

**DEPARTMENT OF DEFENSE
UNITED STATES MARINE CORPS**

FINDING OF NO SIGNIFICANT IMPACT

**FOR MCTSSA CANTONMENT AREA EXPANSION, MARINE CORPS BASE
CAMP PENDLETON, SAN DIEGO COUNTY, CALIFORNIA**

Pursuant to the National Environmental Policy Act (NEPA) (42 U.S.C. §§ 4321-4370h); the Council on Environmental Quality (CEQ) Regulations implementing procedural provisions of NEPA (40 C.F.R. Parts 1500-1508); and the Marine Corps Environmental Compliance and Protection Manual (Marine Corps Order P5090.2A), the Marine Corps gives notice that an Environmental Assessment (EA) has been prepared and an Environmental Impact Statement (EIS) will not be prepared for the construction and operation of the Marine Corps Tactical Systems Support Activity (MCTSSA) Cantonment Area Expansion project at Marine Corps Base (MCB) Camp Pendleton, California. I find that the proposed action, including adherence to the impact avoidance, minimization, and mitigation measures set forth in detail in the EA, will not have an adverse impact on the human environment. Therefore, an EIS is not required.

Proposed Action: The proposed action is the physical expansion of the existing MCTSSA Cantonment by approximately 31 acres (13 hectares) and the construction and operation of radar antennae (temporary and permanent); a vehicle testing track; support facilities (maintenance, two text laboratory/office buildings, and vehicle parking area); and site improvements (grading, site access, utilities, sidewalks, drainage, and Antiterrorism/Force Protection features).

Purpose and Need for the Proposed Action: The primary purpose of the proposed action is to expand the MCTSSA Cantonment Area on MCB Camp Pendleton. MCTSSA is the Marine Air Ground Task Force (MAGTF) Command, Control, Communications, Computers and Intelligence (C4I) Systems Engineering Interoperability, Architecture, and Technology Center for the United States Marine Corps (USMC) and is responsible for developing, testing, and maintaining software and software-associated hardware and related equipment for C4I systems used by the USMC to meet mission requirements. Expansion is needed to accommodate existing and planned radio frequency systems, a new laboratory and test facilities to support C4I systems engineering activities, additional warehouse/storage space to properly house and store C4I systems and equipment, and a new vehicle testing track. The existing MCTSSA Cantonment Area does not provide adequate space to support additional planned antennae systems or provide adequate space for safe movement, staging, and required radio frequency safety zones. Lab space within the existing facility is overcrowded because of the continued growth in the number of systems supported by MCTSSA. Additional warehouse/storage space is needed to properly house and store C4I systems and equipment. MCTSSA requires a vehicle testing facility within the Cantonment Area to facilitate testing of current and planned vehicle-mounted systems in a timely and cost-effective manner.

Alternatives: The EA analyzed the potential effects of two alternatives: 1) Alternative 1: MCTSSA South Expansion (Preferred Alternative); and 2) the No-Action Alternative. Other location alternatives were considered but not carried forward for analysis for reasons set forth in the EA. Under Alternative 1, the MCTSSA Cantonment Area expansion would be implemented on 34 acres (14 hectares) of which approximately 3 acres (1 hectare) are located within the existing MCTSSA Cantonment Area and the remaining 31 acres (13 hectares) (i.e., expansion

area) are located immediately south of the existing MCTSSA Cantonment Area in a former agricultural field at MCB Camp Pendleton. Under the No Action Alternative, the proposed expansion would not occur and none of the proposed improvements would be made.

Selected Alternative: Based on the analysis in the EA, I have selected the Preferred Alternative for implementation.

Summary of Environmental Effects: The EA analyzes the potential environmental impacts resulting from implementation of the Selected Alternative. The resources most likely to be affected by this action are land use and coastal zone management; aesthetics; geology, topography, and soils; water resources; biological resources; air quality; cultural resources; utilities; public health and safety. The potential environmental impacts of the alternatives on these resources were analyzed. Conversely, impacts to the following resources were considered to be negligible or non-existent and were not further analyzed in the EA: noise, public services; socioeconomics; transportation; and environmental justice. The alternatives will have negligible direct, indirect, or cumulative impacts on the quality of the local environment and will comply with all regulatory requirements. With incorporation of the Special Conservation Measures, impacts to all resources would not be significant for the Selected Alternative. Air quality impacts from the Selected Alternative will not exceed any conformity de minimis threshold for the San Diego Air Basin. A Record of Non-Applicability for Clean Air Act General Conformity requirement has been prepared and approved for this project. There are no significant cumulative effects associated with this.

Findings: There will not be any disproportionately high and adverse human health or environmental effects from the Selected Alternative on minority or low-income populations. Nor will there be any impacts associated with the protection of children from environmental health and safety risks.

