indirectly. All impacts identified in this IS/MND were determined to be less than significant, or reduced to less than significant with implementation of the required mitigation measures, and that the project's incremental contribution to potential cumulative impacts would not be cumulatively considerable. Therefore, the project's impact would be considered ***less than significant***.

September 17, 2020

Justin Van Mullem
City of Santa Barbara Parks and Recreation
620 Laguna Street
Santa Barbara, CA 93101

Dear Justin,

The applicant submitted a Preliminary Sewer and Water Demand Study, prepared by RMM Design Group dated July 13, 2020 and a Landscape Plan (L-9) dated July 2020.

Irrigation Existing and Proposed Water Demand

- Recycled water for existing pre-drought irrigation demand is approximately 1,567,920 gallons/year or 4.81 AFY
- Recycled water is proposed for irrigation approximately 1,147,041 gallons/year or 3.52 AFY
- Potable water is proposed for "irrigation" to clean the synthetic turf field (assume 5 minutes for cleaning once per week) with an annual demand is approximately 215,800 gallons/year or 0.66 AFY
- Total proposed irrigation using recycled and potable water is 1,362,841 gallons/year or 4.18 AFY

Conclusion: Irrigation water use existing is 4.81 AFY and proposed is 4.18

ATF. **Potable Water Demand Existing and Proposed**

- Existing potable water use (2013 pre-drought meter reading) is approximately 621,630 gallons/year or 1.90 AFY

  Buildings Proposed Water Demand
  - Potable water demand for the proposed building was determined using the City of Santa Barbara's Water Demand Factor Report for commercial structures of 0.17 AF/Yr/1000 square feet. The water demand is 193,880 gallons/year or 0.60 AFY

  Aquatic Facility Proposed Water Demand
  - Recirculated water is proposed for use in the splash pad to assist in water conservation
  - Pools will be covered when closed to reduce evaporation
  - Potable water demand for the proposed wading pool, swimming pool, water slide and splash pad is approximately 223,160 gallons/year or 0.68 AFY
  - Aquatic facilities require backwashing of filters, assume 212,200 gallons/year or 0.65 AFY

10 East Figueroa Street, Suite 200, Santa Barbara, CA 93101
p: (805) 963-8283 • f: (805) 963-8184
www.rrmdesign.com
a California corporation • Lenny Grant, Architect C26973 • Robert Camacho, PE 76597 • Steve Webster, LS 7561 • Jeff Ferber, LA 2844

- Total proposed demand for potable water is 435,360 gallons per year or 1.33 AFY.

Conclusion: Total existing potable water use for the aquatic center and buildings is approximately 621,630 gallons/year or 1.90 AFY and the proposed demand for the aquatic facility and buildings is 629,240 gallons/year or 1.93 AFY.

Sewer Demand – Existing and Proposed

Sewer use is not metered, so estimating the sewer demand is the equivalent to the domestic water demand. The sewer demand for the existing development on the site is 1.71 AFY. The sewer demand for the proposed project is estimated to be 1.74 AFY (based on 90% percent of water use).

Sincerely,

RRM DESIGN GROUP



Mike Hamilton, PE, QSD/P
Manager of Civil Engineering Services
CA License No. 62696

PRELIMINARY STORMWATER QUALITY REPORT
ORTEGA PARK ON-SITE

SANTA BARBARA, CA

February 27, 2020



PREPARED FOR:
City of Santa Barbara, Parks and Recreation

PREPARED BY:
Michael C. Hamilton, P.E.

rrm design group

10 E. Figueroa Street, Ste. 200
Santa Barbara, CA 93101
(805) 963-8283

Table of Contents

Purpose of Report 1
Location 1
Background 2
Method of Analysis 2
Storm Water Quality 3
Conclusions 4

EXHIBIT 1 ..... EXISTING HYDROLOGY MAP
EXHIBIT 2 ..... PROPOSED HYDROLOGY MAP
EXHIBIT 3 ..... BMP CROSS-SECTION DETAILS

ATTACHMENT 1 ..... DRAINAGE AREA SUMMARY
ATTACHMENT 2 ..... HYDROCAD OUTPUT
ATTACHMENT 3 ..... RETENTION CALCULATIONS
ATTACHMENT 4 ..... INFILTRATION TESTING REPORT

PURPOSE OF REPORT

The purpose of this report is to assess the project site, identify pre-development and post-development drainage conditions, and identify storm water facilities to meet the requirements of the City of Santa Barbara's Storm Water BMP Guidance Manual. The project consists of the demolition of three existing structures, hardscape and a pool at the site and the construction of two new buildings, a pool, a skate park, a basketball court, play areas and a synthetic turf sports field.

LOCATION

The 4.68 acre park is located on the city block bound by North Quarantina Street, East Cota Street, North Salsipuedes Street, and East Ortega Street. See the project vicinity map in Figure 1 below.



Figure 1. Project Vicinity Map

BACKGROUND

Slopes on the majority of the site are approximately 1-4% percent. Runoff from the site flows from the northwest to the southeast, where it enters the City storm drain system through inlets on North Quarantina Street and East Cota Street. There are no offsite flows directly impacting the project site, so the drainage boundary for this analysis will follow the property line as depicted in the Existing Hydrology Map, Exhibit 1. A separate stormwater quality report addresses the proposed improvements within the public right-of-way as these improvements are part of a separate phase of construction.

METHOD OF ANALYSIS

The approach to analyze the runoff from the project site follows the City of Santa Barbara's Storm Water BMP Guidance Manual. The analysis is a comparison of the pre-project condition to the post-project condition for both hydrologic analysis and storm water quality.

The proposed project will increase the impervious area at the site from 15.9% to approximately 29.5%. See the Proposed Hydrology Map, Exhibit B and the Drainage Area Summary, Attachment 1. Table 1 provides a summary of the proposed changes in impervious area. This increase in impervious area will cause an increase in the amount of storm water peak runoff from the site, requiring BMP's to be designed to both retain and detain storm water as outlined in the City's BMP Guidance Manual.

Table 1. Changes in Impervious Area

Proposed Area	Definition	Area (SF)
New Impervious	Area where new impervious area (hardscape, roof, etc.) is proposed where there is existing pervious area (landscaping, etc.)	39,103
Replaced Impervious	Area where new impervious area (hardscape, roof, etc.) is proposed where there is currently existing impervious area (hardscape, roof, etc.)	21,011
Removed Impervious	Area where new pervious area (landscaping, etc.) is proposed where there is currently existing pervious area (landscaping, etc.)	11,559

Proposed Drainage Management Areas

The proposed project site has been divided into two drainage management areas (DMA): 'A', and 'B'. See Proposed Hydrology Map, Exhibit 2.

- DMA 'A' consists of the northeastern half of the project site where a synthetic turf field is proposed. The turf field will be designed with a drainage layer to retain and infiltrate the one-inch storm. The DMA is 99.8% pervious, with two small concrete walkways that will drain to adjacent turf. Therefore, no treatment is required for this portion of the project site. Runoff will flow to the east and be collected by a series of existing inlets lining the existing bike path on Quarantina Street.
- DMA 'B' consists of the southwestern half of the site where the majority of impervious development will occur. Proposed storm drain inlets throughout the DMA will collect runoff and outlet into a series of Cultec stormwater retention chambers below the proposed basketball court. The Cultec chambers are designed to retain and infiltrate the volume of runoff from the one-inch storm and provide detention for the two- through 25-year storms. The

Cultec chambers will outlet to the municipal storm drain system through a connection to the existing curb inlet at the northern corner of the Cota Street and Salsipuedes Street intersection.

Infiltration Testing

Infiltration testing for the site was performed in February of 2019 by Earth Systems Pacific. Four infiltration borings were hand-excavated throughout the site to depths varying from 2.5 to 3.5 feet. Two of the four test borings were not tested for infiltration rates due to encountered shallow groundwater. The remaining two borings yielded infiltration rates of 0.6 and 1.4 inches per hour. See Infiltration Testing Report, Attachment 4.

PEAK FLOW DETENTION

The proposed Cultec stormwater chambers were designed to decrease the post-project peak flow of runoff to that of the pre-project for the 2-year through 25-year storm events. The program HydroCAD was used to determine the volume of runoff and the peak flow of runoff from the project site for various storm events for both pre- and post-project conditions, see HydroCAD output in Attachment 2. The results are summarized in Table 2.

Table 2. Peak Flow Summary

Storm Event	Peak Flows (CFS)	
	Existing	Proposed
2-year	3.83	3.79
5-year	6.90	6.52
10-year	9.06	8.42
25-year	11.78	10.92

The curve number (CN) used for the synthetic turf was calculated using the SCS equation for potential maximum retention (S, in inches). A gravel section of 8.5" with 32% voids gives a maximum retention depth of

$$8.5" \times 0.32 = 2.72"$$

Thus, the curve number is

$$CN = \frac{1000}{S + 10} = \frac{1000}{2.72 + 10} = 78.6 \cong 79$$

VOLUME RETENTION

Per the City's BMP Guidance Manual, the project is required to retain on-site the volume difference between pre- and post-development conditions for the 25-year storm or the one-inch storm, whichever is larger. For this project the one-inch storm event volume difference of 4,170ft³ is larger as seen in Table 3 below. Retention is provided by the proposed Cultec stormwater chambers and the proposed

synthetic turf field, see Table 4. Calculations for the synthetic turf retention and a stage-storage chart for the Cultec chambers are provided in Attachment 3. Exhibit 3 provides BMP Cross-Section Details.

Table 3. Runoff Volume Summary

Storm Event	Runoff Volume (CF) *(Before Retention)*	
	Existing	Proposed
1-inch	2,826	496
2-year	24,669	21,943
5-year	42,940	39,543
10-year	55,873	52,022
25-year	72,260	67,901

Table 4. Volume Retention Summary

Retention BMP	Depth of Gravel Storage (in)	Area of Storage (SF)	Provided Retention Volume (CF)
Synthetic Turf	4	93,452	13,706
Cultec Chambers	-	2,884	3,597
Total			**10,450**

STORM WATER QUALITY

The City of Santa Barbara Storm Water BMP Guidance Manual was used to design storm water quality features to treat the one-inch 24-hour storm. The proposed Cultec stormwater chambers will provide treatment by infiltrating the full retention volume described above. A stage-storage chart for the Cultec chambers is provided in Attachment 3. Exhibit 3 provides BMP Cross-Section Details.

CONCLUSIONS

Based on the findings of this report, the proposed drainage design for this project meets the applicable standards and requirements for the City of Santa Barbara. The proposed drainage plan is consistent with the City's Storm Water Management Program (SWMP) design criteria for development. In summary, the proposed design:

- Reduces the post-development peak flow of runoff to below the pre-development rate for the 2- through 25-year storm events
- Reduces the post-development volume of runoff to below the pre-development rate for the 2- through 25-year storm events
- Treats the runoff from the site for the 1-inch 24-hour storm event.

EXHIBITS

EXHIBIT 1

EXISTING HYDROLOGY MAP



LEGEND

- DRAINAGE AREA BOUNDARY
- SURFACE FLOW DIRECTION
- (A) DRAINAGE AREA NAME

HATCH LEGEND

DESIGNATION	FACILITY	AREA (SF)
	HARDSCAPE	29,832
	LANDSCAPE	171,435
	BUILDING	2,738
	POOL	1,011
	TOTAL AREA	205,016
	TOTAL IMPERVIOUS AREA	32,570 (15.9%)

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ORTEGA PARK
ON-SITE IMPROVEMENTS

EXISTING DRAINAGE AREA MAP

2/27/2020
SCALE: 1"=30'

rrm design group

EXHIBIT 2

PROPOSED HYDROLOGY MAP



LEGEND

- DRAINAGE AREA BOUNDARY
- SURFACE FLOW DIRECTION
- (A) DRAINAGE AREA NAME

HATCH LEGEND

DESIGNATION	FACILITY	AREA (SF)
	HARDSCAPE	55,184
	LANDSCAPE/PERMEABLE AREA	45,969
	BUILDING	4,930
	POOL	5,481
	ARTIFICIAL TURF FIELD	93,452
	TOTAL AREA	205,016
	TOTAL IMPERVIOUS	60,114 (29.3%)

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ORTEGA PARK
ON-SITE IMPROVEMENTS

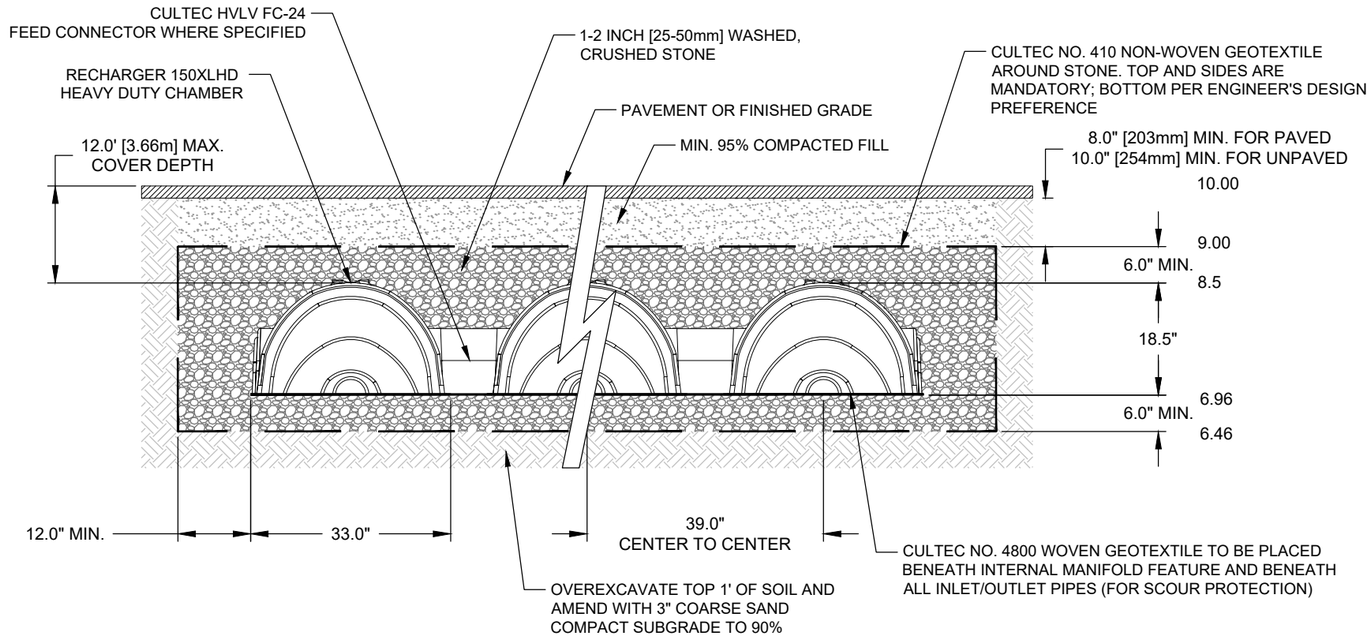
PROPOSED DRAINAGE AREA MAP

2/27/2020
SCALE: 1"=30'

rrm design group

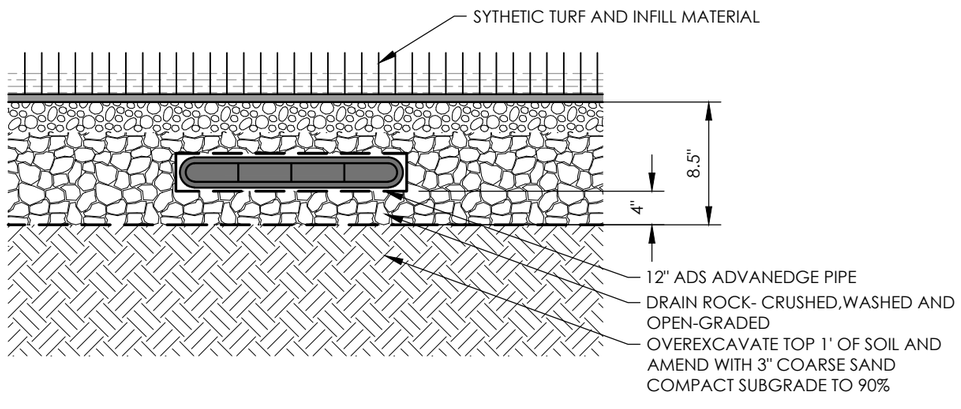
EXHIBIT 3

BMP CROSS-SECTION DETAILS



A CULTEC STORMWATER CHAMBERS

SCALE: N.T.S.



B SYTHETIC TURF SECTION

SCALE: N.T.S.

