CITY OF SAN DIEGO

Public Utilities Department

Wastewater Treatment and Disposal Division

Operation Support Group

Biosolids Certification Package
April 1, 2019 – April 30, 2019

Contents:

Title 22 analysis page.

40 CFR 503 certification for inorganic pollutant concentrations and limits.

Metropolitan Biosolids Center "Class B" Certification statement as per U.S. EPA 40 CFR Part 503 Standards For the Use and Disposal of Bulk Sewage Sludge.

Point Loma Wastewater Treatment Plant "Class B" Certification statement as per U.S. EPA 40 CFR Part 503 Standards For the Use and Disposal of Bulk Sewage Sludge.

Fractional Volatile Solids Reduction (FVSR) and VAR Certification statement.
- FVSR calculations page
- Raw and digested TVS data page

CITY OF SAN DIEGO
PUBLIC UTITLITIES DEPARTMENT

BIOSOLIDS CERTIFICATION STATEMENT
for
MEETING PATHOGEN REDUCTION REQUIREMENTS
April 1, 2019 – April 30, 2019

The following pathogens reduction requirement has been prepared in accordance with U.S. Environmental Protection Agency 40 CFR Part 503 Standards for the use and disposal of bulk sewage sludge from the Metro Biosolids Center Operated by the City of San Diego, Public Utilities Department.

503.17 (a)(4)(i)(C) - A description of how the Class B pathogens requirement in 503.32 (b) (3) is met.

At the City of San Diego Metropolitan Biosolids Center sludge undergoes anaerobic, high rate, mesophilic digestion that meets 503 regulations for detention time and temperature.

503.17 (a)(4)(i)(B) - Certification statement for meeting pathogens reduction requirements.

I certify, under penalty of law, that the Class B pathogen requirements in 503.32 (b)(3) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

For The City of San Diego
Public Utilities Department

By: _____ Date 6/5/19

Richard Pitchford
Superintendent
Wastewater Treatment and Disposal Division
Metropolitan Biosolids Center

CITY OF SAN DIEGO
PUBLIC UTILITIES DEPARTMENT

BIOSOLIDS CERTIFICATION STATEMENT
for
MEETING PATHOGEN REDUCTION REQUIREMENTS
April 1, 2019 – April 30, 2019

The following pathogens reduction requirement has been prepared in accordance with U.S. Environmental Protection Agency 40 CFR Part 503 Standards for the use and disposal of bulk sewage sludge from the Metro Biosolids Center Operated by the City of San Diego, CA, Public Utilities Department.

503.17 (a)(4)(i)(C) - A description of how the Class B pathogens requirement in 503.32 (b) (3) is met.

At the City of San Diego Point Loma Wastewater Treatment Plant sludge undergoes anaerobic, high rate, mesophilic digestion that meets 503 regulations for detention time and temperature.

503.17 (a)(4)(i)(B) - Certification statement for meeting pathogens reduction requirements.

I certify, under penalty of law, that the Class B pathogen requirements in 503.32 (b)(3) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

For The City of San Diego
Public Utilities Department

By: David Marlow Date 6-6-19

David Marlow
Superintendent
Wastewater Treatment and Disposal Division
Point Loma Wastewater Treatment Plant

CITY OF SAN DIEGO
PUBLIC UTILITIES DEPARTMENT
CERTIFICATION STATEMENT

In Compliance with
U.S. Environmental Protection Agency 40 CFR Part 503 Standards
For the Use and Disposal of Bulk Sewage Sludge from the
Metro Biosolids Center
Operated by the City of San Diego Public Utilities Department

VECTOR ATTRACTION REDUCTION

The daily fractional volatile solids reduction (FVSR) values were calculated using the Van Kleck Equation and raw and digested sludge volatile solids for the month of April 2019 from locations based on the following information from Operations staff:

All sludge sent to Metro Biosolids Center (MBC) from the Pt. Loma WWTP is pumped from Digester 7.
Only North City Water Reclamation Plant (NCWRP) raw sludge is going to MBC digesters.
The MBC thickened sludge samples are representative of the raw sludge from NCWRP.
MBC is using Digester No.1 for sludge processing.