The EA and FONSI addressing the proposed action are on file and may be reviewed at the place of origin: Commanding General, Marine Corps Base (Attn: Director, Environmental Security), Camp Pendleton, California 92055-5010, telephone (760) 725-3561.


Signature

12 SEP 19
Date

J. K. ARRUDA
Acting

Appendix E

Record of Non-Applicability (RONA)

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UNITED STATES MARINE CORPS
MARINE CORPS INSTALLATIONS WEST-MARINE CORPS BASE
BOX 555010
CAMP PENDLETON, CALIFORNIA 92055-5010

5090
ENV/PLN
12 SEP 2014

MEMORANDUM FOR THE RECORD

From: Commanding General
To: Director, Environmental Security

Subj: RECORD OF NON-APPLICABILITY FOR PE20110030; MARINE CORPS
TACTICAL SYSTEMS SUPPORT ACTIVITY CANTONMENT AREA
EXPANSION, CAMP PENDLETON

Ref: (a) U.S. Environmental Protection Agency, Determining
Conformity of General Federal Actions to State or
Federal Implementation Plans; Final Rule, published
in the Federal Register on 30 November 1993 (40 CFR
Parts 6, 51, and 93)
(b) U.S. Environmental Protection Agency, Revisions to
the General Conformity Regulations; Final Rule,
published in the Federal Register on 5 April 2010 (40
CFR Parts 51 and 93)
(c) OPNAVINST 5090.1C.
(d) Environmental Assessment (EA) for the MCTSSA
Cantonment Area Expansion, September 2014.

1. References (a), (b), and (c) provide implementing guidance for documenting Clean Air Act (CAA) Conformity Determination requirements. The General Conformity Rule applies to federal actions proposed within areas which are designated as either non-attainment or maintenance areas for a National Ambient Air Quality Standard (NAAQS) for any of the criteria pollutants.

2. An emissions analysis was conducted for reference (d). It was determined that *de minimis* thresholds for applicable criteria pollutants would not be exceeded as a result of implementation of the proposed action. A formal Conformity Determination was not considered necessary.

3. The Proposed Action would occur within the San Diego Air Basin (SDAB) portion of Marine Corps Base, Camp Pendleton. This portion of the SDAB is currently in non-attainment of the 8-hour ozone (O₃) NAAQS and is a maintenance area for carbon monoxide (CO) NAAQS. The SDAB is in attainment of the NAAQS for all other criteria pollutants. Therefore, only project emissions of

Subj: RECORD OF NON-APPLICABILITY FOR PE20110030; MARINE
CORPS TACTICAL SYSTEMS SUPPORT ACTIVITY CANTONMENT AREA
EXPANSION, CAMP PENDLETON

CO and O₃ (or its precursors, volatile organic compounds [VOCs] and oxides of nitrogen [NO_x]) were analyzed in reference (d) for conformity rule applicability. The annual *de minimis* threshold levels for this region are 100 tons of VOC, NO_x, and CO. Federal actions may be exempt from conformity determinations if they do not exceed designated *de minimis* threshold levels.

4. The Marine Corps does not anticipate that the Proposed Action would result in an increase in the number or frequency of traffic operations at MCB Camp Pendleton. Therefore, the Marine Corps determined that additional emissions analyses are not warranted for the Proposed Action.

7. To the best of my knowledge, the information presented in this Record of Non-Applicability is correct and accurate, and I concur in the finding that implementation of the Proposed Action does not require a formal CAA Conformity Determination.


J. K. ARRUDA
Acting

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Files

Enclosure 1

Emission Calculations for Construction of the MCTSSA Cantonment Area Expansion at MCB Camp Pendleton - Alternative 1

- Table 1-1. Emission Source Data for MCTSSA Cantonment Area Expansion at MCB Camp Pendleton - Alternative 1 (Page 1 of 3).
- Table 1-1. Emission Source Data for MCTSSA Cantonment Area Expansion at MCB Camp Pendleton - Alternative 1 (Page 2 of 3).
- Table 1-1. Emission Source Data for MCTSSA Cantonment Area Expansion at MCB Camp Pendleton - Alternative 1 (Page 3 of 3).
- Table 1-2. Air Emission Factors for Equipment Associated with the MCTSSA Cantonment Area Expansion at MCB Camp Pendleton.
- Table 1-3. Emissions for MCTSSA Cantonment Area Expansion at MCB Camp Pendleton - Alternative 1 (Page 1 of 3).
- Table 1-3. Emissions for MCTSSA Cantonment Area Expansion at MCB Camp Pendleton - Alternative 1 (Page 2 of 3).
- Table 1-3. Emissions for MCTSSA Cantonment Area Expansion at MCB Camp Pendleton - Alternative 1 (Page 3 of 3).
- Table 1-4. Summary of Emissions from Construction of the MCTSSA Cantonment Area Expansion at MCB Camp Pendleton - Alternative 1