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ORTEGA PARK
ON-SITE IMPROVEMENTS | DETAILS

DATE 02/24/2020

rrm design group

ATTACHMENTS

ATTACHMENT 1

DRAINAGE AREA SUMMARY

EXISTING DRAINAGE AREA SUMMARY

ORTEGA PARK - ON-SITE EXISTING CONDITION

DMA	Total Area (SF)	Roof (SF)	Hardscape (SF)	Pool (SF)	Landscape (SF)	Total Impervious (SF)	Total Pervious (SF)	Percent Impervious
X1	205,016	2,738	29,832	1,011	171,435	32,570	172,446	15.9%
Total	**205,016**	**2,738**	**29,832**	**1,011**	**171,435**	**32,570**	**172,446**	**15.9%**

PROPOSED DRAINAGE AREA SUMMARY

ORTEGA PARK - ON-SITE PROPOSED IMPROVEMENTS

DMA	Total Area (SF)	Roof (SF)	Hardscape (SF)	DG (SF)	Pool (SF)	Synthetic Turf (SF)	Landscape (SF)	Total Impervious (SF)	Total Pervious (SF)	Percent Impervious	1" 24-Hour Runoff Volume (CF)
A	112,909	0	231	0	0	93,452	19,226	231	112,678	0.2%	602
B	92,107	4,930	54,953	2,532	5,481	0	24,211	59,883	32,224	65.0%	3,545
Total	**205,016**	**4,930**	**55,184**	**2,532**	**5,481**	**93,452**	**43,437**	**60,114**	**144,902**	**29.3%**	**4,147**

Project Statistics

New Impervious Area	39,103
Replaced Impervious Area	21,011
New Pervious Area	11,559

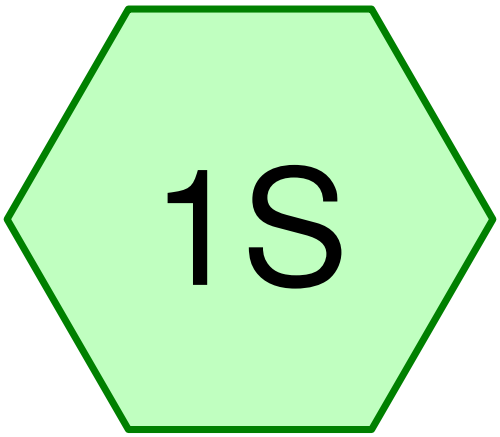
*Proposed New Impervious Area – area where new impervious area (hardscape, roof, etc.) is proposed where there is existing pervious area (landscaping, etc.)

**Proposed Replaced Impervious Area – area where new impervious area (hardscape, roof, etc.) is proposed where there is currently existing impervious area (hardscape, roof, etc.)

*** Proposed New Pervious Area - area where new pervious area (landscaping, etc.) is proposed where there is currently existing pervious area (landscaping, etc.)

ATTACHMENT 2

HYDROCAD OUTPUT



X1

Subcat Reach Pond Link

Routing Diagram for Existing
Prepared by RRM Design Group, Printed 2/27/2020
HydroCAD® 10.00-24 s/n 10829 © 2018 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: X1

Runoff = 0.32 cfs @ 10.02 hrs, Volume= 2,826 cf, Depth> 0.17"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 1-inch Rainfall=1.00"

	Area (sf)	CN	Description
	32,570	98	Paved parking, HSG D
	171,435	80	>75% Grass cover, Good, HSG D
*	1,011	1	Pool
	205,016	82	Weighted Average
	172,446	80	84.11% Pervious Area
	32,570	98	15.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 1S: X1

Runoff = 3.83 cfs @ 10.03 hrs, Volume= 24,669 cf, Depth> 1.44"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 2-year Rainfall=3.20"

	Area (sf)	CN	Description
	32,570	98	Paved parking, HSG D
	171,435	80	>75% Grass cover, Good, HSG D
*	1,011	1	Pool
	205,016	82	Weighted Average
	172,446	80	84.11% Pervious Area
	32,570	98	15.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 1S: X1

Runoff = 6.90 cfs @ 10.03 hrs, Volume= 42,940 cf, Depth> 2.51"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 5-Year Rainfall=4.61"

	Area (sf)	CN	Description
	32,570	98	Paved parking, HSG D
	171,435	80	>75% Grass cover, Good, HSG D
*	1,011	1	Pool
	205,016	82	Weighted Average
	172,446	80	84.11% Pervious Area
	32,570	98	15.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 1S: X1

Runoff = 9.06 cfs @ 10.02 hrs, Volume= 55,873 cf, Depth> 3.27"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 10-Year Rainfall=5.55"

	Area (sf)	CN	Description
	32,570	98	Paved parking, HSG D
	171,435	80	>75% Grass cover, Good, HSG D
*	1,011	1	Pool
	205,016	82	Weighted Average
	172,446	80	84.11% Pervious Area
	32,570	98	15.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

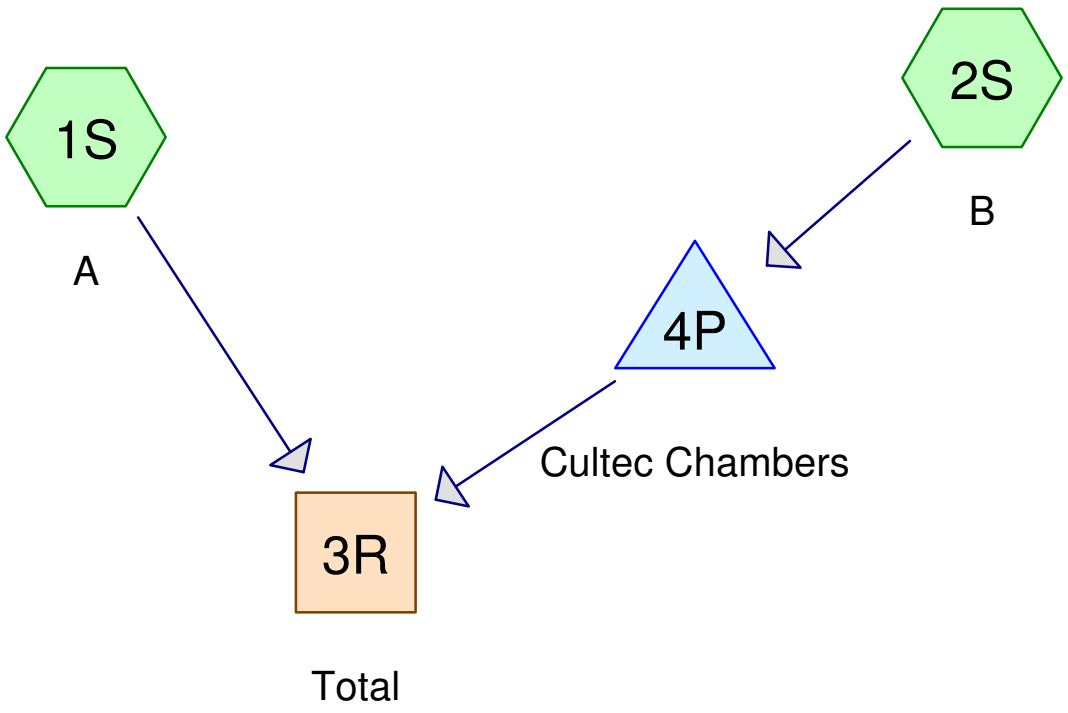
Summary for Subcatchment 1S: X1

Runoff = 11.78 cfs @ 10.02 hrs, Volume= 72,260 cf, Depth> 4.23"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 25-Year Rainfall=6.71"

	Area (sf)	CN	Description
	32,570	98	Paved parking, HSG D
	171,435	80	>75% Grass cover, Good, HSG D
*	1,011	1	Pool
	205,016	82	Weighted Average
	172,446	80	84.11% Pervious Area
	32,570	98	15.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			



Subcat Reach Pond Link

Routing Diagram for Proposed
Prepared by RRM Design Group, Printed 2/27/2020
HydroCAD® 10.00-24 s/n 10829 © 2018 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: A

Runoff = 0.02 cfs @ 12.96 hrs, Volume= 496 cf, Depth> 0.05"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 1-inch Rainfall=1.00"

	Area (sf)	CN	Description
	231	98	Paved parking, HSG D
	19,226	80	>75% Grass cover, Good, HSG D
*	93,452	79	Synthetic Turf
	112,909	79	Weighted Average
	112,678	79	99.80% Pervious Area
	231	98	0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 2S: B

Runoff = 0.58 cfs @ 10.02 hrs, Volume= 3,545 cf, Depth> 0.46"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 1-inch Rainfall=1.00"

	Area (sf)	CN	Description
	54,953	98	Paved parking, HSG D
	24,211	80	>75% Grass cover, Good, HSG D
	4,930	98	Roofs, HSG D
*	5,481	1	Pool
*	2,532	80	Decomposed Granite
	92,107	87	Weighted Average
	32,224	67	34.99% Pervious Area
	59,883	98	65.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 1S: A

Runoff = 1.66 cfs @ 10.04 hrs, Volume= 10,995 cf, Depth> 1.17"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 2-year Rainfall=3.20"

	Area (sf)	CN	Description
	231	98	Paved parking, HSG D
	19,226	80	>75% Grass cover, Good, HSG D
*	93,452	79	Synthetic Turf
	112,909	79	Weighted Average
	112,678	79	99.80% Pervious Area
	231	98	0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 2S: B

Runoff = 2.24 cfs @ 10.02 hrs, Volume= 14,478 cf, Depth> 1.89"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 2-year Rainfall=3.20"

	Area (sf)	CN	Description
	54,953	98	Paved parking, HSG D
	24,211	80	>75% Grass cover, Good, HSG D
	4,930	98	Roofs, HSG D
*	5,481	1	Pool
*	2,532	80	Decomposed Granite
	92,107	87	Weighted Average
	32,224	67	34.99% Pervious Area
	59,883	98	65.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Reach 3R: Total

Inflow Area = 205,016 sf, 29.32% Impervious, Inflow Depth > 1.28" for 2-year event
Inflow = 3.79 cfs @ 10.04 hrs, Volume= 21,936 cf
Outflow = 3.79 cfs @ 10.04 hrs, Volume= 21,936 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.10 hrs

Summary for Pond 4P: Cultec Chambers

Inflow Area = 92,107 sf, 65.01% Impervious, Inflow Depth > 1.89" for 2-year event
Inflow = 2.24 cfs @ 10.02 hrs, Volume= 14,478 cf
Outflow = 2.11 cfs @ 10.06 hrs, Volume= 10,940 cf, Atten= 6%, Lag= 2.1 min
Primary = 2.11 cfs @ 10.06 hrs, Volume= 10,940 cf

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 8.36' @ 10.06 hrs Surf.Area= 2,894 sf Storage= 3,706 cf

Plug-Flow detention time= 162.4 min calculated for 10,935 cf (76% of inflow)
Center-of-Mass det. time= 66.8 min (768.0 - 701.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	6.29'	2,067 cf	**27.50'W x 105.25'L x 2.54'H Field A** 7,357 cf Overall - 2,188 cf Embedded = 5,168 cf x 40.0% Voids
#2A	6.79'	2,188 cf	**Cultec R-150XLHD** x 80 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 8 rows
		4,255 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	7.10'	**15.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=2.06 cfs @ 10.06 hrs HW=8.35' TW=8.23' (Fixed TW Elev= 8.23')
↑**1=Orifice/Grate** (Orifice Controls 2.06 cfs @ 1.68 fps)

Summary for Subcatchment 1S: A

Runoff = 3.30 cfs @ 10.03 hrs, Volume= 20,641 cf, Depth> 2.19"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 5-Year Rainfall=4.61"

	Area (sf)	CN	Description
	231	98	Paved parking, HSG D
	19,226	80	>75% Grass cover, Good, HSG D
*	93,452	79	Synthetic Turf
	112,909	79	Weighted Average
	112,678	79	99.80% Pervious Area
	231	98	0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 2S: B

Runoff = 3.53 cfs @ 10.02 hrs, Volume= 22,446 cf, Depth> 2.92"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 5-Year Rainfall=4.61"

	Area (sf)	CN	Description
	54,953	98	Paved parking, HSG D
	24,211	80	>75% Grass cover, Good, HSG D
	4,930	98	Roofs, HSG D
*	5,481	1	Pool
*	2,532	80	Decomposed Granite
	92,107	87	Weighted Average
	32,224	67	34.99% Pervious Area
	59,883	98	65.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Reach 3R: Total

Inflow Area = 205,016 sf, 29.32% Impervious, Inflow Depth > 2.32" for 5-Year event
Inflow = 6.52 cfs @ 10.05 hrs, Volume= 39,565 cf
Outflow = 6.52 cfs @ 10.05 hrs, Volume= 39,565 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.10 hrs

Summary for Pond 4P: Cultec Chambers

Inflow Area = 92,107 sf, 65.01% Impervious, Inflow Depth > 2.92" for 5-Year event
Inflow = 3.53 cfs @ 10.02 hrs, Volume= 22,446 cf
Outflow = 3.27 cfs @ 10.08 hrs, Volume= 18,924 cf, Atten= 7%, Lag= 3.3 min
Primary = 3.27 cfs @ 10.08 hrs, Volume= 18,924 cf

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 8.54' @ 10.08 hrs Surf.Area= 2,894 sf Storage= 3,913 cf

Plug-Flow detention time= 113.1 min calculated for 18,791 cf (84% of inflow)
Center-of-Mass det. time= 46.7 min (747.7 - 701.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	6.29'	2,067 cf	**27.50'W x 105.25'L x 2.54'H Field A** 7,357 cf Overall - 2,188 cf Embedded = 5,168 cf x 40.0% Voids
#2A	6.79'	2,188 cf	**Cultec R-150XLHD** x 80 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 8 rows
		4,255 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	7.10'	**15.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=3.21 cfs @ 10.08 hrs HW=8.53' TW=8.23' (Fixed TW Elev= 8.23')
↑**1=Orifice/Grate** (Orifice Controls 3.21 cfs @ 2.62 fps)

Summary for Subcatchment 1S: A

Runoff = 4.48 cfs @ 10.03 hrs, Volume= 27,602 cf, Depth> 2.93"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 10-Year Rainfall=5.55"

	Area (sf)	CN	Description
	231	98	Paved parking, HSG D
	19,226	80	>75% Grass cover, Good, HSG D
*	93,452	79	Synthetic Turf
	112,909	79	Weighted Average
	112,678	79	99.80% Pervious Area
	231	98	0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 2S: B

Runoff = 4.43 cfs @ 10.02 hrs, Volume= 27,981 cf, Depth> 3.65"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 10-Year Rainfall=5.55"

	Area (sf)	CN	Description
	54,953	98	Paved parking, HSG D
	24,211	80	>75% Grass cover, Good, HSG D
	4,930	98	Roofs, HSG D
*	5,481	1	Pool
*	2,532	80	Decomposed Granite
	92,107	87	Weighted Average
	32,224	67	34.99% Pervious Area
	59,883	98	65.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Reach 3R: Total

Inflow Area = 205,016 sf, 29.32% Impervious, Inflow Depth > 3.05" for 10-Year event
Inflow = 8.42 cfs @ 10.05 hrs, Volume= 52,036 cf
Outflow = 8.42 cfs @ 10.05 hrs, Volume= 52,036 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.10 hrs

Summary for Pond 4P: Cultec Chambers

Inflow Area = 92,107 sf, 65.01% Impervious, Inflow Depth > 3.65" for 10-Year event
Inflow = 4.43 cfs @ 10.02 hrs, Volume= 27,981 cf
Outflow = 4.05 cfs @ 10.09 hrs, Volume= 24,434 cf, Atten= 8%, Lag= 3.9 min
Primary = 4.05 cfs @ 10.09 hrs, Volume= 24,434 cf

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 8.70' @ 10.09 hrs Surf.Area= 2,894 sf Storage= 4,103 cf

Plug-Flow detention time= 94.9 min calculated for 24,262 cf (87% of inflow)
Center-of-Mass det. time= 39.5 min (740.0 - 700.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	6.29'	2,067 cf	**27.50'W x 105.25'L x 2.54'H Field A** 7,357 cf Overall - 2,188 cf Embedded = 5,168 cf x 40.0% Voids
#2A	6.79'	2,188 cf	**Cultec R-150XLHD** x 80 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 8 rows
		4,255 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	7.10'	**15.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=4.00 cfs @ 10.09 hrs HW=8.69' TW=8.23' (Fixed TW Elev= 8.23')
↑**1=Orifice/Grate** (Orifice Controls 4.00 cfs @ 3.26 fps)

Summary for Subcatchment 1S: A

Runoff = 5.97 cfs @ 10.02 hrs, Volume= 36,520 cf, Depth> 3.88"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 25-Year Rainfall=6.71"

	Area (sf)	CN	Description
	231	98	Paved parking, HSG D
	19,226	80	>75% Grass cover, Good, HSG D
*	93,452	79	Synthetic Turf
	112,909	79	Weighted Average
	112,678	79	99.80% Pervious Area
	231	98	0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 2S: B

Runoff = 5.57 cfs @ 10.02 hrs, Volume= 34,982 cf, Depth> 4.56"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 25-Year Rainfall=6.71"

	Area (sf)	CN	Description
	54,953	98	Paved parking, HSG D
	24,211	80	>75% Grass cover, Good, HSG D
	4,930	98	Roofs, HSG D
*	5,481	1	Pool
*	2,532	80	Decomposed Granite
	92,107	87	Weighted Average
	32,224	67	34.99% Pervious Area
	59,883	98	65.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Reach 3R: Total

Inflow Area = 205,016 sf, 29.32% Impervious, Inflow Depth > 3.97" for 25-Year event
Inflow = 10.92 cfs @ 10.06 hrs, Volume= 67,865 cf
Outflow = 10.92 cfs @ 10.06 hrs, Volume= 67,865 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.10 hrs