The following determinations of volatile solids were done using approved methods by a laboratory certified by the State of Arizona (Cert. No. AZ0783)

59.3 % Average Volatile Solids Reduction for the Pt. Loma WTP sludge digestion process.
64.5 % Average Volatile Solids Reduction for the sludge MBC treats from the NCWRP.

Both streams **do** / ~~do not~~ meet 38% FVSR criteria.

Environmental Chemistry Laboratory Senior Chemist — Date 5/30/2019

I certify that the sludge samples taken and used in these determinations were taken and handled under my direction and supervision using approved methods and are representative samples of actual operational conditions.

Wastewater Treatment Superintendent, Metro Biosolids Center (MBC) — Date 6/5/19
Wastewater Treatment Superintendent, Pt. Loma Wastewater Treatment Plant — Date 6-6-19

CERTIFICATION STATEMENT
VECTOR ATTRACTION REQUIREMENTS

I certify, under penalty of law, the vector attraction reduction requirement in Paragraph 503.33 (b) (1) which states that:
The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38 percent, has been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the vector reduction requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.

By:

Chief Plant Operator
Wastewater Treatment and Disposal — Date 6/6/19

Y:\EMTS\41.SECTIONS\WCS\REPORTS\MBC\VAR\2019\FVSR APR 2019.DOCX

FVSR (Fractional Volatile Solids Reduction)

$$FVSR = \frac{VS_p - VS_b}{VS_p - (VS_p * VS_b)} = \frac{Vol.solidsRaw - Vol.solids\ Digested}{Vol.solids\ Raw - (Vol.solids\ Raw * Vol.solids\ Digested)}$$

Where: VS_p = Volatile Solids Feed Sludge (RAW SLUDGE),
VS_b = Volatile Solids Digested Sludge (DIG SLUDGE), currently only digester 7 is used for the calculation.

Volatile Solids (VS) is expressed as fractional numbers.

Average Volatile Solids for April 2019

Average %TVS Digested Sludge (Digester 7) for the month.	Average Raw (feed) sludge %TVS for the month	Calculated FVSR (%)
CA Lab data used	CA Lab data used	CA Lab data used
60.8	79.2	59.3%

Average Volatile Solids for April 2019

Average %TVS Digested Sludge (MBC Dig 1) for the month.	Average Raw (feed) sludge (MBC_TSBTC) %TVS for the month	Calculated FVSR (%)
CA Lab data used	CA Lab data used	CA Lab data used
66.6	84.9	64.5%

Y:\EMTS\41.Sections\WCS\GROUPS\PUBLIC\METALS\TS_VS_DSLDG\19094TS14

ALVARADO WASTEWATER CHEMISTRY LAB.
ARIZONA DH No. AZ0783
Total and Volatile Solids

BATCH ID: 19094TS14
ANALYSIS: TS/VS_SLDG
ANALYST: TJCANNON

ANALYSIS DATE: 4/4/2019

PROTOCOL: SM2540G/EPA160.4
MDL(%): 0.24
LCS TRUE VALUE: 4

SAMPLE ID	SAMPLE DATE	SOURCE	TEST TYPE	DISH ID	TARE WT grams	WET WT grams	INITIAL WT (g)	HOUR	FINAL WT (g)	HOUR	% TS	COMMENTS
Standard Methods 2540B for the Determination of Residue (%TS)												
P1087026	4/4/2019	LAB	BLNK	6	72.36	112.85	72.36	7:15 AM	72.36	9:56 AM	ND	
P1087027	4/4/2019	LAB	LCS	O	70.46	119.34	72.39	7:15 AM	72.38	9:56 AM	3.9	%REC= 97.5
P1086047	4/2/2019	MBC_DIG1		XM	81.95	112.73	82.53	7:15 AM	82.53	9:56 AM	1.9	
P1086047	4/2/2019	MBC_DIG1	DUP	LA	79.23	115.51	79.91	7:15 AM	79.91	9:56 AM	1.9	%RPD =0
P1086046	4/2/2019	MBC_TSBTC		S7	75.17	117.74	76.69	7:15 AM	76.69	9:56 AM	3.6	
P1086045	4/2/2019	PLDIG7		PO	77.93	110.57	78.67	7:15 AM	78.67	9:56 AM	2.3	
P1086044	4/2/2019	RAW COMP		CR	80.46	122.69	81.95	7:15 AM	81.95	9:56 AM	3.5	
						FINAL WT (g)						
EPA Method 160.4 for %TVS at 550°C					TARE WT (g)	Total Solids	INITIAL WT (g)	HOUR	FINAL WT (g)	HOUR	% TVS	
P1087026	4/4/2019	LAB	BLNK	6	72.36	72.36						
P1087027	4/4/2019	LAB	LCS	O	70.46	72.38						
P1086047	4/2/2019	MBC_DIG1		XM	81.95	82.53	82.14	1:47 PM	82.15	9:51 AM	65.5	
P1086047	4/2/2019	MBC_DIG1	DUP	LA	79.23	79.91	79.45	1:47 PM	79.45	9:51 AM	67.6	%RPD =3.2
P1086046	4/2/2019	MBC_TSBTC		S7	75.17	76.69	75.4	1:47 PM	75.4	9:51 AM	84.9	
P1086045	4/2/2019	PLDIG7		PO	77.93	78.67	78.21	1:47 PM	78.22	9:51 AM	60.8	
P1086044	4/2/2019	RAW COMP		CR	80.46	81.95	80.76	1:47 PM	80.77	9:51 AM	79.2	