	A	B	C	D	E	F	G	H	I	J
1	Table 1-1. Emission Source Data for MCTSSA Cantonment Area Expansion at MCB Camp Pendleton - Alternative 1 (Page 1 of 3).									
2		Hp	Fuel	Load	Number	Hourly	Hours/	Daily	Total	Total
3	Construction Activity/Equipment Type	Rating	Type	Factor (1)	Active	Hp-Hrs	Day	Hp-Hrs	Days	Hp-Hrs
4	Site Preparation/Light Grading (2)									
5	Backhoe	160	D	0.37	1	59	8	474	4	1,722
6	Bulldozer - D8	310	D	0.43	1	133	8	1,066	4	3,878
7	Compactive Roller	165	D	0.38	2	125	8	1,003	5	4,690
8	Grader	180	D	0.38	1	68	8	547	5	2,843
9	Loader	215	D	0.41	1	88	8	705	5	3,663
10	Scraper	195	D	0.37	1	72	8	577	5	2,699
11	Water Truck - 5000 Gallons	175	D	0.48	1	84	8	672	11	7,680
12	Fugitive Dust (3)	NA	NA	NA	5	NA	NA	NA	11	57
13	Construct Maintenance Facility (4)									
14	Air Compressor - 100 CFM	50	G	0.60	1	30	6	180	93	16,767
15	Concrete/Industrial Saw	84	G	0.73	1	61	6	368	93	34,272
16	Crane	190	D	0.30	1	57	6	342	93	31,857
17	Forklift	94	D	0.48	1	45	6	268	93	24,955
18	Generator	45	D	0.60	1	27	8	216	93	20,120
19	Concrete Trucks (5)	NA	D	NA	15	NA	14	210	4	889
20	Supply Trucks (5)	NA	D	NA	20	NA	10	200	7	1,411
21	Fugitive Dust (3)	NA	NA	NA	0.8	NA	8	NA	23	18
22	Architectural Coatings (6)	NA	NA	NA	47,892	NA	NA	NA	NA	NA
23	Construct Two C4I Test Labs/Office Buildings (4)									
24	Air Compressor - 100 CFM	50	G	0.60	1	30	6	180	15	2,700
25	Concrete/Industrial Saw	84	G	0.73	1	61	6	368	15	5,519
26	Crane	190	D	0.30	1	57	6	342	15	5,130
27	Forklift	94	D	0.48	1	45	6	268	15	4,019
28	Generator	45	D	0.60	1	27	8	216	15	3,240
29	Concrete Trucks (5)	NA	D	NA	15	NA	14	210	1	143
30	Supply Trucks (5)	NA	D	NA	20	NA	10	200	1	227
31	Fugitive Dust (3)	NA	NA	NA	0.1	NA	8	NA	4	0.4
32	Architectural Coatings (6)	NA	NA	NA	10,680	NA	NA	NA	NA	NA
33	Pave Vehicle Parking Area and Sidewalk (7)									
34	Compactive Roller	165	D	0.38	1	63	6	376	0.4	139
35	Grader	180	D	0.38	1	68	6	410	0.4	168
36	Loader	215	D	0.41	1	88	6	529	0.4	216
37	Paving Machine	200	D	0.50	1	100	6	600	0.2	148
38	Water Truck - 5000 Gallons	175	D	0.48	1	84	8	672	0.9	604
39	Haul Truck - Base (5)	NA	D	NA	20	NA	14	280	2.0	560
40	Haul Truck - Paving (5)	NA	D	NA	20	NA	10	200	2.0	400
41	Fugitive Dust (3)	NA	NA	NA	0.6	NA	8	NA	2.0	1.3
42	Paving Off-gassing (8)	NA	NA	NA	0.63	NA	NA	NA	NA	NA
43	Notes: (1) From ARB In-Use Off-Road Equipment Inventory Model, where applicable (ARB 2011).									
44	(2) Data derived by factoring equipment usage data from site preparation activities for the Port of Los Angeles TraPac project (POLA and ACOE 2007)									
45	by the ratio of the proposed project/TraPac project acreages (7/15.4 acres).									
46	(3) Number Active is the average daily acres disturbed on a continuous basis and Total Hp-Hrs are total acre-days for the entire activity.									
47	(4) Data derived by factoring equipment usage data from building construction activities for the Port of Los Angeles TraPac project (POLA and ACOE 2007)									
48	by the ratio of the proposed project/TraPac project building volumes (621,000 and 100,000/440,000 cubic feet).									
49	(5) Number Active = miles/roundtrip, Hours/Day = daily truck trips, Daily Hp-Hrs = daily miles, and Total Hp-Hrs = total miles.									
50	(6) Number Active = square feet of painted area.									
51	(7) Data derived by factoring equipment usage data from paving activities for the Port of Los Angeles TraPac project (POLA and ACOE 2007)									
52	by the ratio of the proposed project/TraPac project paving areas (0.63/14 acres).									
53	(8) Number Active = acres of paved area.									