Summary for Pond 4P: Cultec Chambers

Inflow Area = 92,107 sf, 65.01% Impervious, Inflow Depth > 4.56" for 25-Year event
Inflow = 5.57 cfs @ 10.02 hrs, Volume= 34,982 cf
Outflow = 5.31 cfs @ 10.09 hrs, Volume= 31,345 cf, Atten= 5%, Lag= 4.3 min
Primary = 5.31 cfs @ 10.09 hrs, Volume= 31,345 cf

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.10 hrs / 3
Peak Elev= 9.04' @ 10.09 hrs Surf.Area= 2,894 sf Storage= 4,255 cf

Plug-Flow detention time= 81.0 min calculated for 31,333 cf (90% of inflow)
Center-of-Mass det. time= 33.8 min (733.5 - 699.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	6.29'	2,067 cf	**27.50'W x 105.25'L x 2.54'H Field A** 7,357 cf Overall - 2,188 cf Embedded = 5,168 cf x 40.0% Voids
#2A	6.79'	2,188 cf	**Cultec R-150XLHD** x 80 Inside #1 Effective Size= 29.8"W x 18.0"H => 2.65 sf x 10.25'L = 27.2 cf Overall Size= 33.0"W x 18.5"H x 11.00'L with 0.75' Overlap Row Length Adjustment= +0.75' x 2.65 sf x 8 rows
		4,255 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	7.10'	**15.0" Vert. Orifice/Grate** C= 0.600

Primary OutFlow Max=5.25 cfs @ 10.09 hrs HW=9.02' TW=8.23' (Fixed TW Elev= 8.23')
↑**1=Orifice/Grate** (Orifice Controls 5.25 cfs @ 4.28 fps)

ATTACHMENT 3

RETENTION CALCULATIONS

CULTEC Stormwater Design Calculator

Date:	February 27, 2020

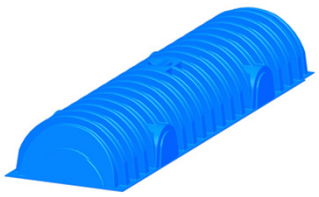
Project Information:

Ortega Park

Calculations Performed By:

RRM Design Group

RECHARGER 150XLHD



Recharger 150XLHD Chamber Specifications		
Height	**18.5**	inches
Width	**33.0**	inches
Length	**11.00**	feet
Installed Length	**10.25**	feet
Bare Chamber Volume	**27.19**	cu. feet
Installed Chamber Volume	**50.18**	cu. feet

Breakdown of Storage Provided by Recharger 150XLHD Stormwater System		
Within Chambers	**2,191.38**	cu. feet
Within Feed Connectors	**3.19**	cu. feet
Within Stone	**2,064.79**	cu. feet
Total Storage Provided	**4,259.4**	**cu. feet**
Total Storage Required	4200.00	cu. feet

Materials List

Recharger 150XLHD		
Total Number of Chambers Required	**80**	**pieces**
Starter Chambers	**8**	pieces
Intermediate Chambers	**64**	pieces
End Chambers	**8**	pieces
HVLV FC-24 Feed Connectors	**7**	pieces
CULTEC No. 410 Non-Woven Geotextile	**898**	sq. yards
CULTEC No. 4800 Woven Geotextile	**28**	feet
Stone	**191**	cu. yards

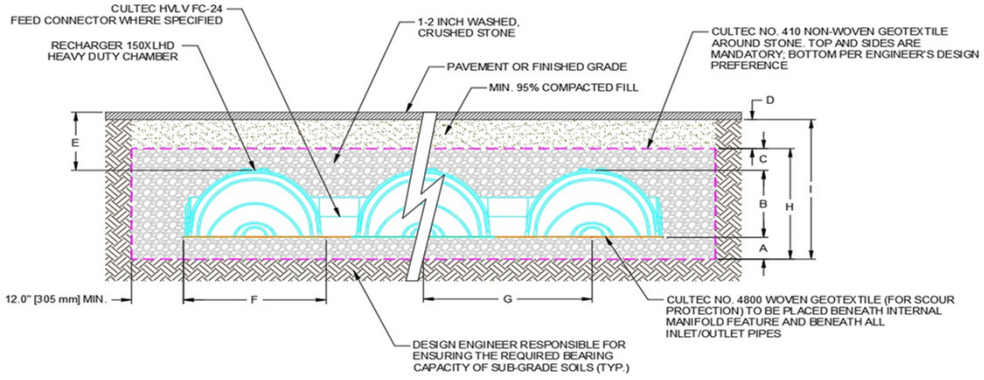
Based on 1 Internal Manifold

Bed Detail



Bed Layout Information		
Number of Rows Wide	**8**	pieces
Number of Chambers Long	**10**	pieces
Chamber Row Width	**25.50**	feet
Chamber Row Length	**103.25**	feet
Bed Width	**27.50**	feet
Bed Length	**105.25**	feet
Bed Area Required	**2894.38**	sq. feet
Length of Separator Row	**N/A**	feet

Bed detail for reference only. Not project specific. Not to scale.



Conceptual graphic only. Not job specific.

Cross Section Table Reference			
A	Depth of Stone Base	**6.0**	inches
B	Chamber Height	**18.5**	inches
C	Depth of Stone Above Units	**6.0**	inches
D	Depth of 95% Compacted Fill	**8.0**	inches
E	Max. Depth Allowed Above the Chamber	**12.00**	feet
F	Chamber Width	**33.0**	inches
G	Center to Center Spacing	**3.25**	feet
H	Effective Depth	**2.54**	feet
I	Bed Depth	**3.21**	feet

CULTEC, Inc.
P.O. Box 280
Brookfield, CT 06804 USA

Phone: 203-775-4416
www.cultec.com
tech@cultec.com

Stage-Area-Storage for Pond 4P: Cultec Chambers

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
6.29	0	7.33	1,828	8.37	3,721
6.31	23	7.35	1,873	8.39	3,744
6.33	46	7.37	1,918	8.41	3,767
6.35	69	7.39	1,962	8.43	3,790
6.37	93	7.41	2,007	8.45	3,814
6.39	116	7.43	2,051	8.47	3,837
6.41	139	7.45	2,095	8.49	3,860
6.43	162	7.47	2,139	8.51	3,883
6.45	185	7.49	2,183	8.53	3,906
6.47	208	7.51	2,227	8.55	3,929
6.49	232	7.53	2,270	8.57	3,953
6.51	255	7.55	2,313	8.59	3,976
6.53	278	7.57	2,356	8.61	3,999
6.55	301	7.59	2,399	8.63	4,022
6.57	324	7.61	2,442	8.65	4,045
6.59	347	7.63	2,484	8.67	4,068
6.61	370	7.65	2,526	8.69	4,091
6.63	394	7.67	2,568	8.71	4,115
6.65	417	7.69	2,609	8.73	4,138
6.67	440	7.71	2,650	8.75	4,161
6.69	463	7.73	2,691	8.77	4,184
6.71	486	7.75	2,732	8.79	4,207
6.73	509	7.77	2,772	8.81	4,230
6.75	533	7.79	2,812	8.83	**4,254**
6.77	556	7.81	2,852		
6.79	579	7.83	2,891		
6.81	627	7.85	2,930		
6.83	674	7.87	2,968		
6.85	722	7.89	3,006		
6.87	769	7.91	3,044		
6.89	816	7.93	3,081		
6.91	863	7.95	3,118		
6.93	910	7.97	3,154		
6.95	956	7.99	3,189		
6.97	1,003	8.01	3,224		
6.99	1,049	8.03	3,259		
7.01	1,096	8.05	3,293		
7.03	1,142	8.07	3,325		
7.05	1,188	8.09	3,357		
7.07	1,234	8.11	3,388		
7.09	1,280	8.13	3,418		
7.11	1,326	8.15	3,447		
7.13	1,372	8.17	3,475		
7.15	1,418	8.19	3,502		
7.17	1,464	8.21	3,528		
7.19	1,510	8.23	3,554		
7.21	1,556	8.25	3,579		
7.23	1,601	8.27	3,604		
7.25	1,647	8.29	3,628		
7.27	1,692	8.31	3,651		
7.29	1,738	8.33	3,675		
7.31	1,783	8.35	3,698		

STORMWATER QUALITY REPORT
ORTEGA PARK PUBLIC IMPROVEMENTS

ORTEGA PARK, SANTA BARBARA, CA

February 27, 2020



PREPARED FOR:
City of Santa Barbara, Parks and Recreation

PREPARED BY:
Michael C. Hamilton, P.E.

rrm design group

10 E. Figueroa Street, Ste. 200
Santa Barbara, CA 93101
(805) 963-8283

Table of Contents

Purpose of Report 2
Location 2
Background 3
Method of Analysis 3
Storm Water Quality 6
Conclusions 6

EXHIBIT 1 ..... EXITING CONDITION HYDROLOGY MAP
EXHIBIT 2 ..... PROPOSED CONDITION HYDROLOGY MAP
EXHIBIT 3 ..... BMP CROSS-SECTION DETAILS

ATTACHMENT 1 ..... HYDROCAD OUTPUT
ATTACHMENT 2 ..... STORM WATER QUALITY CALCULATIONS
ATTACHMENT 3 ..... INFILTRATION TESTING REPORT

PURPOSE OF REPORT

The purpose of this report is to assess the project site and identify storm water quality facilities to meet the requirements of the City of Santa Barbara's Storm Water BMP Guidance Manual. The proposed right-of-way improvements include removal and replacement of existing hardscapes, and construction of new parking stalls and sidewalk.

LOCATION

This project consists of approximately 1,500 lineal feet of public improvements along the Ortega Park frontages of East Ortega Street, North Salsipuedes Street and East Cota Street. See the project vicinity map in Figure 1 below.



Figure 1. Project Vicinity Map

BACKGROUND

The proposed improvements will occur in the public right-of-way on Ortega Street, Salsipuedes Street and Cota Street. Each street currently has a 60-foot right-of-way and a 36-foot curb-to-curb distance. The proposed Cota Street improvements consist of removal and replacement of existing sidewalk, curb and gutter to remediate accessibility and drainage issues due to uplifting from tree roots. The subgrade beneath these improvements will remain undisturbed. Therefore, this portion of the project is exempt from stormwater quality requirements under the maintenance provision of Appendix J of the City's BMP Guidance Manual.

The proposed improvements include the addition of back-in angled parking and new sidewalk on Ortega Street, 90° head-in parking and new sidewalk on Salsipuedes Street, and bulb-outs at the intersection of Salsipuedes and Cota Streets.

Slopes on the majority of the site are approximately 2-4% percent. Ortega Street has a mid-block high point with the northern half draining to an inlet on Quarantina Street and the southern half draining to the south. Runoff from the southern portion of Ortega, along with runoff from Salsipuedes Street, drains to an inlet on Cota Street at the intersection with Salsipuedes Street. The drainage boundary for this analysis will be from the street centerlines on Ortega and Salsipuedes Streets to the back of the proposed right-of-way improvements along the Ortega Park frontage. The drainage boundary is depicted on the Existing Hydrology Map, Exhibit A.

METHOD OF ANALYSIS

The approach to analyze the runoff from the project site follows the City of Santa Barbara's Storm Water BMP Guidance Manual. The analysis is a comparison of the pre-project condition to the post-project condition for both hydrologic analysis and storm water quality.

The proposed project will increase the impervious area at the site from 53.9% to approximately 64.0%. See the Proposed Hydrology Map, Exhibit B and the Drainage Area Summary, Attachment 2. Table 1 provides a summary of the proposed changes in impervious area. This increase in impervious area will cause an increase in the amount of storm water peak runoff from the site, requiring BMP's to be designed to both retain and detain storm water as outlined in the City's BMP Guidance Manual.

Table 1. Changes in Impervious Area

Proposed Area	Definition	Area (SF)
New Impervious	Area where new impervious area (hardscape, roof, etc.) is proposed where there is existing pervious area (landscaping, etc.)	18,949
Replaced Impervious	Area where new impervious area (hardscape, roof, etc.) is proposed where there is currently existing impervious area (hardscape, roof, etc.)	7,971
Removed Impervious	Area where new pervious area (landscaping, etc.) is proposed where there is currently existing pervious area (landscaping, etc.)	4,368

Proposed Drainage Management Areas

The proposed project site has been divided into five drainage management areas (DMAs):

- Runoff from DMA 'A' will flow to permeable pavement for infiltration and treatment. Runoff from proposed sidewalk will flow overland onto permeable pavement while runoff from the existing asphalt will flow into an inlet which will direct runoff to gravel storage beneath the proposed permeable pavements. Overflow will continue to flow along the gutter to the existing curb inlet on Quarantina Street.
- Runoff from DMA 'B' will flow to permeable pavement for infiltration and treatment. Runoff from proposed sidewalk will flow overland onto permeable pavement while runoff from the existing asphalt will flow into an inlet which will direct runoff to gravel storage beneath the proposed permeable pavements. Overflow will continue to flow along the gutter to the existing inlet on Cota Street.
- Runoff from DMA 'C will flow from the proposed curb and gutter into bioretention areas for treatment. Overflow from the bioretention areas will continue to flow into proposed curb inlets.
- Runoff from DMA 'D' will flow from the proposed curb and gutter into bioretention areas for treatment. Overflow from the bioretention areas will continue to flow into proposed curb inlets.
- Runoff from DMA 'E' will flow in the curb and gutter on Cota into the curb inlet at the north corner of the Cota and Salsipuedes Streets intersection without treatment. This DMA totals 66 SF, or 0.1% of the total project area.

Infiltration Testing

Infiltration testing for the site was performed in February of 2019 by Earth Systems Pacific. Four infiltration borings were hand-excavated throughout the site to depths varying from 2.5 to 3.5 feet. Two of the four test borings were not tested for infiltration rates due to encountered shallow groundwater. The remaining two borings yielded infiltration rates of 0.6 and 1.4 inches per hour. See Infiltration Testing Report, Attachment 3.

PEAK RUNOFF DISCHARGE RATE

The post-project peak flow of runoff is reduced to below that of the pre-project for the 2-year through 25-year storm events through the use of permeable pavement. The program HydroCAD was used to determine the volume of runoff and the peak flow of runoff from the project site for various storm events for both pre- and post-project conditions, see HydroCAD output in Attachment 1. The results are summarized in Table 2.

Table 2. Peak Flow Summary

Storm Event	Peak Flows (CFS)	
	Existing	Proposed
2-year	1.09	1.09
5-year	1.74	1.71
10-year	2.18	2.14
25-year	2.73	2.68

VOLUME REDUCTION

Per the City's BMP Guidance Manual, the project is required to retain on-site the volume difference between pre- and post-development conditions for the 25-year storm or the one-inch storm, whichever is larger. For this project the one-inch storm event volume difference of 1,612 ft^3 is larger as seen in Table 3 below. Retention is provided by the proposed permeable pavement, see Table 4. Calculations are provided in Attachment 2. Exhibit 3 provides BMP Cross-Section Details.

Table 3. Runoff Volume Summary

Storm Event	Runoff Volume (CF) *(Before Retention)*	
	Existing	Proposed
1-inch	1,443	1,612
2-year	6,881	6,942
5-year	10,823	10,770
10-year	13,531	13,405
25-year	16,917	16,716

Table 4. Volume Retention Summary

Retention BMP	Depth of Gravel Storage (in)	Area of Storage (SF)	Provided Retention Volume (CF)
Permeable Pavement	12	11,002	3,961
Total			**3,961**

STORM WATER QUALITY

The City of Santa Barbara Storm Water BMP Guidance Manual was used to design storm water quality features throughout the site to treat the one-inch 24-hour storm. See calculations in Attachment 2 and a summary in Table 1. Bioretention areas are proposed in the landscape planters for treatment. See Exhibit 3 for BMP Cross-Section Details.

Table 1. Storm Water Quality Summary

DMA	Treatment BMP	Water Quality Design Volume (CF)	Required Treatment Area (SF)	Provided Treatment Area (SF)	Provided Treatment Volume (CF)
A	Permeable Pavement	396	1,100	3,377	1,216
B	Permeable Pavement	1,138	3,161	7,625	2,745
C	Bioretention	33	31	31	33
D	Bioretention	41	38	38	41
E	Untreated	4	-	-	-

CONCLUSIONS

Based on the findings of this report, the proposed drainage design for this project meets the applicable standards and requirements for the City of Santa Barbara. The proposed drainage plan is consistent with the City's Storm Water Management Program (SWMP) design criteria for development. In summary, the proposed design:

- Reduces the post-development peak flow of runoff to below the pre-development rate for the 2- through 25-year storm events
- Reduces the post-development volume of runoff to below the pre-development rate for the 2- through 25-year storm events
- Treats the runoff from the site for the 1-inch 24-hour storm event.