1st Entry_____ 2nd Entry_____ Final Entry_____

WCL-T-0285.2 January 19, 2010

POINT LOMA WASTEWATER TREATMENT PLANT
CALIFORNIA HAZARDOUS WASTE IDENTIFICATION TESTS (Title 22)
Metro Biosolids Center Dewatered Sludge
From 01-APR-2019 to 30-APR-2019

Source: MBCDEWCN
Sample ID: P1087524
Sample Date: 30-APR-19

Constituent	MDL.	Units	Total Dry Wt. mg/Kg	Total Wet Wt. mg/Kg	TTLC Wet Wt. mg/Kg	W.E.T. Wet Wt. mg/L	STLC Wet Wt. mg/L	40 CFR 503 Limits ** mg/Kg	CA Health & Safety code Limits *** mg/Kg
Antimony	0.4	MG/KG	6.29	1.83	500	*	15.00		
Arsenic	0.31	MG/KG	3.19	0.93	500	*	5.00	41	
Barium	0.46	MG/KG	344	100	10000	*	100.00		
Beryllium	0.1	MG/KG	ND	ND	75	*	0.75		
Cadmium	0.1	MG/KG	0.82	0.239	100	*	1.00	39	
Chromium (VI)			NA		500	NA	5.00		
Chromium	0.1	MG/KG	47.5	13.8	2500	*	560.00	1,200	
Cobalt	0.1	MG/KG	3.34	0.972	8000	*	80.00		
Copper	2.4	MG/KG	600	175	2500	*	25.00	1,500	2,500
Lead	0.2	MG/KG	13.2	3.8	1000	*	5.00	300	350
Mercury	0.059	MG/KG	0.61	0.178	20	*	0.20	17	
Molybdenum	0.1	MG/KG	14.9	4.32	3500	*	350.00		
Nickel	0.6	MG/KG	20.9	6.08	2000	*	20.00	420	2,000
Selenium	0.49	MG/KG	4.99	1.45	100	*	1.00	100	
Silver	0.27	MG/KG	3.65	1.06	500	*	5.00		
Thallium	0.2	MG/KG	0.11	0.031	700	*	7.00		
Vanadium	0.1	MG/KG	23.2	6.74	2400	*	24.00		
Zinc	7.7	MG/KG	890	259	5000	*	250.00	2,800	
Fluoride	1	MG/KG	33.1	9.63	18000	*	180.00		
Sulfides-Reactive	11	MG/KG	17.0	5.0					
Sulfides-Total	500	MG/KG	5050	1470					
Total Solids		WT%	29.1						
Total Volatile Solids		WT%	60.4						
pH		PH	7.98		>2 - <12				
Ammonia-N	28	MG/KG	7300						
Nitrite Nitrate Calc		MG/KG	27.1						
Organic Nitrogen Calc.		MG/KG	42500						
Total Kjeldahl Nitrogen		MG/KG	49800						
Aldrin	0.0006	MG/KG	ND	ND	1.4	*	0.14		
Chlordanes	0.0016	MG/KG	0.062	0.0181	2.5	*	0.25		
DDT, DDE, DDD	0.0011	MG/KG	0.03	0.008	1.0	*	0.10		
Dieldrin	0.0006	MG/KG	0.01	0.003	8.0	*	0.80		
2,4-D		MG/KG	NA	NA	100	NA	10.00		
Endrin	0.0011	MG/KG	ND	ND	0.2	*	0.02		
Heptachlor	0.0004	MG/KG	ND	ND	4.7	*	0.47		
Kepone			NA	NA	21	NA	2.10		
Lindane	0.91	MG/KG	ND	ND	4.0	*	0.40		
BHC, Total	0.0009	MG/KG	ND	ND	4.0	*	0.40		
Methoxychlor	0.0007	MG/KG	ND	ND	100	*	10.00		
Mirex	0.0012	MG/KG	ND	ND	21	*	2.10		
Pentachlorophenol			NA	NA	17	NA	1.70		
PCBs (Arochlors)	2.3	MG/KG	ND	ND	50	*	5.00		
Toxaphene	0.17	MG/KG	ND	ND	5	*	0.50		
Trichloroehene	0.009	MG/KG	ND	ND	2040	*	204.00		
2,4,5-TP			NA	NA	10	NA	1.00		