	A	B	C	D	E	F	G	H	I	J
56	Table 1-1. Emission Source Data for MCTSSA Cantonment Area Expansion at MCB Camp Pendleton - Alternative 1 (Page 2 of 3).									
57		Hp	Fuel	Load	Number	Hourly	Hours/	Daily	Total	Total
58	Construction Activity/Equipment Type	Rating	Type	Factor (1)	Active	Hp-Hrs	Day	Hp-Hrs	Days	Hp-Hrs
59	<i>Construct Radar Pads (9)</i>									
60	Backhoe	160	D	0.37	1	59	8	474	2	947
61	Loader	215	D	0.41	1	88	6	529	2	1,058
62	Concrete Trucks (5)	NA	D	NA	15	NA	4	60	2	120
63	Supply Trucks (5)	NA	D	NA	10	NA	4	40	1	40
64	Fugitive Dust (3)	NA	NA	NA	0.1	NA	8	NA	3	0.30
65	<i>Construct Internal Access Road (10)</i>									
66	Compactive Roller	165	D	0.38	2	125	8	1,003	2	2,006
67	Grader	150	D	0.41	2	123	6	274	2	548
68	Loader - 966	220	D	0.37	1	81	4	274	2	548
69	Water Truck - 5000 Gallons	175	D	0.38	1	67	4	274	3	822
70	Fugitive Dust (3)	NA	NA	NA	0.5	NA	NA	NA	3	2
71	<i>Pave Internal Access Road (11)</i>									
72	Compactive Roller	165	D	0.38	1	63	6	376	0.4	134
73	Grader	180	D	0.38	1	68	6	410	0.4	162
74	Loader	215	D	0.41	1	88	6	529	0.4	208
75	Paving Machine	200	D	0.50	1	100	6	600	0.2	143
76	Water Truck - 5000 Gallons	175	D	0.48	1	84	8	672	0.9	582
77	Haul Truck - Base (5)	NA	D	NA	10	NA	14	140	2.0	280
78	Haul Truck - Paving (5)	NA	D	NA	10	NA	10	100	2.0	200
79	Fugitive Dust (3)	NA	NA	NA	1	NA	8	NA	2.0	1.2
80	Paving Off-gassing (8)	NA	NA	NA	0.61	NA	NA	NA	NA	NA
81	<i>Construct Vehicle Test Track (12)</i>									
82	Bulldozer - D8	310	D	0.43	1	133	8	1,066	2	2,133
83	Compactive Roller	165	D	0.38	2	125	8	1,003	4	4,013
84	Dump Truck	300	D	0.38	1	114	6	274	2	548
85	Grader	150	D	0.41	2	123	6	274	4	1,096
86	Loader - 966	220	D	0.37	1	81	4	274	4	1,096
87	Water Truck - 5000 Gallons	175	D	0.38	1	67	4	274	6	1,643
88	Fugitive Dust (3)	NA	NA	NA	0.5	NA	NA	NA	6	3
89	<i>Pave Vehicle Test Track (13)</i>									
90	Compactive Roller	165	D	0.38	1	63	8	502	0.4	178
91	Grader	180	D	0.38	1	68	8	547	0.4	216
92	Loader	215	D	0.41	1	88	6	529	0.4	208
93	Paving Machine	200	D	0.50	1	100	8	800	0.2	190
94	Water Truck - 5000 Gallons	175	D	0.48	1	84	4	336	0.9	291
95	Haul Truck - Base (5)	NA	D	NA	10	NA	15	150	2.0	300
96	Haul Truck - Paving (5)	NA	D	NA	10	NA	8	80	1.0	80
97	Fugitive Dust (3)	NA	NA	NA	1	NA	8	NA	2.0	1.2
98	Paving Off-gassing (8)	NA	NA	NA	0.61	NA	NA	NA	NA	NA
99	<i>Construct Maintenance Road within Perimeter Fence (14)</i>									
100	Compactive Roller	165	D	0.38	2	125	8	1,003	2	2,006
101	Grader	150	D	0.41	2	123	6	274	3	822
102	Loader - 966	220	D	0.37	1	81	4	274	2	548
103	Water Truck - 5000 Gallons	175	D	0.38	1	67	4	274	3	822
104	Fugitive Dust (3)	NA	NA	NA	0.5	NA	NA	NA	4	2
105	Notes: (9) Equipment usages based on size of activity (1,725 square feet) and construction experience judgement.									
106	(10) Equipment usages based on size of activity (0.61 acres) and construction experience judgement.									
107	(11) Equipments usages based on 0.61 acres of paved area.									
108	(12) Equipment usages based on size of activity (1.2 acres) and construction experience judgement.									
109	(13) Equipments usages based on 0.61 acres of paved area.									
110	(14) Equipment usages based on size of activity (1.0 acre) and construction experience judgement.									