EXHIBITS

EXHIBIT 1

EXISTING CONDITION HYDROLOGY MAP

QUARANTINA STREET

EXISTING CURB INLET

ORTEGA STREET

COTA STREET

SALSIPUEDES STREET

STOP

A

B

C

D

EXISTING CURB INLET

LEGEND

DRAINAGE AREA BOUNDARY

SURFACE FLOW DIRECTION

DRAINAGE AREA NAME

HATCH LEGEND

DESIGNATION	FACILITY	AREA (SF)
	EXISTING IMPERVIOUS	22,663 (53.9%)
	LANDSCAPE	19,368
	TOTAL AREA	42,031

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ORTEGA PARK
PUBLIC IMPROVEMENTS

EXISTING DRAINAGE AREA MAP

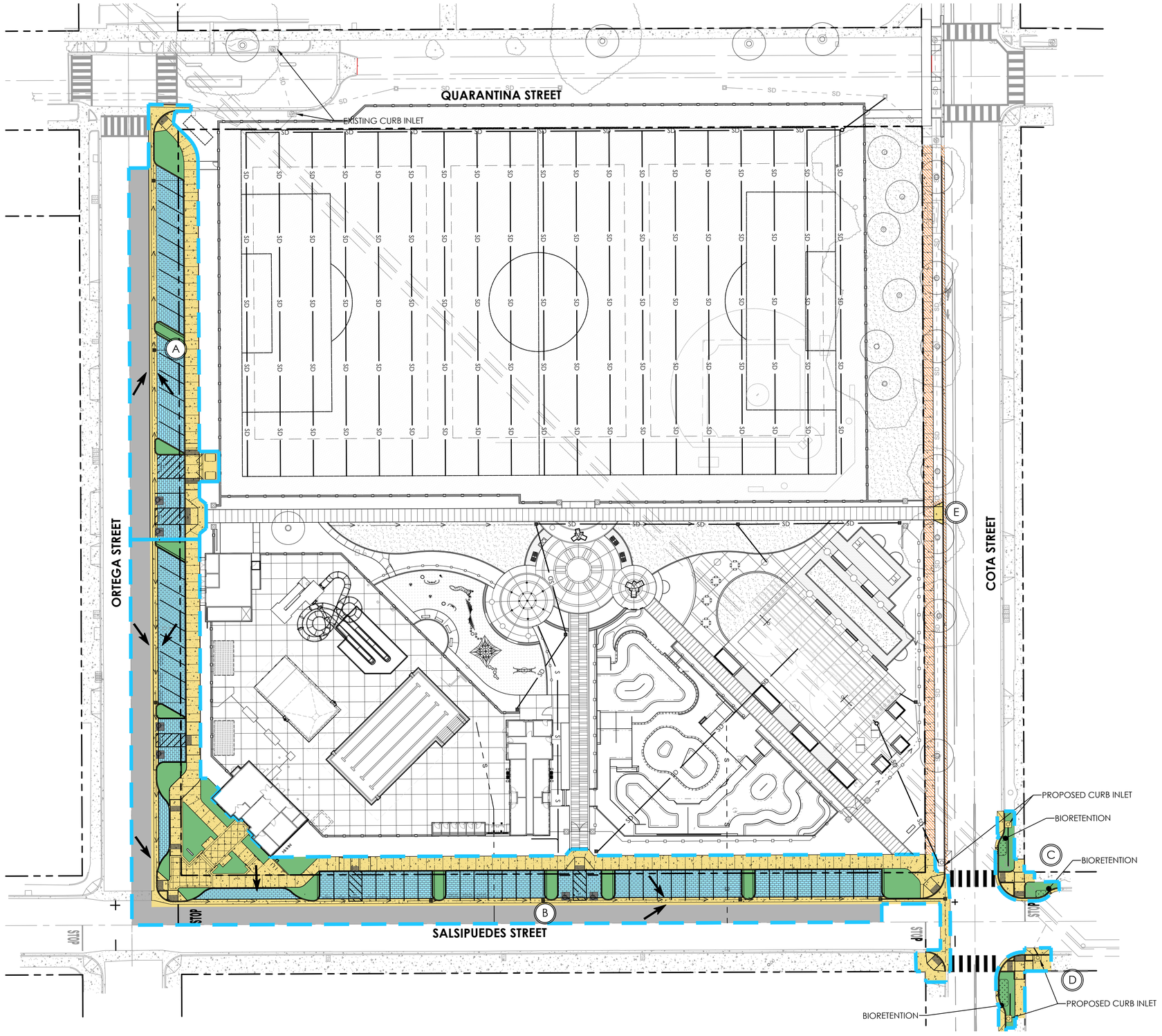
FEBRUARY 25, 2020

SCALE: 1"=30'

rrm design group

EXHIBIT 2

PROPOSED CONDITION HYDROLOGY MAP



LEGEND

- DRAINAGE AREA BOUNDARY
- SURFACE FLOW DIRECTION
- (A) DRAINAGE AREA NAME

HATCH LEGEND

DESIGNATION	FACILITY	AREA (SF)
	NEW/REPLACED IMPERVIOUS AREA	16,544
	EXISTING IMPERVIOUS	10,376
	LANDSCAPE	4,109
	PERMEABLE PAVEMENT	11,002
	BIORETENTION	
	PAVEMENT MAINTENANCE AREA	
	TOTAL IMPERVIOUS	**26,920 (64.0%)**

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ORTEGA PARK PUBLIC IMPROVEMENTS

PROPOSED DRAINAGE AREA MAP

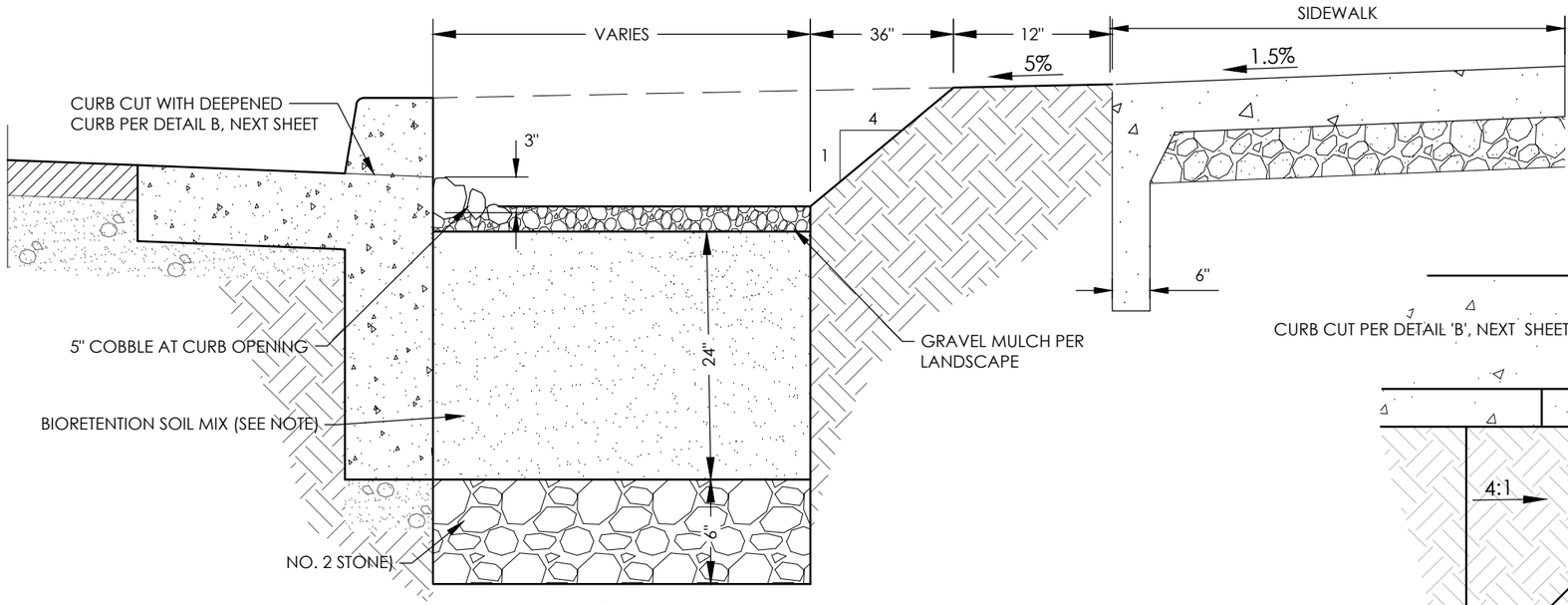
FEBRUARY 26, 2020
SCALE: 1"=30'

rrm design group

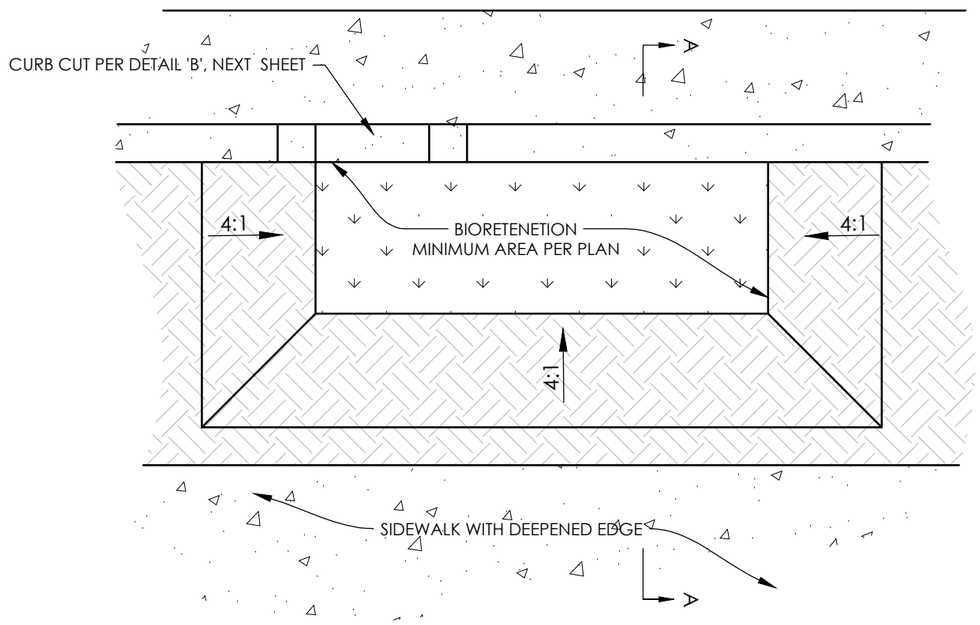
EXHIBIT 3

BMP CROSS-SECTION DETAILS

ATTACHMENTS



SECTION A-A

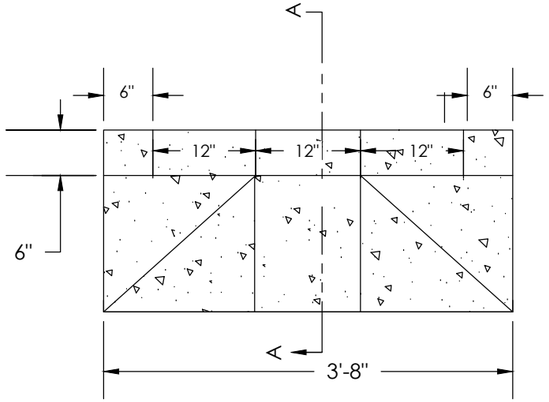


PLAN

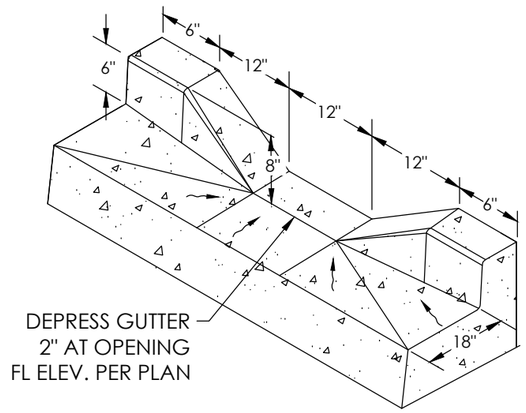
NOTES:

1. OVER-EXCAVATE 1.0' BELOW INFILTRATION BOTTOM AND REPLACED UNIFORMLY WITHOUT COMPACTION.
2. ALL STONE MATERIAL SHALL BE WASHED, OPEN-GRADED (NO SAND), CRUSHED (ANGULAR) AGGREGATE.
3. BIORETENTION SOIL MIX SHALL BE 60 TO 70% SAND, 15 TO 25% COMPOST, AND 10 TO 20% CLEAN TOPSOIL. THE ORGANIC CONTENT SHALL BE 8 TO12% AND PH RANGE SHALL BE 5.5 TO 7.5.
4. EXTEND DEEPENED CURB AND SIDEWALK EDGE 5' BEYOND BOTH SIDES OF BIORETENTION AREA.

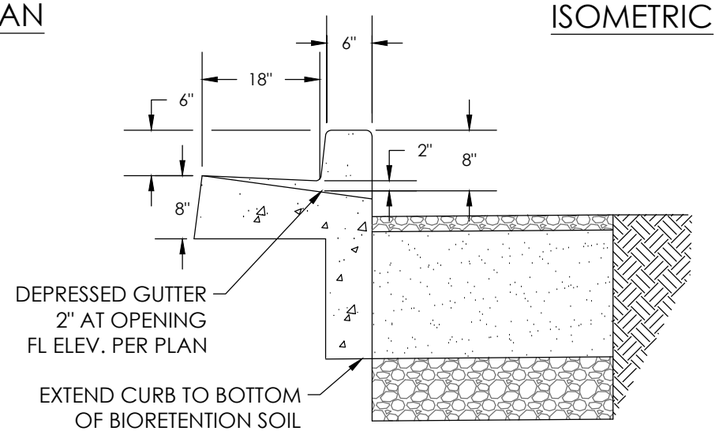
B PARKWAY BIORETENTION
SCALE: N.T.S.



PLAN



ISOMETRIC

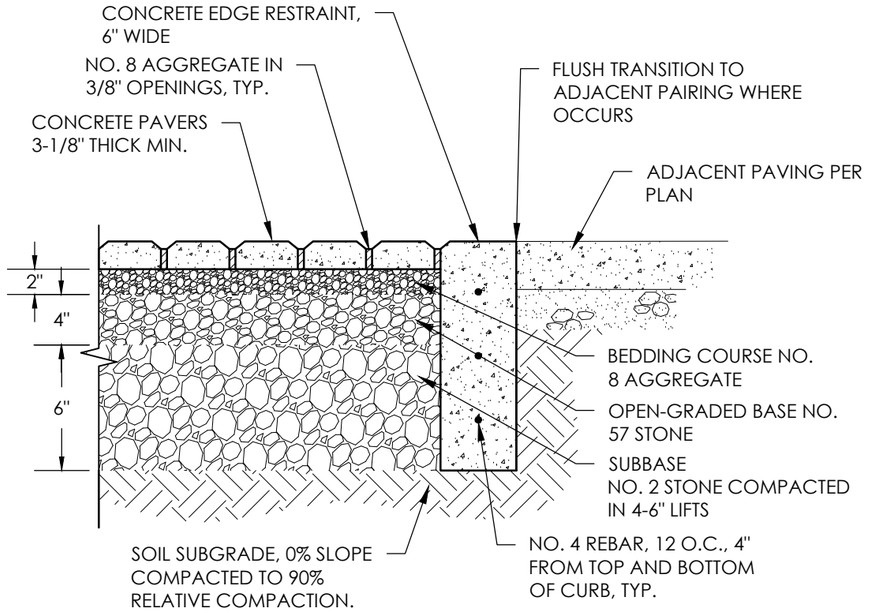


SECTION A-A

ADJACENT TO BIORETENTION

B CURB CUT

SCALE: N.T.S.



NOTES:

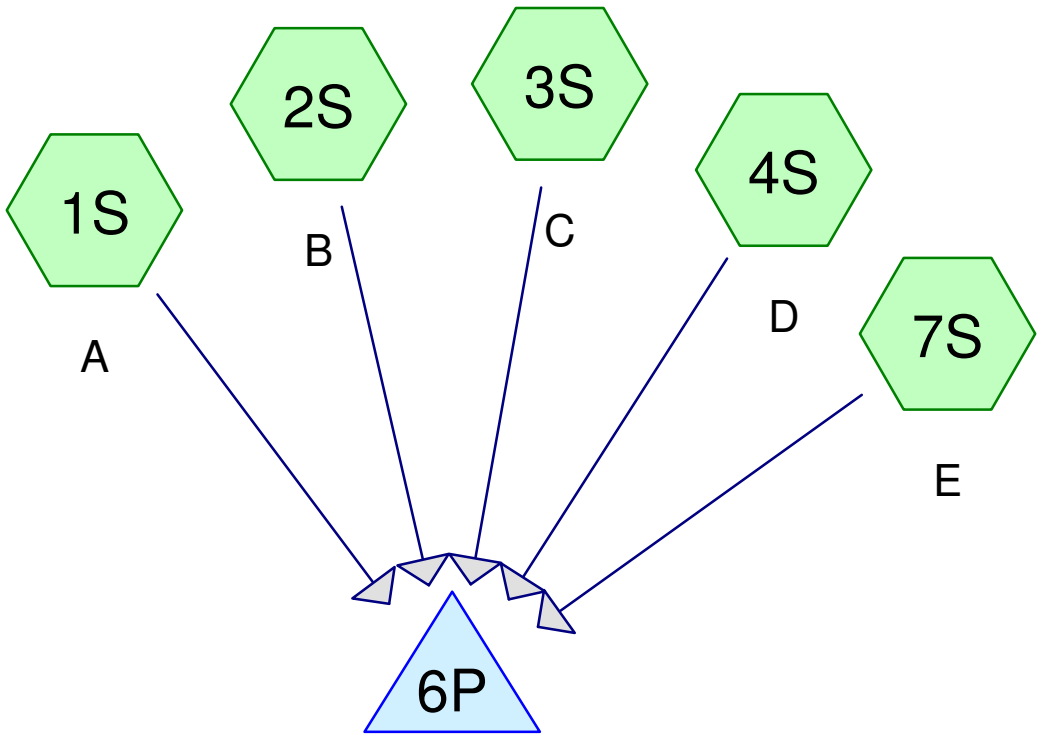
1. ALL AGGREGATE BASE MATERIAL SHALL BE WASHED, OPEN-GRADED (NO SAND), CRUSHED (ANGULAR) AGGREGATE.