On the basis of these analyses, I certify that this dried sludge is non-hazardous as defined by California Code, Title 22, Section 66699. All determinations were done using approved methods by laboratories certified by the State of Arizona (Cert. No. AZ0783).

Elvira Mercado, Senior Chemist, Environmental Chemistry Laboratory

TTLC = Total Threshold Limit Concentration.
STLC = Soluble Threshold Limit Concentration.
W.E.T. = Waste Extraction Technique.
* = The total wet concentration is less than 10 times the STLC. Therefore, by definition, this substance is present in concentration that is less than the limit for hazardous wastes.
** = Limits are in mg/Kg (dry weight) based on 40 CFR part 503.13 Table 3 "Limits for Land Application".
*** = The California State Health and Safety Code 25157.8 established a lower limit for Lead.
NA = Not Analyzed, ND= Not Detected, NS= Not Sampled, NR= Not Required
MDL = Method Detection Limit (mg/Kg per dry weight; except for pH and Total and Volatile Solids)
MBCDEWCN = Metro Biosolids Center Dewatered Centrifuged Sludge.

CERTIFICATION STATEMENT
In Compliance With
U.S. Environmental Protection Agency 40 CFR Part 503 Standards
For the Use and Disposal of Bulk Sewage Sludge from the
Metro Biosolids Center
Operated by the
City of San Diego Public Utilities Department

Monthly Sludge Composite Certification - *Centrifuge Dewatered Sludge*

I. INORGANIC POLLUTANT CONCENTRATIONS: The results of analyses below are for a composite sample of daily centrifuged dewatered sludge samples taken from the centrifuges over the calendar month of April 2019. All analyses were performed by the City of San Diego's Environmental Chemistry Services Laboratory using methods certified by the State of Arizona (Cert. No. AZ0783).

Metals from Table 3 of Paragraph 503.13†
(All concentrations in dry weight)

Parameter	Value	Units	503 Limit	Units
Arsenic	3.19	mg/Kg	41	mg/Kg
Cadmium	0.82	mg/Kg	39	mg/Kg
Chromium	47.5	mg/Kg	1,200	mg/Kg
Copper	600	mg/Kg	1,500	mg/Kg
Lead	13.2	mg/Kg	300	mg/Kg
Mercury	0.61	mg/Kg	17	mg/Kg
Molybdenum	14.9	mg/Kg	75	mg/Kg^
Nickel	20.9	mg/Kg	420	mg/Kg
Selenium	4.99	mg/Kg	100	mg/Kg
Zinc	890	mg/Kg	2,800	mg/Kg
Total Nitrogen#	4.98	Wt %		
Date of Sample	30-April-2019			
Total Solids	29.1	Wt %		
Volatile Solids	60.4	Wt %		

† Also conforms to Table 2-Monthly Average Pollutant Concentration of the Arizona Administrative Code Title 18, Chapter 9.
^ Limits for Molybdenum taken from 2009 version of 40 CFR part 503.13 Table 1, Ceiling Concentrations
# Value is a sum calculation of Total kjeldahl nitrogen, Nitrate as N and Nitrite as N.