	A	B	C	D	E	F	G	H	I	J
112	Table 1-1. Emission Source Data for MCTSSA Cantonment Area Expansion at MCB Camp Pendleton - Alternative 1 (Page 3 of 3).									
113		Hp	Fuel	Load	Number	Hourly	Hours/	Daily	Total	Total
114	Construction Activity/Equipment Type	Rating	Type	Factor (1)	Active	Hp-Hrs	Day	Hp-Hrs	Days	Hp-Hrs
115	Pave Maintenance Road within Perimeter Fence (15)									
116	Compactive Roller	165	D	0.38	1	63	8	502	0.6	285
117	Grader	180	D	0.38	1	68	8	547	0.6	345
118	Loader	215	D	0.41	1	88	6	529	0.6	334
119	Paving Machine	200	D	0.50	1	100	8	800	0.4	305
120	Water Truck - 5000 Gallons	175	D	0.48	1	84	4	336	1.4	466
121	Haul Truck - Base (5)	NA	D	NA	10	NA	14	140	2.0	280
122	Haul Truck - Paving (5)	NA	D	NA	10	NA	10	100	2.0	200
123	Fugitive Dust (3)	NA	NA	NA	1	NA	8	NA	2.0	1.9
124	Paving Off-gassing (8)	NA	NA	NA	0.97	NA	NA	NA	NA	NA
125	Install Utilities (16)									
126	Backhoe	92	D	0.37	1	34	4	136	3	408
127	Compactive Roller	80	D	0.38	1	30	8	243	1	243
128	Trencher	75	D	0.48	1	36	8	288	3	864
129	Water Truck - 5000 Gallons	175	D	0.38	1	67	4	274	4	1,096
130	Supply Trucks (5)	NA	D	NA	70	NA	2	140	4	560
131	Fugitive Dust (3)	NA	NA	NA	0.1	NA	NA	NA	4	0.4
132	Install Perimeter Fence (17)									
133	Auger Drill	8	G	0.48	1	4	6	23	4	92
134	Loader	76	D	0.41	1	31	2	62	4	249
135	Supply Trucks (5)	NA	D	NA	70	NA	2	140	4	560
136	Fugitive Dust (3)	NA	NA	NA	0.1	NA	8	NA	4	0.4
137	Notes: (15) Equipment usages based on 1.0 acre of paved area.									
138	(16) Equipment usages based on underground installation of 1,400 feet of utility lines and construction experience judgement.									
139	(17) Equipment usages based on installation of 5,000 feet of fence and construction experience judgement.									

	L	M	N	O	P	Q	R	S	T	U
1	Table 1-2. Air Emission Factors for Equipment Associated with the MCTSSA Cantonment Area Expansion at MCB Camp Pendleton.									
2		Fuel	Emission Factors (Grams/Horsepower-Hour)							
3	Project Year/Source Type	Type	VOC	CO	NOx	SO2	PM10	PM2.5	CO2	Reference
4	Year 2013									
5	Off-Road Equipment - 26-50 Hp	D	1.43	3.30	5.78	0.004	0.58	0.54	568	(1)
6	Off-Road Equipment - 51-120 Hp	D	0.64	2.13	6.95	0.004	0.54	0.50	568	(1)
7	Off-Road Equipment - 121-175 Hp	D	0.48	1.81	6.58	0.004	0.34	0.32	568	(1)
8	Off-Road Equipment - 176-250 Hp	D	0.37	0.67	6.13	0.004	0.24	0.22	568	(1)
9	Off-Road Equipment - 251-500 Hp	D	0.30	0.68	4.99	0.003	0.19	0.17	568	(1)
10	Gasoline-powered Equipment <250 Hp	G	0.59	29.86	1.51	0.27	0.06	0.06	710	(2)
11	On-road Truck - Idle (Gms/Hr)	D	10.60	44.59	90.79	0.05	1.22	1.12	5,472	(3)
12	On-road Truck - 5 mph (Gms/Mi)	D	3.24	4.80	17.00	0.04	0.66	0.61	2,600.00	(4)
13	On-road Truck - 25 mph (Gms/Mi)	D	0.33	1.20	6.09	0.04	0.19	0.17	1,298.07	(4)
14	On-road Truck - 55 mph (Gms/Mi)	D	0.17	0.78	4.90	0.04	0.19	0.18	1,023.48	(4)
15	On-Road Trucks - Composite (Gms/Mi)	D	0.37	1.11	5.86	0.04	0.22	0.20	1,184.68	(5)
16	Architectural Coatings	-	0.01							(6)
17	Fugitive Dust (Lbs/acre-day)	-					27.50	2.75		(7)
18	Paving Off-gassing	-	2.62							(8)
19	Notes: (1) Emissions factors developed for calendar year 2013 off-road composite equipment fleet with the use of the ARB In-Use Off-Road Equipment Inventory Model (ARB 2013),									
20	except CO emissions factors obtained from the Urbemis 2007 model and based on tractors/loaders/backhoes (Jones&Stokes Ass. 2007).									
21	(2) Data for new phase 1 engines (year 1997) from NONROAD2008 model (USEPA 2010).									
22	(3) Idling emission factors developed from EMFAC2007 (ARB 2006). Units in grams/hour.									
23	(4) Generated with the use of the EMFAC2011 model for calendar year 2013 for truck fleet in San Diego County (ARB 2013). Assumes annual average temperatures.									
24	Units in grams/mile.									
25	(5) Composite factors based on a round trip of 5% at 5 mph, 30% at 25 mph, and 65% at 55 mph. Units in grams/mile. Although									
26	not shown in these calculations, emissions from 5 minutes of idling mode included for each truck round trip.									
27	(6) Units in lbs/square feet of applied coating from CalEEMod version 2013.2 (CAPCOA 2013) and an average VOC content of flat coatings (250 gm/liter) from SDCAPCD Rule 67.									
28	(7) Units in lbs/acre-day from section 11.2.3 of AP-42 (USEPA 1995). Emissions reduced by 50% from uncontrolled levels to simulate implementation of									
29	best management practices (BMPs) for fugitive dust control.									
30	(8) Units in lbs/acre of paved area from CalEEMod version 2013.2 (CAPCOA 2013).									