C PERMEABLE PAVEMENT

SCALE: N.T.S.

ATTACHMENT 1

HYDROCAD OUTPUT



Total

Subcat Reach Pond Link

Routing Diagram for Existing
Prepared by RRM Design Group, Printed 2/27/2020
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Summary for Subcatchment 1S: A

Runoff = 0.05 cfs @ 10.02 hrs, Volume= 324 cf, Depth> 0.36"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 1-inch Rainfall=1.00"

	Area (sf)	CN	Description
	4,964	98	Paved parking, HSG D
*	5,700	80	>75% Grass cover, Good, HSG D
	10,664	88	Weighted Average
	5,700	80	53.45% Pervious Area
	4,964	98	46.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 2S: B

Runoff = 0.16 cfs @ 10.02 hrs, Volume= 1,022 cf, Depth> 0.42"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 1-inch Rainfall=1.00"

Area (sf)	CN	Description
16,093	98	Paved parking, HSG D
13,348	80	>75% Grass cover, Good, HSG D
29,441	90	Weighted Average
13,348	80	45.34% Pervious Area
16,093	98	54.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 3S: C

Runoff = 0.01 cfs @ 10.02 hrs, Volume= 44 cf, Depth> 0.56"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 1-inch Rainfall=1.00"

Area (sf)	CN	Description
723	98	Paved parking, HSG D
216	80	>75% Grass cover, Good, HSG D
939	94	Weighted Average
216	80	23.00% Pervious Area
723	98	77.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 4S: D

Runoff = 0.01 cfs @ 10.02 hrs, Volume= 53 cf, Depth> 0.69"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 1-inch Rainfall=1.00"

Area (sf)	CN	Description
888	98	Paved parking, HSG D
33	80	>75% Grass cover, Good, HSG D
921	97	Weighted Average
33	80	3.58% Pervious Area
888	98	96.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 7S: E

Runoff = 0.00 cfs @ 12.69 hrs, Volume= 0 cf, Depth> 0.06"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 1-inch Rainfall=1.00"

Area (sf)	CN	Description
66	80	>75% Grass cover, Good, HSG D
66	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Pond 6P: Total

Inflow Area = 42,031 sf, 53.93% Impervious, Inflow Depth > 0.41" for 1-inch event
Inflow = 0.22 cfs @ 10.02 hrs, Volume= 1,443 cf
Primary = 0.22 cfs @ 10.02 hrs, Volume= 1,443 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.10 hrs

Summary for Subcatchment 1S: A

Runoff = 0.26 cfs @ 10.02 hrs, Volume= 1,656 cf, Depth> 1.86"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 2-year Rainfall=3.20"

	Area (sf)	CN	Description
	4,964	98	Paved parking, HSG D
*	5,700	80	>75% Grass cover, Good, HSG D
	10,664	88	Weighted Average
	5,700	80	53.45% Pervious Area
	4,964	98	46.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 2S: B

Runoff = 0.77 cfs @ 10.02 hrs, Volume= 4,844 cf, Depth> 1.97"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 2-year Rainfall=3.20"

Area (sf)	CN	Description
16,093	98	Paved parking, HSG D
13,348	80	>75% Grass cover, Good, HSG D
29,441	90	Weighted Average
13,348	80	45.34% Pervious Area
16,093	98	54.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 3S: C

Runoff = 0.03 cfs @ 10.02 hrs, Volume= 178 cf, Depth> 2.28"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 2-year Rainfall=3.20"

Area (sf)	CN	Description
723	98	Paved parking, HSG D
216	80	>75% Grass cover, Good, HSG D
939	94	Weighted Average
216	80	23.00% Pervious Area
723	98	77.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 4S: D

Runoff = 0.03 cfs @ 10.02 hrs, Volume= 195 cf, Depth> 2.55"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 2-year Rainfall=3.20"

Area (sf)	CN	Description
888	98	Paved parking, HSG D
33	80	>75% Grass cover, Good, HSG D
921	97	Weighted Average
33	80	3.58% Pervious Area
888	98	96.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 7S: E

Runoff = 0.00 cfs @ 10.03 hrs, Volume= 7 cf, Depth> 1.23"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 2-year Rainfall=3.20"

Area (sf)	CN	Description
66	80	>75% Grass cover, Good, HSG D
66	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Pond 6P: Total

Inflow Area = 42,031 sf, 53.93% Impervious, Inflow Depth > 1.96" for 2-year event
Inflow = 1.09 cfs @ 10.02 hrs, Volume= 6,881 cf
Primary = 1.09 cfs @ 10.02 hrs, Volume= 6,881 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.10 hrs

Summary for Subcatchment 1S: A

Runoff = 0.43 cfs @ 10.02 hrs, Volume= 2,647 cf, Depth> 2.98"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 5-Year Rainfall=4.61"

	Area (sf)	CN	Description
	4,964	98	Paved parking, HSG D
*	5,700	80	>75% Grass cover, Good, HSG D
	10,664	88	Weighted Average
	5,700	80	53.45% Pervious Area
	4,964	98	46.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 2S: B

Runoff = 1.22 cfs @ 10.02 hrs, Volume= 7,608 cf, Depth> 3.10"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 5-Year Rainfall=4.61"

Area (sf)	CN	Description
16,093	98	Paved parking, HSG D
13,348	80	>75% Grass cover, Good, HSG D
29,441	90	Weighted Average
13,348	80	45.34% Pervious Area
16,093	98	54.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 3S: C

Runoff = 0.04 cfs @ 10.02 hrs, Volume= 269 cf, Depth> 3.44"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 5-Year Rainfall=4.61"

Area (sf)	CN	Description
723	98	Paved parking, HSG D
216	80	>75% Grass cover, Good, HSG D
939	94	Weighted Average
216	80	23.00% Pervious Area
723	98	77.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 4S: D

Runoff = 0.05 cfs @ 10.02 hrs, Volume= 287 cf, Depth> 3.73"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 5-Year Rainfall=4.61"

Area (sf)	CN	Description
888	98	Paved parking, HSG D
33	80	>75% Grass cover, Good, HSG D
921	97	Weighted Average
33	80	3.58% Pervious Area
888	98	96.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 7S: E

Runoff = 0.00 cfs @ 10.03 hrs, Volume= 12 cf, Depth> 2.27"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 5-Year Rainfall=4.61"

Area (sf)	CN	Description
66	80	>75% Grass cover, Good, HSG D
66	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Pond 6P: Total

Inflow Area = 42,031 sf, 53.93% Impervious, Inflow Depth > 3.09" for 5-Year event
Inflow = 1.74 cfs @ 10.02 hrs, Volume= 10,823 cf
Primary = 1.74 cfs @ 10.02 hrs, Volume= 10,823 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.10 hrs

Summary for Subcatchment 1S: A

Runoff = 0.54 cfs @ 10.02 hrs, Volume= 3,331 cf, Depth> 3.75"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 10-Year Rainfall=5.55"

	Area (sf)	CN	Description
	4,964	98	Paved parking, HSG D
*	5,700	80	>75% Grass cover, Good, HSG D
	10,664	88	Weighted Average
	5,700	80	53.45% Pervious Area
	4,964	98	46.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 2S: B

Runoff = 1.53 cfs @ 10.02 hrs, Volume= 9,506 cf, Depth> 3.87"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 10-Year Rainfall=5.55"

Area (sf)	CN	Description
16,093	98	Paved parking, HSG D
13,348	80	>75% Grass cover, Good, HSG D
29,441	90	Weighted Average
13,348	80	45.34% Pervious Area
16,093	98	54.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 3S: C

Runoff = 0.05 cfs @ 10.02 hrs, Volume= 330 cf, Depth> 4.22"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 10-Year Rainfall=5.55"

Area (sf)	CN	Description
723	98	Paved parking, HSG D
216	80	>75% Grass cover, Good, HSG D
939	94	Weighted Average
216	80	23.00% Pervious Area
723	98	77.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 4S: D

Runoff = 0.06 cfs @ 10.02 hrs, Volume= 347 cf, Depth> 4.52"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 10-Year Rainfall=5.55"

Area (sf)	CN	Description
888	98	Paved parking, HSG D
33	80	>75% Grass cover, Good, HSG D
921	97	Weighted Average
33	80	3.58% Pervious Area
888	98	96.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 7S: E

Runoff = 0.00 cfs @ 10.03 hrs, Volume= 17 cf, Depth> 3.02"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 10-Year Rainfall=5.55"

Area (sf)	CN	Description
66	80	>75% Grass cover, Good, HSG D
66	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Pond 6P: Total

Inflow Area = 42,031 sf, 53.93% Impervious, Inflow Depth > 3.86" for 10-Year event
Inflow = 2.18 cfs @ 10.02 hrs, Volume= 13,531 cf
Primary = 2.18 cfs @ 10.02 hrs, Volume= 13,531 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.10 hrs

Summary for Subcatchment 1S: A

Runoff = 0.68 cfs @ 10.02 hrs, Volume= 4,189 cf, Depth> 4.71"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 25-Year Rainfall=6.71"

	Area (sf)	CN	Description
	4,964	98	Paved parking, HSG D
*	5,700	80	>75% Grass cover, Good, HSG D
	10,664	88	Weighted Average
	5,700	80	53.45% Pervious Area
	4,964	98	46.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 2S: B

Runoff = 1.92 cfs @ 10.02 hrs, Volume= 11,878 cf, Depth> 4.84"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 25-Year Rainfall=6.71"

Area (sf)	CN	Description
16,093	98	Paved parking, HSG D
13,348	80	>75% Grass cover, Good, HSG D
29,441	90	Weighted Average
13,348	80	45.34% Pervious Area
16,093	98	54.66% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 3S: C

Runoff = 0.07 cfs @ 10.02 hrs, Volume= 406 cf, Depth> 5.19"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 25-Year Rainfall=6.71"

Area (sf)	CN	Description
723	98	Paved parking, HSG D
216	80	>75% Grass cover, Good, HSG D
939	94	Weighted Average
216	80	23.00% Pervious Area
723	98	77.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 4S: D

Runoff = 0.07 cfs @ 10.02 hrs, Volume= 422 cf, Depth> 5.50"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 25-Year Rainfall=6.71"

Area (sf)	CN	Description
888	98	Paved parking, HSG D
33	80	>75% Grass cover, Good, HSG D
921	97	Weighted Average
33	80	3.58% Pervious Area
888	98	96.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 7S: E

Runoff = 0.00 cfs @ 10.02 hrs, Volume= 22 cf, Depth> 3.98"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 25-Year Rainfall=6.71"

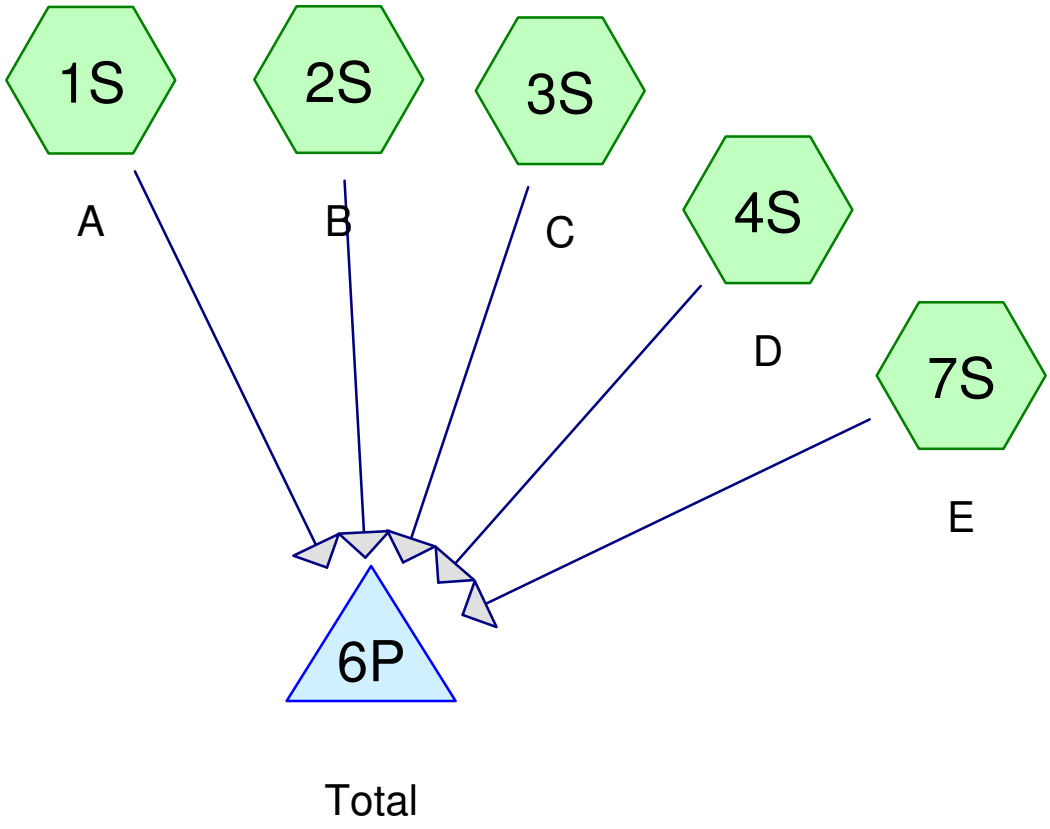
Area (sf)	CN	Description
66	80	>75% Grass cover, Good, HSG D
66	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Pond 6P: Total

Inflow Area = 42,031 sf, 53.93% Impervious, Inflow Depth > 4.83" for 25-Year event
Inflow = 2.73 cfs @ 10.02 hrs, Volume= 16,917 cf
Primary = 2.73 cfs @ 10.02 hrs, Volume= 16,917 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.10 hrs



Subcat Reach Pond Link

Routing Diagram for Proposed
Prepared by RRM Design Group, Printed 2/27/2020
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Summary for Subcatchment 1S: A

Runoff = 0.06 cfs @ 10.02 hrs, Volume= 396 cf, Depth> 0.45"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 1-inch Rainfall=1.00"

	Area (sf)	CN	Description
	6,639	98	Paved parking, HSG D
	648	80	>75% Grass cover, Good, HSG D
*	3,377	72	Permeable Pavement
	10,664	89	Weighted Average
	4,025	73	37.74% Pervious Area
	6,639	98	62.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 2S: B

Runoff = 0.19 cfs @ 10.02 hrs, Volume= 1,138 cf, Depth> 0.46"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 1-inch Rainfall=1.00"

	Area (sf)	CN	Description
	19,028	98	Paved parking, HSG D
	2,788	80	>75% Grass cover, Good, HSG D
*	7,625	72	Permeable Pavement
	29,441	90	Weighted Average
	10,413	74	35.37% Pervious Area
	19,028	98	64.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 3S: C

Runoff = 0.01 cfs @ 10.02 hrs, Volume= 33 cf, Depth> 0.42"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 1-inch Rainfall=1.00"

Area (sf)	CN	Description
517	98	Paved parking, HSG D
422	80	>75% Grass cover, Good, HSG D
939	90	Weighted Average
422	80	44.94% Pervious Area
517	98	55.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 4S: D

Runoff = 0.01 cfs @ 10.02 hrs, Volume= 41 cf, Depth> 0.53"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 1-inch Rainfall=1.00"

Area (sf)	CN	Description
670	98	Paved parking, HSG D
251	80	>75% Grass cover, Good, HSG D
921	93	Weighted Average
251	80	27.25% Pervious Area
670	98	72.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 7S: E

Runoff = 0.00 cfs @ 10.02 hrs, Volume= 4 cf, Depth> 0.71"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 1-inch Rainfall=1.00"

Area (sf)	CN	Description
66	98	Paved parking, HSG D
66	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 1S: A

Runoff = 0.27 cfs @ 10.02 hrs, Volume= 1,717 cf, Depth> 1.93"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 2-year Rainfall=3.20"

	Area (sf)	CN	Description
	6,639	98	Paved parking, HSG D
	648	80	>75% Grass cover, Good, HSG D
*	3,377	72	Permeable Pavement
	10,664	89	Weighted Average
	4,025	73	37.74% Pervious Area
	6,639	98	62.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 2S: B

Runoff = 0.77 cfs @ 10.02 hrs, Volume= 4,885 cf, Depth> 1.99"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 2-year Rainfall=3.20"

	Area (sf)	CN	Description
	19,028	98	Paved parking, HSG D
	2,788	80	>75% Grass cover, Good, HSG D
*	7,625	72	Permeable Pavement
	29,441	90	Weighted Average
	10,413	74	35.37% Pervious Area
	19,028	98	64.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 3S: C

Runoff = 0.02 cfs @ 10.02 hrs, Volume= 155 cf, Depth> 1.98"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 2-year Rainfall=3.20"

Area (sf)	CN	Description
517	98	Paved parking, HSG D
422	80	>75% Grass cover, Good, HSG D
939	90	Weighted Average
422	80	44.94% Pervious Area
517	98	55.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 4S: D

Runoff = 0.03 cfs @ 10.02 hrs, Volume= 171 cf, Depth> 2.22"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 2-year Rainfall=3.20"