Based on this month's analysis and the results of analyses of monthly sludge composite samples for the previous year, no parameter in the described sludge stream exceeds 40 CFR Part 503 Standards for land application.

Senior Chemist
Environmental Chemistry Laboratory,
California State ELAP Cert. No. 1609

5/31/19
Date

VAR CERT. Form
Revised 7/6/2000

Y:\EMTS\41.SECTIONS\WCS\REPORTS\PLWWTP\MONTHS\2019\04.APR\MBC_503RPT_AZ.DOCX

POINT LOMA WASTEWATER TREATMENT PLANT
CALIFORNIA HAZARDOUS WASTE IDENTIFICATION TESTS (Title 22)
Metro Biosolids Center Dewatered Sludge
From 01-APR-2019 to 30-APR-2019

Source: MBCDEWCN
Sample ID: P1087524
Sample Date: 30-APR-19

Constituent	MDL.	Units	Total Dry Wt. mg/Kg	Total Wet Wt. mg/Kg	TTLC Wet Wt. mg/Kg	W.E.T. Wet Wt. mg/L	STLC Wet Wt. mg/L	40 CFR 503 Limits ** mg/Kg	CA Health & Safety code Limits *** mg/Kg
Antimony#	18	MG/KG	ND	ND	500	*	15.00		
Arsenic	5.3	MG/KG	ND	ND	500	*	5.00	41	
Barium	2.6	MG/KG	370	108	10000	*	100.00		
Beryllium	0.88	MG/KG	ND	ND	75	*	.75		
Cadmium	0.9	MG/KG	ND	ND	100	*	1.00	39	
Chromium (VI)			NA	NA	500	NA	5.00		
Chromium	1.8	MG/KG	53	15.4	2500	*	560.00	1,200	
Cobalt	1.8	MG/KG	3.8	1.11	8000	*	80.00		
Copper#	3.9	MG/KG	720	210	2500	*	25.00	1,500	2,500
Lead	3.5	MG/KG	13	3.8	1000	*	5.00	300	350
Mercury	0.059	MG/KG	0.61	0.178	20	*	0.20	17	
Molybdenum	3.5	MG/KG	18	5.24	3500	*	350.00		
Nickel	3.5	MG/KG	28	8.15	2000	*	20.00	420	2,000
Selenium	6.0	MG/KG	ND	ND	100	*	1.00	100	
Silver	3.1	MG/KG	DNQ3.9	1.14	500	*	5.00		
Thallium#	18	MG/KG	ND	ND	700	*	7.00		
Vanadium	1.8	MG/KG	33	9.6	2400	*	24.00		
Zinc	8.8	MG/KG	1100	320	5000	*	250.00	2,800	
Fluoride	1	MG/KG	33.1	9.63	18000	*	180.00		
Sulfides-Reactive	11	MG/KG	17.0	5.0					
Sulfides-Total	500	MG/KG	5050	1470					
Total Solids		WT%	29.1						
Total Volatile Solids		WT%	60.4						
pH		PH	7.98		>2 - <12				
Ammonia-N	28	MG/KG	7300						
Nitrite Nitrate Calc		MG/KG	27.1						
Organic Nitrogen Calc.		MG/KG	42500						
Total Kjeldahl Nitrogen		MG/KG	49800						
Aldrin	0.0006	MG/KG	ND	ND	1.4	*	0.14		
Chlordanes	0.0016	MG/KG	0.062	0.0181	2.5	*	0.25		
DDT, DDE, DDD	0.0011	MG/KG	0.03	0.008	1.0	*	0.10		
Dieldrin	0.0006	MG/KG	0.01	0.003	8.0	*	0.80		
2,4-D		MG/KG	NA	NA	100	NA	10.00		
Endrin	0.0011	MG/KG	ND	ND	0.2	*	0.02		
Heptachlor	0.0004	MG/KG	ND	ND	4.7	*	0.47		
Kepone			NA	NA	21	NA	2.10		
Lindane	0.91	MG/KG	ND	ND	4.0	*	0.40		
BHC, Total	0.0009	MG/KG	ND	ND	4.0	*	0.40		
Methoxychlor	0.0007	MG/KG	ND	ND	100	*	10.00		
Mirex	0.0012	MG/KG	ND	ND	21	*	2.10		
Pentachlorophenol			NA	NA	17	NA	1.70		
PCBs (Arochlors)	2.3	MG/KG	ND	ND	50	*	5.00		
Toxaphene	0.17	MG/KG	ND	ND	5	*	0.50		
Trichloroehene	0.009	MG/KG	ND	ND	2040	*	204.00		
2,4,5-TP			NA	NA	10	NA	1.00		