	W	X	Y	Z	AA	AB	AC	AD
1	Table 1-3. Emissions for MCTSSA Cantonment Area Expansion at MCB Camp Pendleton - Alternative 1 (Page 1 of 3).							
2		<i>Total Emissions (Tons)</i>						
3	<i>Construction Activity/Equipment Type</i>	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SO2</i>	<i>PM10</i>	<i>PM2.5</i>	<i>CO2</i>
4	Site Preparation/Light Grading							
5	Backhoe	0.001	0.003	0.012	0.000	0.001	0.001	1.1
6	Bulldozer - D8	0.001	0.003	0.021	0.000	0.001	0.001	2.4
7	Compactive Roller	0.002	0.009	0.034	0.000	0.002	0.002	2.9
8	Grader	0.001	0.002	0.019	0.000	0.001	0.001	1.8
9	Loader	0.002	0.003	0.025	0.000	0.001	0.001	2.3
10	Scraper	0.001	0.002	0.018	0.000	0.001	0.001	1.7
11	Water Truck - 5000 Gallons	0.004	0.015	0.056	0.000	0.003	0.003	4.8
12	Fugitive Dust					0.79	0.08	
13	Subtotal	0.01	0.04	0.19	0.000	0.79	0.09	17.0
14	Construct Maintenance Facility							
15	Air Compressor - 100 CFM	0.011	0.552	0.028	0.005	0.001	0.001	13.1
16	Concrete/Industrial Saw	0.022	1.128	0.057	0.010	0.002	0.002	26.8
17	Crane	0.013	0.024	0.215	0.000	0.008	0.008	19.9
18	Forklift	0.018	0.059	0.191	0.000	0.015	0.014	15.6
19	Generator	0.032	0.073	0.128	0.000	0.013	0.012	12.6
20	Concrete Trucks	0.000	0.001	0.006	0.000	0.000	0.000	1.2
21	Supply Truck	0.001	0.002	0.009	0.000	0.000	0.000	1.8
22	Fugitive Dust					0.246	0.025	
23	Architectural Coatings	0.28						
24	Subtotal	0.37	1.84	0.63	0.02	0.29	0.06	91.1
25	Construct Two C4I Test Labs/Office Buildings							
26	Air Compressor - 100 CFM	0.002	0.089	0.004	0.001	0.000	0.000	2.1
27	Concrete/Industrial Saw	0.004	0.182	0.009	0.002	0.000	0.000	4.3
28	Crane	0.002	0.004	0.035	0.000	0.001	0.001	3.2
29	Forklift	0.003	0.009	0.031	0.000	0.002	0.002	2.5
30	Generator	0.005	0.012	0.021	0.000	0.002	0.002	2.0
31	Concrete Trucks	0.000	0.000	0.001	0.000	0.000	0.000	0.2
32	Supply Truck	0.000	0.000	0.001	0.000	0.000	0.000	0.3
33	Fugitive Dust					0.006	0.001	
34	Architectural Coatings	0.06						
35	Subtotal	0.08	0.30	0.10	0.00	0.01	0.01	14.7
36	Pave Vehicle Parking Area and Sidewalk							
37	Compactive Roller	0.000	0.000	0.001	0.000	0.000	0.000	0.1
38	Grader	0.000	0.000	0.001	0.000	0.000	0.000	0.1
39	Loader	0.000	0.000	0.001	0.000	0.000	0.000	0.1
40	Paving Machine	0.000	0.000	0.001	0.000	0.000	0.000	0.1
41	Water Truck - 5000 Gallons	0.000	0.001	0.004	0.000	0.000	0.000	0.4
42	Haul Truck - Base	0.000	0.001	0.004	0.000	0.000	0.000	0.7
43	Haul Truck - Paving	0.000	0.000	0.003	0.000	0.000	0.000	0.5
44	Fugitive Dust					0.017	0.002	
45	Paving Off-gassing	0.001						
46	Subtotal	0.00	0.00	0.02	0.00	0.02	0.00	2.1
47	Construct Radar Pads							
48	Backhoe	0.001	0.002	0.007	0.000	0.000	0.000	0.6
49	Loader	0.000	0.001	0.007	0.000	0.000	0.000	0.7
50	Concrete Trucks	0.000	0.000	0.001	0.000	0.000	0.000	0.2
51	Supply Truck	0.000	0.000	0.000	0.000	0.000	0.000	0.1
52	Fugitive Dust					0.004	0.000	
53	Subtotal	0.00	0.00	0.02	0.00	0.00	0.00	1.5