Area (sf)	CN	Description
670	98	Paved parking, HSG D
251	80	>75% Grass cover, Good, HSG D
921	93	Weighted Average
251	80	27.25% Pervious Area
670	98	72.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 7S: E

Runoff = 0.00 cfs @ 10.02 hrs, Volume= 14 cf, Depth> 2.59"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 2-year Rainfall=3.20"

Area (sf)	CN	Description
66	98	Paved parking, HSG D
66	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Pond 6P: Total

Inflow Area = 42,031 sf, 64.05% Impervious, Inflow Depth > 1.98" for 2-year event
Inflow = 1.09 cfs @ 10.02 hrs, Volume= 6,942 cf
Primary = 1.09 cfs @ 10.02 hrs, Volume= 6,942 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.10 hrs

Summary for Subcatchment 1S: A

Runoff = 0.42 cfs @ 10.02 hrs, Volume= 2,676 cf, Depth> 3.01"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 5-Year Rainfall=4.61"

	Area (sf)	CN	Description
	6,639	98	Paved parking, HSG D
	648	80	>75% Grass cover, Good, HSG D
*	3,377	72	Permeable Pavement
	10,664	89	Weighted Average
	4,025	73	37.74% Pervious Area
	6,639	98	62.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 2S: B

Runoff = 1.21 cfs @ 10.02 hrs, Volume= 7,571 cf, Depth> 3.09"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 5-Year Rainfall=4.61"

	Area (sf)	CN	Description
	19,028	98	Paved parking, HSG D
	2,788	80	>75% Grass cover, Good, HSG D
*	7,625	72	Permeable Pavement
	29,441	90	Weighted Average
	10,413	74	35.37% Pervious Area
	19,028	98	64.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 3S: C

Runoff = 0.04 cfs @ 10.02 hrs, Volume= 243 cf, Depth> 3.11"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 5-Year Rainfall=4.61"

Area (sf)	CN	Description
517	98	Paved parking, HSG D
422	80	>75% Grass cover, Good, HSG D
939	90	Weighted Average
422	80	44.94% Pervious Area
517	98	55.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 4S: D

Runoff = 0.04 cfs @ 10.02 hrs, Volume= 259 cf, Depth> 3.38"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 5-Year Rainfall=4.61"

Area (sf)	CN	Description
670	98	Paved parking, HSG D
251	80	>75% Grass cover, Good, HSG D
921	93	Weighted Average
251	80	27.25% Pervious Area
670	98	72.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 7S: E

Runoff = 0.00 cfs @ 10.02 hrs, Volume= 21 cf, Depth> 3.79"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 5-Year Rainfall=4.61"

Area (sf)	CN	Description
66	98	Paved parking, HSG D
66	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Pond 6P: Total

Inflow Area = 42,031 sf, 64.05% Impervious, Inflow Depth > 3.07" for 5-Year event
Inflow = 1.71 cfs @ 10.02 hrs, Volume= 10,770 cf
Primary = 1.71 cfs @ 10.02 hrs, Volume= 10,770 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.10 hrs

Summary for Subcatchment 1S: A

Runoff = 0.53 cfs @ 10.02 hrs, Volume= 3,339 cf, Depth> 3.76"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 10-Year Rainfall=5.55"

	Area (sf)	CN	Description
	6,639	98	Paved parking, HSG D
	648	80	>75% Grass cover, Good, HSG D
*	3,377	72	Permeable Pavement
	10,664	89	Weighted Average
	4,025	73	37.74% Pervious Area
	6,639	98	62.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 2S: B

Runoff = 1.51 cfs @ 10.02 hrs, Volume= 9,419 cf, Depth> 3.84"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 10-Year Rainfall=5.55"

	Area (sf)	CN	Description
	19,028	98	Paved parking, HSG D
	2,788	80	>75% Grass cover, Good, HSG D
*	7,625	72	Permeable Pavement
	29,441	90	Weighted Average
	10,413	74	35.37% Pervious Area
	19,028	98	64.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 3S: C

Runoff = 0.05 cfs @ 10.02 hrs, Volume= 304 cf, Depth> 3.88"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 10-Year Rainfall=5.55"

Area (sf)	CN	Description
517	98	Paved parking, HSG D
422	80	>75% Grass cover, Good, HSG D
939	90	Weighted Average
422	80	44.94% Pervious Area
517	98	55.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 4S: D

Runoff = 0.05 cfs @ 10.02 hrs, Volume= 319 cf, Depth> 4.16"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 10-Year Rainfall=5.55"

Area (sf)	CN	Description
670	98	Paved parking, HSG D
251	80	>75% Grass cover, Good, HSG D
921	93	Weighted Average
251	80	27.25% Pervious Area
670	98	72.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 7S: E

Runoff = 0.00 cfs @ 10.02 hrs, Volume= 25 cf, Depth> 4.58"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 10-Year Rainfall=5.55"

Area (sf)	CN	Description
66	98	Paved parking, HSG D
66	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Pond 6P: Total

Inflow Area = 42,031 sf, 64.05% Impervious, Inflow Depth > 3.83" for 10-Year event
Inflow = 2.14 cfs @ 10.02 hrs, Volume= 13,405 cf
Primary = 2.14 cfs @ 10.02 hrs, Volume= 13,405 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.10 hrs

Summary for Subcatchment 1S: A

Runoff = 0.67 cfs @ 10.02 hrs, Volume= 4,173 cf, Depth> 4.70"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 25-Year Rainfall=6.71"

	Area (sf)	CN	Description
	6,639	98	Paved parking, HSG D
	648	80	>75% Grass cover, Good, HSG D
*	3,377	72	Permeable Pavement
	10,664	89	Weighted Average
	4,025	73	37.74% Pervious Area
	6,639	98	62.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 2S: B

Runoff = 1.88 cfs @ 10.02 hrs, Volume= 11,739 cf, Depth> 4.78"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 25-Year Rainfall=6.71"

	Area (sf)	CN	Description
	19,028	98	Paved parking, HSG D
	2,788	80	>75% Grass cover, Good, HSG D
*	7,625	72	Permeable Pavement
	29,441	90	Weighted Average
	10,413	74	35.37% Pervious Area
	19,028	98	64.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 3S: C

Runoff = 0.06 cfs @ 10.02 hrs, Volume= 379 cf, Depth> 4.85"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 25-Year Rainfall=6.71"

Area (sf)	CN	Description
517	98	Paved parking, HSG D
422	80	>75% Grass cover, Good, HSG D
939	90	Weighted Average
422	80	44.94% Pervious Area
517	98	55.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 4S: D

Runoff = 0.06 cfs @ 10.02 hrs, Volume= 393 cf, Depth> 5.13"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 25-Year Rainfall=6.71"

Area (sf)	CN	Description
670	98	Paved parking, HSG D
251	80	>75% Grass cover, Good, HSG D
921	93	Weighted Average
251	80	27.25% Pervious Area
670	98	72.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Subcatchment 7S: E

Runoff = 0.00 cfs @ 10.02 hrs, Volume= 31 cf, Depth> 5.56"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 5.00-20.00 hrs, dt= 0.10 hrs
Type I 24-hr 25-Year Rainfall=6.71"

Area (sf)	CN	Description
66	98	Paved parking, HSG D
66	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	120	0.0120	1.16		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.20"
1.7	120	Total, Increased to minimum Tc = 12.0 min			

Summary for Pond 6P: Total

Inflow Area = 42,031 sf, 64.05% Impervious, Inflow Depth > 4.77" for 25-Year event
Inflow = 2.68 cfs @ 10.02 hrs, Volume= 16,716 cf
Primary = 2.68 cfs @ 10.02 hrs, Volume= 16,716 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.10 hrs

ATTACHMENT 2

STORM WATER QUALITY CALCULATIONS

DRAINAGE AREA SUMMARY

ORTEGA PARK PUBLIC IMPROVEMENTS

PROPOSED CONDITION

DMA	Total Area (SF)	Hardscape (SF)	Existing Pavement (SF)	Permeable Pavement (SF)	Landscape (SF)	Total Impervious (SF)	Total Pervious (SF)	Percent Impervious	1" 24-Hour Runoff Volume (CF)	Provided BMP Area (SF)	Required BMP Area (SF)	Provided Treatment Volume (CF)
A	10,664	3,936	2,703	3,377	648	6,639	4,025	62.3%	396	3,377	1,769	1,216
B	29,441	11,355	7,673	7,625	2,788	19,028	10,413	64.6%	1138	7,625	5,492	2,745
C	939	517	0	0	422	517	422	55.1%	33	65	63	70
D	921	670	0	0	251	670	251	72.7%	41	82	81	89
E	66	66	0	0	0	66	0	100.0%	4	-	-	-
Total	**42,031**	**16,544**	**10,376**	**11,002**	**4,109**	**26,920**	**15,111**	**64.0%**	**1,612**	**11,149**	**7,406**	**4,119**

Project Statistics

New Impervious Area	18,949
Replaced Impervious Area	7,971
New Pervious Area	4368

EXISTING CONDITION

DMA	Total Area (SF)	Hardscape (SF)	Landscape (SF)	Percent Impervious
A	10,664	4,964	5,700	46.5%
B	29,441	16,096	13,345	54.7%
C	939	723	216	77.0%
D	921	888	33	96.4%
E	66	0	66	0.0%
Total	**42,031**	**22,671**	**19,360**	**53.9%**

Permeable Pavement Worksheet Area A

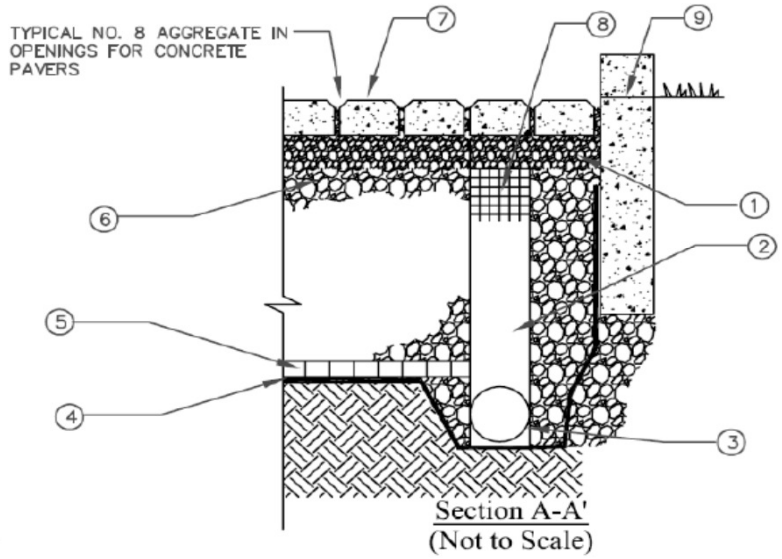


Figure D-6: Permeable Pavement cross-section

Refer to Figures D-6 and Figure 6-16 for a diagrammatic description of the geometric variables.

Step 1: Determine design volume reduction, $V_{reduction}$			
1-1. Enter the volume difference between the pre- and post-development conditions for the 25-yr, 24-hr design storm, V_{25}, calculated using SBUH method, Appendix C	V_{25}=	637	ft^3
1-2. Enter the volume generated from a one-inch, 24-hr storm event, $V_{one\text{-}inch}$, calculated using SBUH method, Appendix C	$V_{one\text{-}inch}$=	396	ft^3
1-3. Determine design volume reduction which is the larger of V_{25} and $V_{one\text{-}inch}$ and is the volume to be retained on-site	$V_{reduction}$=	637	ft^3
Step 2: Determine storm water quality design volume, V_{wq}			
2-1. Determine the water quality design volume, V_{wq}, using SBUH method, Appendix C (Note: V_{wq} is always equal to $V_{one\text{-}inch}$)	V_{wq}=	396	ft^3

Step 3: Determine design volume, V_{design} (for sizing)			
3-1. If no infiltration (i.e., impermeable liner w/ underdrains), $V_{design} = V_{wq}$.	V_{design}=		ft^3
3-2. If partial infiltration (i.e., permeable liner w/underdrains), $V_{design} = V_{wq}+0.2V_{wq}$	V_{design}=		ft^3
3-3. If full infiltration (i.e., permeable liner w/ no underdrains), $V_{design} = V_{reduction}$	V_{design}=	637	ft^3
Step 4: Calculate design infiltration rate (assume full infiltration, $V_{design} = V_{reduction}$)			
4-1. Enter soil infiltration rate (0.5 in/hr min.), $k_{measured}$	$K_{measured}$=	1	in/hr
4-2. Enter correction factor for testing (0.3 small scale, 0.5 large scale), F_t	F_t=	0.3	ft
4-3. Enter correction factor for plugging, (0.7 loams-sandy loams, 0.8 fine-loamy sands, 0.9 medium sands, 1.0 coarse sands-cobbles, F_p	F_p=	0.8	ft
4-4. Enter the depth from the bottom of the facility to the maximum wet-season water table or nearest impervious layer, whichever is less. D	D=	10	ft
4-5. Enter the estimated width of the facility	W=	16	ft
4-6. Calculate the correction factor of geometry (0.25 min, 1.0 max), $F_g = 4•D/W +0.05$	F_g=	1	
4-7. Calculate the design infiltration rate, $k_{design}=k_{measured}F_tF_pF_g$	K_{design}=	0.24	in/hr
Step 5: Determine maximum depth that can be infiltrated			
5-1. Enter drawdown time (72 hrs max.), t	t=	72	hrs
5-2. Calculate max. depth of runoff that can be infiltrated within the t, $d_{max}=k_{design}t/12$	d_{max}=	1.44	ft
Step 6: Determine infiltrating surface area (gravel drainage area)			
6-1. Enter gravel drainage layer porosity, n	n=	0.32	
6-2. Enter depth of gravel drainage layer, l	l=	12	in
6-3. Enter the time to fill the gravel drainage layer with water (Use 2 hours for most designs), T	T=	2	hrs
6-4. Calculate infiltrating surface area for dry wells: $A=V_{design}/(Tk_{design}/12)+n*l/12))$	A=	1,769	ft^3
Step 4: Determine Provided Retention Capacity			
4-1. Enter provided infiltrating surface area, A_p	A_p=	3,377	ft^2
4-2. Calculate provided retention capacity, $V_p=(Tk_{design}/12)+n*l/12)*A_p$	V_p=	1,216	ft^3
4-3. Check $V_p \geq V_{design}$		OK	

NO

Permeable Pavement Worksheet Area B

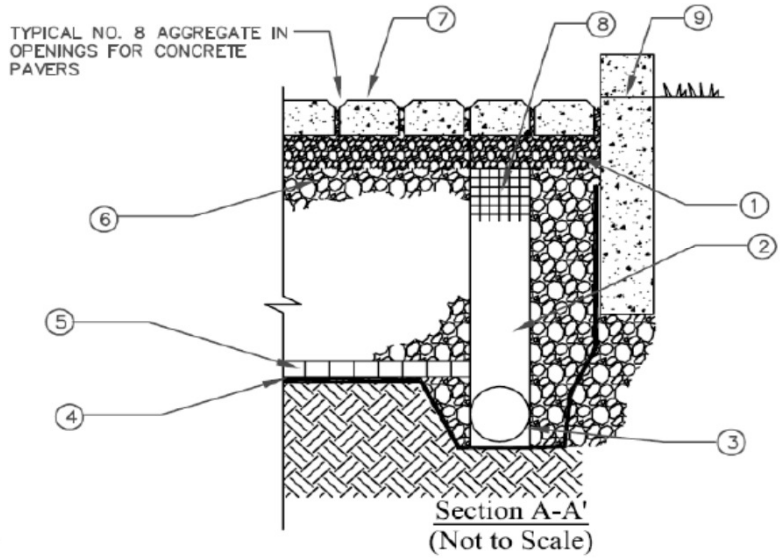


Figure D-6: Permeable Pavement cross-section

Refer to Figures D-6 and Figure 6-16 for a diagrammatic description of the geometric variables.