On the basis of these analyses, I certify that this dried sludge is non-hazardous as defined by California Code, Title 22, Section 66699.

Elvira Mercado, Senior Chemist, Environmental Chemistry Laboratory

TTLC = Total Threshold Limit Concentration.
STLC = Soluble Threshold Limit Concentration.
W.E.T. = Waste Extraction Technique.
* = The total wet concentration is less than 10 times the STLC. Therefore, by definition,
. this substance is present in concentration that is less than the limit for hazardous wastes.
** = Limits are in mg/Kg (dry weight) based on 40 CFR part 503.13 Table 3 "Limits for Land Application".
*** = The California State Health and Safety Code 25157.8 established a lower limit for Lead.
NA = Not Analyzed, ND= Not Detected, NS= Not Sampled, NR= Not Required
MDL = Method Detection Limit (mg/Kg per dry weight; except for pH and Total and Volatile Solids)
MBCDEWCN = Metro Biosolids Center Dewatered Centrifuged Sludge.
# = Recovery of compound in matrix spike outside acceptance limits due to possible sample matrix interference.

CERTIFICATION STATEMENT
In Compliance With
U.S. Environmental Protection Agency 40 CFR Part 503 Standards
For the Use and Disposal of Bulk Sewage Sludge from the
Metro Biosolids Center
Operated by the
City of San Diego Public Utilities Department

Monthly Sludge Composite Certification - *Centrifuge Dewatered Sludge*

I. INORGANIC POLLUTANT CONCENTRATIONS: The results of analyses below are for a composite sample of daily centrifuged dewatered sludge samples taken from the centrifuges over the calendar month of April 2019.

Metals from Table 3 of Paragraph 503.13†
(All concentrations in dry weight)

Parameter	Value	Units	503 Limit	Units
Arsenic	ND	mg/Kg	41	mg/Kg
Cadmium	ND	mg/Kg	39	mg/Kg
Chromium	53	mg/Kg	1,200	mg/Kg
Copper#	720	mg/Kg	1,500	mg/Kg
Lead	13	mg/Kg	300	mg/Kg
Mercury	0.61	mg/Kg	17	mg/Kg
Molybdenum	18	mg/Kg	75	mg/Kg^
Nickel	28	mg/Kg	420	mg/Kg
Selenium	ND	mg/Kg	100	mg/Kg
Zinc	1100	mg/Kg	2,800	mg/Kg
Total Nitrogen*	4.98	Wt %		
Date of Sample	30-April-2019			
Total Solids	29.1	Wt %		
Volatile Solids	60.4	Wt %		

† Also conforms to Table 2-Monthly Average Pollutant Concentration of the Arizona Administrative Code Title 18, Chapter 9.
^ Limits for Molybdenum taken from 2009 version of 40 CFR part 503.13 Table 1, Ceiling Concentrations
* Value is a sum calculation of Total kjeldahl nitrogen, Nitrate as N and Nitrite as N.
6010B parameters (As, Cd, Cr, Cu, Pb, Mo, Ni, Se and Zn) were analyzed by TestAmerica.
Recovery of compound in matrix spike outside acceptance limits due to possible sample matrix interference.

Based on this month's analysis and the results of analyses of monthly sludge composite samples for the previous year, no parameter in the described sludge stream exceeds 40 CFR Part 503 Standards for land application.

Senior Chemist
Environmental Chemistry Laboratory,
California State ELAP Cert. No. 1609

5/30/19
Date

VAR CERT. Form
Revised 7/6/2000

Y:\EMTS\41.SECTIONS\WCS\REPORTS\PLWWTP\MONTHS\2019\04.APR\MBC_503RPT_CA.DOCX