	W	X	Y	Z	AA	AB	AC	AD
56	Table 1-3. Emissions for MCTSSA Cantonment Area Expansion at MCB Camp Pendleton - Alternative 1 (Page 2 of 3).							
57		<i>Total Emissions (Tons)</i>						
58	<i>Construction Activity/Equipment Type</i>	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SO2</i>	<i>PM10</i>	<i>PM2.5</i>	<i>CO2</i>
59	Construct Internal Access Road							
60	Compactive Roller	0.001	0.004	0.015	0.000	0.001	0.001	1.3
61	Grader	0.000	0.001	0.004	0.000	0.000	0.000	0.3
62	Loader - 966	0.000	0.000	0.004	0.000	0.000	0.000	0.3
63	Water Truck - 5000 Gallons	0.000	0.002	0.006	0.000	0.000	0.000	0.5
64	Fugitive Dust					0.021	0.002	
65	Subtotal	0.00	0.01	0.03	0.00	0.02	0.00	2.5
66	Pave Internal Access Road							
67	Compactive Roller	0.000	0.000	0.001	0.000	0.000	0.000	0.1
68	Grader	0.000	0.000	0.001	0.000	0.000	0.000	0.1
69	Loader	0.000	0.000	0.001	0.000	0.000	0.000	0.1
70	Paving Machine	0.000	0.000	0.001	0.000	0.000	0.000	0.1
71	Water Truck - 5000 Gallons	0.000	0.001	0.004	0.000	0.000	0.000	0.4
72	Haul Truck - Base	0.000	0.000	0.002	0.000	0.000	0.000	0.4
73	Haul Truck - Paving	0.000	0.000	0.001	0.000	0.000	0.000	0.3
74	Fugitive Dust					0.017	0.002	
75	Paving Off-gassing	0.001						
76	Subtotal	0.00	0.00	0.01	0.00	0.02	0.00	1.4
77	Construct Vehicle Test Track							
78	Bulldozer - D8	0.001	0.002	0.012	0.000	0.000	0.000	1.3
79	Compactive Roller	0.002	0.008	0.029	0.000	0.002	0.001	2.5
80	Dump Truck	0.000	0.000	0.003	0.000	0.000	0.000	0.3
81	Grader	0.001	0.002	0.008	0.000	0.000	0.000	0.7
82	Loader - 966	0.000	0.001	0.007	0.000	0.000	0.000	0.7
83	Water Truck - 5000 Gallons	0.001	0.003	0.012	0.000	0.001	0.001	1.0
84	Fugitive Dust					0.041	0.004	
85	Subtotal	0.00	0.02	0.07	0.00	0.04	0.01	6.6
86	Pave Vehicle Test Track							
87	Compactive Roller	0.000	0.000	0.001	0.000	0.000	0.000	0.1
88	Grader	0.000	0.000	0.001	0.000	0.000	0.000	0.1
89	Loader	0.000	0.000	0.001	0.000	0.000	0.000	0.1
90	Paving Machine	0.000	0.000	0.001	0.000	0.000	0.000	0.1
91	Water Truck - 5000 Gallons	0.000	0.001	0.002	0.000	0.000	0.000	0.2
92	Haul Truck - Base	0.000	0.000	0.002	0.000	0.000	0.000	0.4
93	Haul Truck - Paving	0.000	0.000	0.001	0.000	0.000	0.000	0.1
94	Fugitive Dust					0.017	0.002	
95	Paving Off-gassing	0.001						
96	Subtotal	0.00	0.00	0.01	0.00	0.02	0.00	1.2
97	Construct Maintenance Road within Perimeter Fence							
98	Compactive Roller	0.001	0.004	0.015	0.000	0.001	0.001	1.3
99	Grader	0.000	0.001	0.006	0.000	0.000	0.000	0.5
100	Loader - 966	0.000	0.000	0.004	0.000	0.000	0.000	0.3
101	Water Truck - 5000 Gallons	0.000	0.002	0.006	0.000	0.000	0.000	0.5
102	Fugitive Dust					0.028	0.003	
103	Subtotal	0.00	0.01	0.03	0.00	0.03	0.00	2.6