Step 1: Determine design volume reduction, $V_{reduction}$		
1-1. Enter the volume difference between the pre- and post-development conditions for the 25-yr, 24-hr design storm, V_{25}, calculated using SBUH method, Appendix C	V_{25}= 1977	ft^3
1-2. Enter the volume generated from a one-inch, 24-hr storm event, $V_{one\text{-}inch}$, calculated using SBUH method, Appendix C	$V_{one\text{-}inch}$= 1138	ft^3
1-3. Determine design volume reduction which is the larger of V_{25} and $V_{one\text{-}inch}$ and is the volume to be retained on-site	$V_{reduction}$= 1977	ft^3
Step 2: Determine storm water quality design volume, V_{wq}		
2-1. Determine the water quality design volume, V_{wq}, using SBUH method, Appendix C (Note: V_{wq} is always equal to $V_{one\text{-}inch}$)	V_{wq}= 1138	ft^3

Step 3: Determine design volume, V_{design} (for sizing)			
3-1. If no infiltration (i.e., impermeable liner w/ underdrains), $V_{design} = V_{wq}$.	V_{design}=		ft^3
3-2. If partial infiltration (i.e., permeable liner w/underdrains), $V_{design} = V_{wq}+0.2V_{wq}$	V_{design}=		ft^3
3-3. If full infiltration (i.e., permeable liner w/ no underdrains), $V_{design} = V_{reduction}$	V_{design}=	1977	ft^3
Step 4: Calculate design infiltration rate (assume full infiltration, $V_{design} = V_{reduction}$)			
4-1. Enter soil infiltration rate (0.5 in/hr min.), $k_{measured}$	$K_{measured}$=	1	in/hr
4-2. Enter correction factor for testing (0.3 small scale, 0.5 large scale), F_t	F_t=	0.3	ft
4-3. Enter correction factor for plugging, (0.7 loams-sandy loams, 0.8 fine-loamy sands, 0.9 medium sands, 1.0 coarse sands-cobbles, F_p	F_p=	0.8	ft
4-4. Enter the depth from the bottom of the facility to the maximum wet-season water table or nearest impervious layer, whichever is less. D	D=	10	ft
4-5. Enter the estimated width of the facility	W=	16	ft
4-6. Calculate the correction factor of geometry (0.25 min, 1.0 max), $F_g = 4•D/W +0.05$	F_g=	1	
4-7. Calculate the design infiltration rate, $k_{design}=k_{measured}F_tF_pF_g$	K_{design}=	0.24	in/hr
Step 5: Determine maximum depth that can be infiltrated			
5-1. Enter drawdown time (72 hrs max.), t	t=	72	hrs
5-2. Calculate max. depth of runoff that can be infiltrated within the t, $d_{max}=k_{design}t/12$	d_{max}=	1.44	ft
Step 6: Determine infiltrating surface area (gravel drainage area)			
6-1. Enter gravel drainage layer porosity, n	n=	0.32	
6-2. Enter depth of gravel drainage layer, l	l=	12	in
6-3. Enter the time to fill the gravel drainage layer with water (Use 2 hours for most designs), T	T=	2	hrs
6-4. Calculate infiltrating surface area for dry wells: $A=V_{design}/(Tk_{design}/12)+n*l/12))$	A=	5,492	ft^3
Step 4: Determine Provided Retention Capacity			
4-1. Enter provided infiltrating surface area, A_p	A_p=	7,625	ft^2
4-2. Calculate provided retention capacity, $V_p=(Tk_{design}/12)+n*l/12)*A_p$	V_p=	2,745	ft^3
4-3. Check $V_p \geq V_{design}$		OK	

NO

Bioretention Worksheet Area C

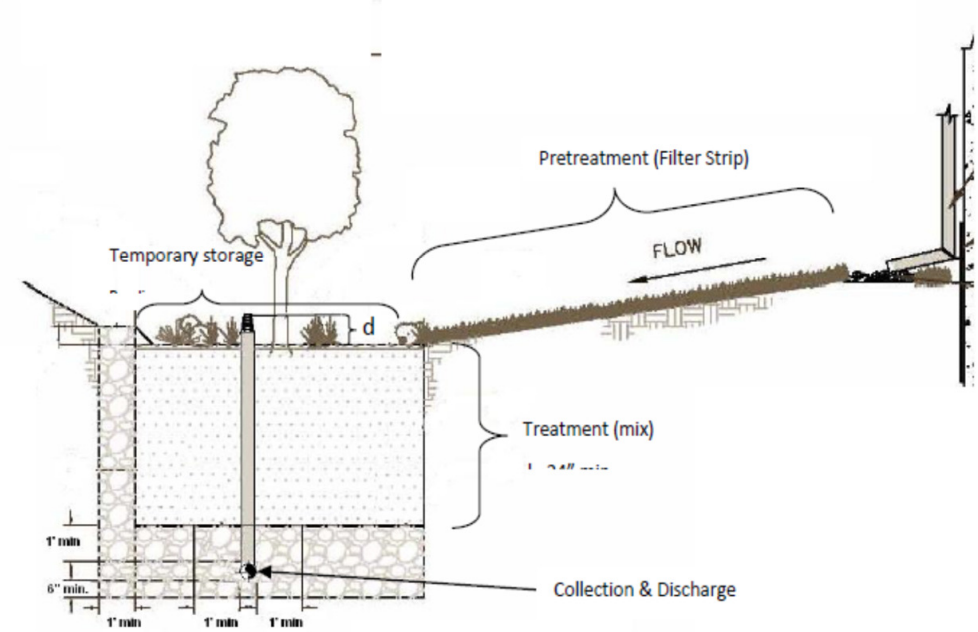


Figure D-1: Bioretention Area Cross-Section

Refer to Figure D-1 and Figure 6-2 for the description of the geometric variables.

Step 1: Determine design volume reduction, $V_{reduction}$			
1-1. Enter the volume difference between the pre- and post-development conditions for the 25-yr, 24-hr design storm, V_{25}, calculated using SBUH method, Appendix C	V_{25}=	68	ft^3
1-2. Enter the volume generated from a one-inch, 24-hr storm event, $V_{one\text{-}inch}$, calculated using SBUH method, Appendix C	$V_{one\text{-}inch}$=	33	ft^3
1-3. Determine design volume reduction which is the larger of V_{25} and $V_{one\text{-}inch}$ and is the volume to be retained on-site	$V_{reduction}$=	68	ft^3
Step 2: Determine storm water quality design volume, V_{wq}			
2-1. Determine the water quality design volume, V_{wq}, using SBUH method, Appendix C (Note: V_{wq} is always equal to $V_{one\text{-}inch}$)	V_{wq}=	33	ft^3

Step 3: Determine design volume, V_{design} (for sizing)			
3-1. If underdrain system is used, $V_{design} = V_{wq}$ If there is no underdrain system, the larger of $V_{reduction}$ and V_{wq}	V_{design}=	68	ft^3
Step 4: Pretreatment			
4-1. If pretreatment is required please go to the vegetated filter strip worksheet, Appendix C			
Step 5: Calculate Bioretention Area			
5-1. Enter thickness of planting mix (min.24"), l	l=	24	in
5-2. Enter Storage depth (12" max.) above the filter, d	d=	3	in
5-3. Enter infiltration rate, k_{design} (Note: infiltration rate of planting soil. If no underdrain, infiltration rate of native subsoil or fill. If no underdrains, see step 4 of the infiltration BMP Worksheet, Appendix D to calculate k_{design}).	k_{design}=	0.24	in/hr
5-4. Enter drawdown time, t	t=	48	hr
5-5. Calculate bioretention area, $A_{sf}=(V_{design}*l)/[(t*k_{design}/12)*(l+d)]$	A_{sf}=	63	ft2
Step 6: Calculate underdrain system flow rate (if an underdrain is provided)			
6-1. Calculate filtered flow rate to be conveyed by the longitudinal drain pipe, $Q_f=k_{design}*A_{sf}/43200$ (Note: for this example, step 6-1 is equivalent to step 5-1 of the Sand Filter Worksheet, Appendix D).	Q_f=	N/A	cfs
6-2. Calculate underdrain system capacity (steps 5-2 throuhg 5-7 of Sand Filter Worksheet)			
6-3. Enter minimum slope for energy gradient, S_e	S_e=		
6-4. Enter Hazen-Williams coeffiient for plastic, C	C=		
6-5. Enter pipe diameter, D	D=		in
6-6. Calculate pipe hydraulic radius, $R_h=D/48$	R_h=		
6-7. Calculate velocity at the outlet of the pipe, $V_p=1.318CR_h^{0.63}S_e^{0.54}$	V_p=		ft/s
6-8. Calculate pipe capacity, $Q_{cap}=0.25\pi(D/12)^2V_p$	Q_{cap}=		cfs
Step 7: Provide Conveyance Capacity for Flows Higher than Q_{wq}			
7-1. An emergency overflow must be provided if the bioretention area is placed online or in the event the surface area becomes clogged.			
Step 8: Calculate Provided Treatment Volume			
8-1. Enter provided bioretention area	A_p=	65	ft^2
8-2. Calculate provided treatment volume, Vpt=[Ap*(t*kdesign/12)*(l+d)]/l	V_{pt}=	70	ft^3
8-3. Check $V_{pt} > V_{wq}$		OK	

Bioretention Worksheet Area D

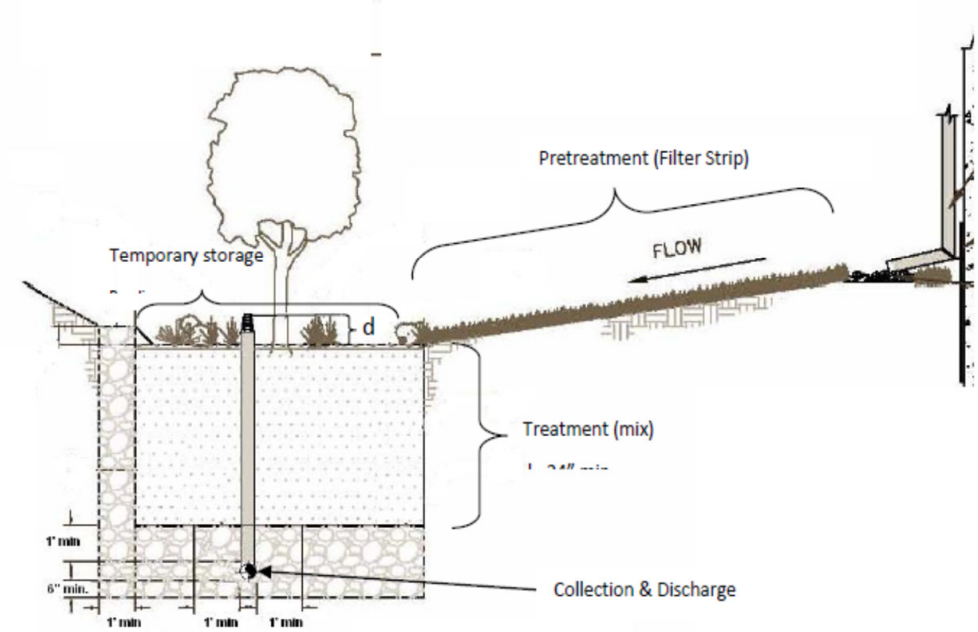


Figure D-1: Bioretention Area Cross-Section

Refer to Figure D-1 and Figure 6-2 for the description of the geometric variables.

Step 1: Determine design volume reduction, $V_{reduction}$			
1-1. Enter the volume difference between the pre- and post-development conditions for the 25-yr, 24-hr design storm, V_{25}, calculated using SBUH method, Appendix C	V_{25}=	88	ft^3
1-2. Enter the volume generated from a one-inch, 24-hr storm event, $V_{one\text{-}inch}$, calculated using SBUH method, Appendix C	$V_{one\text{-}inch}$=	41	ft^3
1-3. Determine design volume reduction which is the larger of V_{25} and $V_{one\text{-}inch}$ and is the volume to be retained on-site	$V_{reduction}$=	88	ft^3
Step 2: Determine storm water quality design volume, V_{wq}			
2-1. Determine the water quality design volume, V_{wq}, using SBUH method, Appendix C (Note: V_{wq} is always equal to $V_{one\text{-}inch}$)	V_{wq}=	41	ft^3

Step 3: Determine design volume, V_{design} (for sizing)			
3-1. If underdrain system is used, $V_{design} = V_{wq}$ If there is no underdrain system, the larger of $V_{reduction}$ and V_{wq}	V_{design}=	88	ft^3
Step 4: Pretreatment			
4-1. If pretreatment is required please go to the vegetated filter strip worksheet, Appendix C			
Step 5: Calculate Bioretention Area			
5-1. Enter thickness of planting mix (min.24"), l	l=	24	in
5-2. Enter Storage depth (12" max.) above the filter, d	d=	3	in
5-3. Enter infiltration rate, k_{design} (Note: infiltration rate of planting soil. If no underdrain, infiltration rate of native subsoil or fill. If no underdrains, see step 4 of the infiltration BMP Worksheet, Appendix D to calculate k_{design}).	k_{design}=	0.24	in/hr
5-4. Enter drawdown time, t	t=	48	hr
5-5. Calculate bioretention area, $A_{sf}=(V_{design}*l)/[(t*k_{design}/12)*(l+d)]$	A_{sf}=	81	ft2
Step 6: Calculate underdrain system flow rate (if an underdrain is provided)			
6-1. Calculate filtered flow rate to be conveyed by the longitudinal drain pipe, $Q_f=k_{design}*A_{sf}/43200$ (Note: for this example, step 6-1 is equivalent to step 5-1 of the Sand Filter Worksheet, Appendix D).	Q_f=	N/A	cfs
6-2. Calculate underdrain system capacity (steps 5-2 throuhg 5-7 of Sand Filter Worksheet)			
6-3. Enter minimum slope for energy gradient, S_e	S_e=		
6-4. Enter Hazen-Williams coeffiient for plastic, C	C=		
6-5. Enter pipe diameter, D	D=		in
6-6. Calculate pipe hydraulic radius, $R_h=D/48$	R_h=		
6-7. Calculate velocity at the outlet of the pipe, $V_p=1.318CR_h^{0.63}S_e^{0.54}$	V_p=		ft/s
6-8. Calculate pipe capacity, $Q_{cap}=0.25\pi(D/12)^2V_p$	Q_{cap}=		cfs
Step 7: Provide Conveyance Capacity for Flows Higher than Q_{wq}			
7-1. An emergency overflow must be provided if the bioretention area is placed online or in the event the surface area becomes clogged.			
Step 8: Calculate Provided Treatment Volume			
8-1. Enter provided bioretention area	A_p=	82	ft^2
8-2. Calculate provided treatment volume, Vpt=[Ap*(t*kdesign/12)*(l+d)]/l	V_{pt}=	89	ft^3
8-3. Check $V_{pt} > V_{wq}$		OK	

ATTACHMENT 3

INFILTRATION TESTING REPORT

INFILTRATION TESTING AND PAVEMENT SECTION REPORT

FOR PROPOSED STORMWATER INFILTRATION BMP

AT ORTEGA PARK

SANTA BARBARA, CALIFORNIA

PROJECT NO.: 302880-001

MAY 31, 2019

PREPARED FOR

RRM DESIGN GROUP

ATTENTION: MICHAEL HAMILTON

BY

EARTH SYSTEMS PACIFIC

1731-A WALTER STREET

VENTURA, CALIFORNIA 93003

Earth Systems
1731 Walter Street, Suite A | Ventura, CA 93003 | Ph: 805.642.6727 | www.earthsystems.com

May 31, 2019

Project No.: 302880-001
Report No.: 19-5-104

RRM Design Group
Attention: Michael Hamilton
10 East Figueroa Street, Suite 200
Santa Barbara, CA 93101

Project: Ortega Park (Proposed Adjacent Parking Areas)
Santa Barbara, California
Subject: Infiltration Testing and Pavement Section Report

Introduction

As authorized, Earth Systems Pacific has performed a geotechnical study for storm water infiltration BMPs and parking improvements to be constructed at the proposed parking areas adjacent to Ortega Park in Santa Barbara, California.

Site Setting

The proposed parking areas are currently covered with landscaping and hardscaping. The project site is relatively flat and is bounded by East Ortega Street to the northwest, North Quarantina Street to the northeast, East Cota Street to the south east, and North Salsipuedes Street to the southwest. The geographic coordinates of the project site are 34.4251˚ North Latitude and 119.6901° West Longitude.

Infiltration Testing

On February 7, 2019, four approximately 4-inch diameter infiltration borings (IT-1, IT-2, IT-5, and IT-6) were hand-excavated to depths of about 2.5, 6, 2.5, and 3.5 feet, respectively, below the ground surface to determine the soil profile and allow installation of plastic casing for infiltration testing (see attached Site Plan for boring locations).

After drilling was completed, 2-inch diameter slotted PVC casings were lowered into Borings IT-1 and IT-5. Earth Systems did not perform an infiltration test in Borings IT-2 and IT-6 because of the shallow groundwater. The annuli between the casings and boring walls were then filled with pea gravel.

It should be noted that the rate the water surface drops in a borehole is a percolation rate, which is related to, but is not an infiltration rate. Percolation rate ignores the wetted soil surface area into which the water is infiltrating and does not account for the volume of water infiltrate. An infiltration rate considers both factors. Hence, percolation rates (in unit length

per unit time) are an overestimation of infiltration rates (also in unit length per unit time). Earth Systems uses the Porchet equation to account for the wetted surface area and volume of water infiltrated to estimate an infiltration rate. Forms of the equation can be found in the Riverside County - Low Impact Development BMP Design Handbook (2001), the South Orange County Version, Technical Guidance Documents Appendices (2017), or in a paper by J.W. Van Hoorn, "Determining Hydraulic Conductivity with the Inversed Auger Hole and Infiltrometer Methods." The Porchet equation in its most simple form is the volume of water infiltrated divided by the product of the change in time and the wetted surface area. By substitution, the equation can be shown to be equal to:

$$\text{Infiltration Rate (inches /hr.)} = \frac{\Delta H * r * 60}{\Delta t * (r + 2H_{avg})}$$

where: ΔH = Change in water level (inches)
Δt = Change in time (minutes)
r = Radius of test hole (inches)
H_{avg} = Average height of water in test hole (inches)

The above equation does not account for the gravel pack in the annulus between the borehole wall and the slotted pipe fitted in the test hole. Ignoring the gravel pack inflates the amount of water infiltrated and, hence, yields an unconservative infiltration rate. A method to account for the volume occupied by the gravel (and the slotted pile) and adjust he infiltration rate accordingly is presented in Caltrans Test 750. Earth Systems makes this additional adjustment to our test data. The equation is:

$$\text{Correction Factor} = n * [1 - (O/D)^2] + (I/D)^2$$

Where: n = Pea gravel porosity
O = Outside diameter of slotted pipe (inches)
D = Test hole diameter (inches)
I = Inside diameter of slotted pipe (inches)

Earth Systems has determined an average porosity for the pea gravel used in our testing. The other values are simple measurements.