	W	X	Y	Z	AA	AB	AC	AD
106	Table 1-3. Emissions for MCTSSA Cantonment Area Expansion at MCB Camp Pendleton - Alternative 1 (Page 3 of 3).							
107		<i>Total Emissions (Tons)</i>						
108	<i>Construction Activity/Equipment Type</i>	<i>VOC</i>	<i>CO</i>	<i>NOx</i>	<i>SO2</i>	<i>PM10</i>	<i>PM2.5</i>	<i>CO2</i>
109	<i>Pave Maintenance Road within Perimeter Fence</i>							
110	Compactive Roller	0.000	0.001	0.002	0.000	0.000	0.000	0.2
111	Grader	0.000	0.000	0.002	0.000	0.000	0.000	0.2
112	Loader	0.000	0.000	0.002	0.000	0.000	0.000	0.2
113	Paving Machine	0.000	0.000	0.002	0.000	0.000	0.000	0.2
114	Water Truck - 5000 Gallons	0.000	0.001	0.003	0.000	0.000	0.000	0.3
115	Haul Truck - Base	0.000	0.000	0.002	0.000	0.000	0.000	0.4
116	Haul Truck - Paving	0.000	0.000	0.001	0.000	0.000	0.000	0.3
117	Fugitive Dust					0.027	0.003	
118	Paving Off-gassing	0.001						
119	Subtotal	0.00	0.00	0.02	0.00	0.03	0.00	1.7
120	<i>Install Utilities</i>							
121	Backhoe	0.000	0.001	0.003	0.000	0.000	0.000	0.3
122	Compactive Roller	0.000	0.001	0.002	0.000	0.000	0.000	0.2
123	Trencher	0.001	0.002	0.007	0.000	0.001	0.000	0.5
124	Water Truck - 5000 Gallons	0.001	0.002	0.008	0.000	0.000	0.000	0.7
125	Supply Truck	0.000	0.001	0.004	0.000	0.000	0.000	0.7
126	Fugitive Dust					0.000	0.000	
127	Subtotal	0.00	0.01	0.02	0.00	0.00	0.00	2.4
128	<i>Install Perimeter Fence</i>							
129	Auger Drill	0.000	0.003	0.000	0.000	0.000	0.000	0.1
130	Loader	0.000	0.001	0.002	0.000	0.000	0.000	0.2
131	Supply Truck	0.000	0.001	0.004	0.000	0.000	0.000	0.7
132	Fugitive Dust					0.000	0.000	
133	Subtotal	0.00	0.00	0.01	0.00	0.00	0.00	1.0
134	Project Total	0.48	2.23	1.15	0.02	1.27	0.18	145.6

Table 1-4. Summary of Emissions from Construction of the MCTSSA Cantonment Area Expansion at MCB Camp Pendleton - Alternative 1

Year/Construction Activity	Tons						
	VOC	CO	NOx	SOx	PM10	PM2.5	CO2
2013							
Site Preparation/Light Grading	0.01	0.04	0.19	0.00	0.79	0.09	17.01
Construct Maintenance Facility	0.37	1.84	0.63	0.02	0.29	0.06	91.12
Construct Two C4I Test Labs/Office Buildings	0.08	0.30	0.10	0.00	0.01	0.01	14.67
Pave Vehicle Parking Area and Sidewalk	0.00	0.00	0.02	0.00	0.02	0.00	2.05
Construct Radar Pads	0.00	0.00	0.02	0.00	0.00	0.00	1.46
Construct Internal Access Road	0.00	0.01	0.03	0.00	0.02	0.00	2.46
Pave Internal Access Road	0.00	0.00	0.01	0.00	0.02	0.00	1.40
Construct Vehicle Test Track	0.00	0.02	0.07	0.00	0.04	0.01	6.59
Pave Vehicle Test Track	0.00	0.00	0.01	0.00	0.02	0.00	1.17
Construct Maintenance Road within Perimeter Fence	0.00	0.01	0.03	0.00	0.03	0.00	2.63
Pave Maintenance Road within Perimeter Fence	0.00	0.00	0.02	0.00	0.03	0.00	1.71
Install Utilities	0.00	0.01	0.02	0.00	0.00	0.00	2.37
Install Perimeter Fence	0.00	0.00	0.01	0.00	0.00	0.00	0.96
2013 Subtotal	0.48	2.23	1.15	0.02	1.27	0.18	145.60

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