Based on the testing, the recommended test infiltration rates for the depths tested and boring locations are summarized in the following table:

Boring	Boring Depth (feet)	Infiltration Rate (inch/hour)	Infiltration Rate (cm/s)
IT-1	2.5	1.4	0.0010
IT-5	2.5	0.6	0.0004

There are many factors that influence the infiltration rate. Clear water was used in our tests, whereas deleterious material will likely be contained in the storm water. Variations in soil conditions within the limits of the proposed infiltration system will likely affect infiltration characteristics. The designer who utilizes the infiltration results should consider these factors, as well as apply a factor-of-safety to the infiltration rate to account for future disposal bed siltation.

The designer of the proposed infiltration system beneath the pavement should also consider that compacted soil will be present below the proposed parking areas. The infiltration rates provided above are for the onsite soils at the depths tested. Compaction of the soils will reduce the infiltration rate of the soils underlying the Class II Permeable Base. The designer of the proposed infiltration system should consider the use of gravel-filled drains that extend below the compacted native soils to allow the storm water to infiltrate into the underlying native soils.

Paving Design

A Resistance ("R") Value test was conducted on a bulk sample secured on March 14, 2019. The test was performed in accordance with California Method 301. Three specimens at different moisture contents were tested, and the R-Value at 300 psi exudation pressure was determined from the plotted results. An R-Value of 16 was measured (see attached R-Value Testing Sheet).

The following preliminary paving sections table summarizes thicknesses of asphalt and Class II base required for different traffic indices (ranging from 4.0 to 8.0, with 0.5 intervals) using an "R"-Value of 16. Asphalt and Class II base should be compacted to a minimum of 95 percent of maximum dry density on subgrade soils compacted to a minimum of 90 percent of maximum dry density.

Traffic Index	Asphalt Thickness (inches)	Min. Aggregate Base Thickness (inches)
4.0	3.0	5.0
4.5	3.0	6.5
5.0	3.0	8.0
5.5	3.0	9.5
6.0	3.0	11.5
6.5	3.0	13.0
7.0	3.0	14.5
7.5	3.5	16.0
8.0	5.0	14.5

The preliminary paving sections table provided above has been designed for the type of traffic indicated. If the pavement is placed before construction on the project is complete, construction loads, which could increase the traffic indices above those assumed above, should be taken into account. Also, subgrade "R"-Values should be reevaluated at or near the end of rough grading so that final pavement designs can be made.

Please call if you have any questions, or if we can be of further service.

Respectfully submitted,

EARTH SYSTEMS PACIFIC

mlu

May 31, 2019

Meng Wei Lu
Civil Engineer

REGISTERED PROFESSIONAL ENGINEER
MENG WEI LU
C 89106
Exp 9/30/20
CIVIL
STATE OF CALIFORNIA

Reviewed and Approved

Todd J. Tranby
Engineering Geologist

PROFESSIONAL GEOLOGIST
TODD J. TRANBY
No. 2078
CERTIFIED
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

Attachment:
- Vicinity Map
- Site Plan
- Logs of Borings
- Infiltration Test Results
- R-Value Testing Sheet

Copies:
- 4 - Client (3 mail, 1 email)
- 1 - Project File



*Taken from USGS Topo Map, Santa Barbara Quadrangle, California, 2015.

Approximate Scale: 1" = 2,000'

0 2,000' 4,000'

N

VICINITY MAP

Ortega Park
Santa Barbara, California

Earth Systems

May 2019	302880-001

SANTA BARBARA JUNIOR HIGH

{N'ELY. R/W LINE}

N QUARANTINA ST

N 41°30'00" W

451.04

{ORIGINAL S'WLY. R/W LINE}

(ABANDONED)

(ABANDONED)

6"-RCW

8"-SD

15"-SD

(E) 36'

60'

RIGHT-OF-WAY

12'

8'

25'

18'

E ORTEGA STREET

E COTA STREET

N SALSIPUEDES STREET

B-3

IT-1

IT-2

IT-6

IT-5

17.5'

24'

8'

2'

B-3 : Approximate boring location.

IT-6 : Approximate infiltration testing locations.

N

Approximate Scale: 1" = 60'

0 60' 120'

SITE PLAN

Ortega Park
Santa Barbara, California

Earth Systems

May 2019 | 302880-001

Earth Systems

1731-A Walter Street, Ventura, California 93003
PHONE: (805) 642-6727 FAX: (805) 642-1325

BORING NO: IT-1
PROJECT NAME: Ortega Park
PROJECT NUMBER: 302880-001
BORING LOCATION: Per Plan

DRILLING DATE: February 7, 2019
DRILLING METHOD: Hand Auger
DRILL:
LOGGED BY: SC

Vertical Depth	Sample Type: Bulk	Sample Type: SPT	Sample Type: Mod. Calif.	PENETRATION RESISTANCE (BLOWS/6")	SYMBOL	USCS CLASS	UNIT DRY WT. (pcf)	MOISTURE CONTENT (%)	DESCRIPTION OF UNITS
0						SM			**SOIL:** Dark brown silty sand; soft; moist. **ARTIFICIAL FILL:** Yellowish brown silty sand with sandstone gravel; medium dense; damp to moist.
5									Total Depth: 2.5 feet. No Groundwater Encountered. Installed 2.5 feet of 2.0 inch slotted PVC pipe and gravel pack.
10									
15									
20									

Note: The stratification lines shown represent the approximate boundaries between soil and/or rock types and the transitions may be gradual.

Earth Systems

1731-A Walter Street, Ventura, California 93003
PHONE: (805) 642-6727 FAX: (805) 642-1325

BORING NO: IT-2
PROJECT NAME: Ortega Park
PROJECT NUMBER: 302880-001
BORING LOCATION: Per Plan

DRILLING DATE: February 7, 2019
DRILLING METHOD: Hand Auger
DRILL:
LOGGED BY: SC

Vertical Depth	Sample Type: Bulk	Sample Type: SPT	Sample Type: Mod. Calif.	PENETRATION RESISTANCE (BLOWS/6")	SYMBOL	USCS CLASS	UNIT DRY WT. (pcf)	MOISTURE CONTENT (%)	DESCRIPTION OF UNITS
0						SM			**SOIL:** Dark brown silty sand; soft; moist.
									ARTIFICIAL FILL: Yellowish brown silty sand with sandstone gravel; medium dense; damp to moist.
									Becomes very moist.
5									**ARTIFICIAL FILL:** Yellowish brown silty sand to sandy silt; loose; moist.
									Total Depth: 6.0 feet.
									Groundwater Depth: 4.30 feet.
									Hole abandoned for testing due to high groundwater.
10									
15									
20									

Note: The stratification lines shown represent the approximate boundaries between soil and/or rock types and the transitions may be gradual.

Earth Systems

1731-A Walter Street, Ventura, California 93003
PHONE: (805) 642-6727 FAX: (805) 642-1325

BORING NO: IT-5
PROJECT NAME: Ortega Park
PROJECT NUMBER: 302880-002
BORING LOCATION: Per Plan

DRILLING DATE: February 7, 2019
DRILLING METHOD: Hand Auger
DRILL:
LOGGED BY: SC

Vertical Depth	Sample Type: Bulk	Sample Type: SPT	Sample Type: Mod. Calif.	PENETRATION RESISTANCE (BLOWS/6")	SYMBOL	USCS CLASS	UNIT DRY WT. (pcf)	MOISTURE CONTENT (%)	DESCRIPTION OF UNITS
0						SM			**ARTIFICIAL FILL:** Yellowish brown silty sand: some gravel; medium dense; moist.
									Total Depth: 2.5 feet. No Groundwater Encountered. Installed 2.5 feet of 2.0 inch slotted PVC pipe and gravel pack.
5									
10									
15									
20									

Note: The stratification lines shown represent the approximate boundaries between soil and/or rock types and the transitions may be gradual.

Earth Systems

1731-A Walter Street, Ventura, California 93003
PHONE: (805) 642-6727 FAX: (805) 642-1325

BORING NO: IT-6
PROJECT NAME: Ortega Park
PROJECT NUMBER: 302880-002
BORING LOCATION: Per Plan

DRILLING DATE: February 7, 2019
DRILLING METHOD: Hand Auger
DRILL:
LOGGED BY: SC

Vertical Depth	Sample Type: Bulk	Sample Type: SPT	Sample Type: Mod. Calif.	PENETRATION RESISTANCE (BLOWS/6")	SYMBOL	USCS CLASS	UNIT DRY WT. (pcf)	MOISTURE CONTENT (%)	DESCRIPTION OF UNITS
0						SM			**ARTIFICIAL FILL:** Yellowish brown silty sand: some gravel; medium dense; moist.
									Brick fragments, some discoloration, coarse gravel.
									Refusal at 3.5 feet due to coarse gravel, two attempts made.
									Total Depth: 3.5 feet.
5									No Groundwater Encountered.
10									
15									
20									

Note: The stratification lines shown represent the approximate boundaries between soil and/or rock types and the transitions may be gradual.

INFILTRATION RATE BY THE BOREHOLE PERCOLATION TEST METHOD

This workbook calculates an adjusted infiltration rate from a borehole percolation test. The percolation rate is adjusted for sidewall area according to the Porchet method, and then re-adjusted for the effect of the gravel placed in annulus between the borehole wall and a pipe placed in the borehole by a method presented in Caltrans Test 750.

Project Name	Ortega Park
Project Number	302880-001
Test Hole No.	IT-1
Tester	SC
Pre-Soak Date	February 7, 2019
Test Date	February 7, 2019

Test Hole Radius, r (inches)	2
Total Depth of Test Hole, D_T (feet)	2.5
Inside Diameter of Pipe, I (inches)	2.00
Outside Diameter of Pipe, O (inches)	2.38
Pipe Stick-Up (feet)	0.5
Porosity of Gravel, n	0.41
Porosity Correction Factor, C	0.51
Factor of Safety (FOS), F	N/A

Interval No.	Delta Time, Δt (min.)	Initial Depth to Water from TOP, D_o (ft.)	Final Depth to Water from TOP, D_f (ft.)	Initial Water Height, H_o (in.)	Final Water Height, H_f (in.)	Change in Water Height, ΔH (in.)	Perc Rate, (in/hr)	Infiltration Rate (in./hr.)	Corrected Infiltration Rate (in/hr)
1	3.00	2.00	2.20	12.00	9.60	2.40	48.00	4.07	2.09
2	3.00	2.00	2.16	12.00	10.08	1.92	38.40	3.19	1.64
3	3.00	2.00	2.15	12.00	10.20	1.80	36.00	2.98	1.53
4	3.00	1.97	2.13	12.36	10.44	1.92	38.40	3.10	1.59
5	3.00	1.97	2.13	12.36	10.44	1.92	38.40	3.10	1.59
6	3.00	2.00	2.13	12.00	10.44	1.56	31.20	2.55	1.31
7	3.00	1.98	2.12	12.24	10.56	1.68	33.60	2.71	1.40
8	3.00	1.97	2.11	12.36	10.68	1.68	33.60	2.68	1.38
9	3.00	1.98	2.12	12.24	10.56	1.68	33.60	2.71	1.40
10	3.00	1.97	2.11	12.36	10.68	1.68	33.60	2.68	1.38
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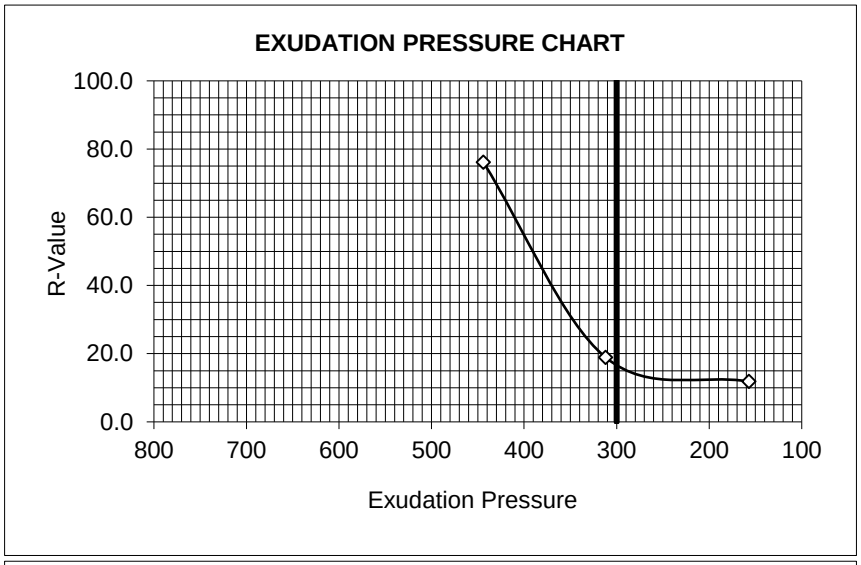
INFILTRATION RATE BY THE BOREHOLE PERCOLATION TEST METHOD

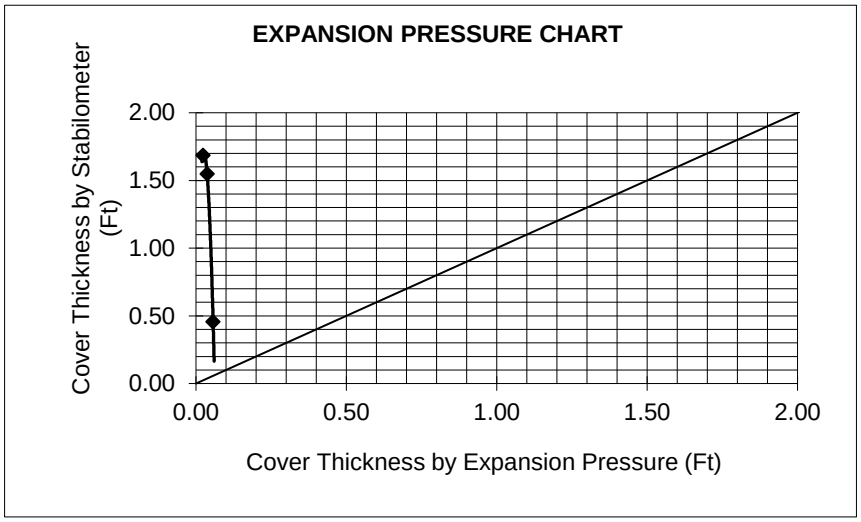
This workbook calculates an adjusted infiltration rate from a borehole percolation test. The percolation rate is adjusted for sidewall area according to the Porchet method, and then re-adjusted for the effect of the gravel placed in annulus between the borehole wall and a pipe placed in the borehole by a method presented in Caltrans Test 750.

Project Name	Ortega Park
Project Number	302880-001
Test Hole No.	IT-5
Tester	JW
Pre-Soak Date	February 7, 2019
Test Date	February 7, 2019

Test Hole Radius, r (inches)	2
Total Depth of Test Hole, D_T (feet)	2.5
Inside Diameter of Pipe, I (inches)	2.00
Outside Diameter of Pipe, O (inches)	2.38
Pipe Stick-Up (feet)	0.5
Porosity of Gravel, n	0.41
Porosity Correction Factor, C	0.51
Factor of Safety (FOS), F	N/A

Interval No.	Delta Time, Δt (min.)	Initial Depth to Water from TOP, D_o (ft.)	Final Depth to Water from TOP, D_f (ft.)	Initial Water Height, H_o (in.)	Final Water Height, H_f (in.)	Change in Water Height, ΔH (in.)	Perc Rate, (in/hr)	Infiltration Rate (in./hr.)	Corrected Infiltration Rate (in/hr)
1	5.00	1.30	1.50	20.40	18.00	2.40	28.80	1.43	0.73
2	5.00	1.50	1.70	18.00	15.60	2.40	28.80	1.62	0.83
3	5.00	1.40	1.60	19.20	16.80	2.40	28.80	1.52	0.78
4	5.00	1.50	1.65	18.00	16.20	1.80	21.60	1.19	0.61
5	5.00	1.50	1.65	18.00	16.20	1.80	21.60	1.19	0.61
6	5.00	1.45	1.60	18.60	16.80	1.80	21.60	1.16	0.59
7	5.00	1.50	1.65	18.00	16.20	1.80	21.60	1.19	0.61
8	5.00	1.50	1.65	18.00	16.20	1.80	21.60	1.19	0.61
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JOB NAME: Ortega Park
SAMPLE I. D.: B-3@0-4'
SOIL DESCRIPTION: Brown/ML-Silty Clay

SPECIMEN NUMBER	A	B	C
EXUDATION PRESSURE	444	312	157
RESISTANCE VALUE	76.1	18.9	11.8
EXPANSION DIAL(0.0001")	17	11	7
EXPANSION PRESSURE (PSF)	73.6	47.6	30.3
% MOISTURE AT TEST	13.9	14.7	15.4
DRY DENSITY AT TEST	114.2	112.2	112.6

R-VALUE @ 300 PSI EXUDATION	**16**
R-VALUE by Expansion Pressure*	**N/A**

**Based on Traffic Index = 8.00 & Gravel Factor = 1.34*