City of Morro Bay and
Cayucos Sanitary District

OFFSHORE MONITORING AND REPORTING PROGRAM

RESIDUAL BIOSOLIDS CHEMICAL ANALYSIS RESULTS

SEPTEMBER 2010

Marine Research Specialists
3140 Telegraph Rd., Suite A
Ventura, California 93003

Report to

City of Morro Bay and
Cayucos Sanitary District

955 Shasta Avenue
Morro Bay, California 93442
(805) 772-6272

MONITORING AND REPORTING PROGRAM

ANNUAL BIOSOLIDS REPORT

CHEMICAL ANALYSIS RESULTS

SEPTEMBER 2010

Prepared by

Bonnie Luke
Douglas A. Coats

Marine Research Specialists

3140 Telegraph Rd., Suite A
Ventura, California 93003

Telephone: (805) 644-1180
Telefax: (805) 289-3935
E-mail: Marine@Rain.org

October 2010

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____

Mr. Rob Livick
Public Services Director
City of Morro Bay

_____

Date

marine research specialists
3140 Telegraph Rd., Suite A • Ventura, CA 93003 • 805-644-1180

Bruce Keogh
Wastewater Division Manager
City of Morro Bay
955 Shasta Avenue
Morro Bay, CA 93442

15 October 2010

Reference: Chemical Analysis Results for Biosolid Samples Collected in September 2010

Dear Mr. Keogh:

Enclosed are the results of chemical analyses conducted on a representative composite of biosolid samples collected from the drying beds on 14 September 2010. Also included in this report are pertinent QA/QC data, including chains of custody and analyses of method blanks and spikes. All analyses were conducted following the requirements set forth in Order Number R3-2008-0065 of NPDES discharge Permit Number CA0047881.

Based on a comparison between measured chemical concentrations in the composite sample and applicable State and Federal regulations, the biosolids amassed in 2010 are not considered hazardous waste, and are considered suitable for land application. A summary of the analytical results is presented in Table 1. As in prior years, only a few of the more than 150 compounds analyzed in the composite sample were detected at quantifiable concentrations, and all detected chemicals had concentrations well below the applicable standards. Bulk trace-metal concentrations measured in the September-2010 sample were comparable to concentrations measured in samples collected annually from 1999 through 2009.[1]

All trace-metal concentrations measured in the September-2010 sample were below Total Threshold Limit Concentrations (TTLC) that would designate them as hazardous under federal regulations.[2] Similarly, dry-weight concentrations for all the metals were well below the federally mandated limits, including the monthly limits for biosolids suitable for land application. One metal, copper, had a bulk wet-weight concentration that exceeded ten-times the Soluble Threshold Limit Concentration (STLC). As a result, the required waste extraction test (WET) was conducted on this compound. The test indicated that the soluble concentration of copper was more than two and a half times lower than the applicable STLC limit that would designate the biosolids as hazardous within the State of California.

Copper occurs naturally in the mineralogy of ambient sediments in the central coast region. As a result, its presence in bulk biosolid samples is not unexpected because sediments enter the collection system through runoff. Copper also enters the collection system through internal corrosion of household plumbing systems, which probably accounts for its consistent detection at low concentrations within effluent samples. As with other metals, the bulk copper concentration determined in the September-2010 sample was comparable to concentrations measured in biosolids samples collected historically. Although not required, a WET was also conducted for lead. The measured soluble lead concentration was an order of magnitude below its respective limit.

Four synthetic organic compounds, ethylbenzene, toluene, xylene, and bis(2-ethylhexyl) phthalate (BEHP), were also detected at low, but quantifiable concentrations in the September-2010 biosolid sample. There are no limits on these detected compounds specified in State and Federal regulations governing biosolids. Ethylbenzene, toluene and xylene comprise three of the four aromatic hydrocarbon compounds collectively known as BTEX (benzene, ethylbenzene, toluene and xylene). The BTEX compounds are primarily

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[1] Marine Research Specialists (MRS). 1999 through 2009. City of Morro Bay and Cayucos Sanitary District, Residual Biosolids Chemical Analysis Results. Prepared for the City of Morro Bay and Cayucos Sanitary District, Morro Bay, CA.

[2] U.S. Government Printing Office (USGPO). 1997b. Code of Federal Regulations. Environmental Protection. Standards for the use or disposal of Sewage Sludge, Land Application, Pollutant Limits. Chapter 40, Part 503, Subpart B. 1 July 1997 edition.

associated with gasoline contamination. Low concentrations of BTEX compounds are also occasionally detected within effluent samples. Bis(2-ethylhexyl) phthalate (BEHP) is a compound that has been consistently detected at low levels in effluent and biosolid samples collected over the past decade.[3] Bis(2-ethylhexyl) phthalate is added to plastic resins to soften them. However, it is not covalently bound to the resin so it slowly leaches out of plastic materials through evaporation and dissolution. Due to BEHP's mobility, high vapor pressure, and massive scale of production, this compound has become pervasive in the environment.

Other compounds listed in Table 1 further characterize the biosolids as required in the waste discharge requirements. Although testing for asbestos is no longer required as part of the NPDES permit, this test was included for completeness.

Please contact the undersigned if you have any questions regarding these results.

Sincerely,

Bonnie Luke
Program Manager
Enclosure (Five Report Copies)

[3] Section 2.2.12, Page 2-32 of the MBCSD 2009 Annual Report to the City of Morro Bay and Cayucos Sanitary District. Prepared by Marine Research Specialists, March 2010.

Table 1. Summary of Results for Biosolids Analyses

		Wet Weight				Dry Weight		
		Measured		Limit		Measured	Limit	
Constituent	**Units**	**Bulk [4]**	**WET [5]**	**STLC [6]**	**TTLC [7]**	**Bulk**	**Monthly [8]**	**Ceiling [9]**
Solids	%	83.8	— [10]	—	—	—	—	—
Total Dissolved Solids	ppm	—	5,600.	—	—	—	—	—
Cyanide	ppm	0.68	—	—	—	.81	—	—
Antimony	ppm	≈3.2[11]	—	15.	500.	≈3.8	—	—
Arsenic	ppm	4.2	—	5.	500.	5.0	41.	75.
Barium	ppm	430.	—	100.	10,000.	510.	—	—
Beryllium	ppm	≈0.23	—	0.75	75.	≈0.28	—	—
Boron	ppm	17.	—	—	—	20.	—	—
Cadmium	ppm	3.4	—	1.	100.	4.0	39.	85.
Chromium (Total)	ppm	45.	—	560.	2500.	54.	—	—
Chromium (Hexavalent)	ppm	ND	ND[12]	5.	500.	ND	—	—
Cobalt	ppm	3.8	—	80.	8,000.	4.6	1,500.	4,300.
Copper	ppm	580.[13]	9.3	25.	2,500.	690.	1,500.	4,300.
Lead	ppm	43.	0.38	5.	1,000.	52.	300.	840.
Mercury	ppm	0.69	—	0.2	20.	0.82	17.	57.
Molybdenum	ppm	21.	—	350.	3,500.	25.	—	—
Nickel	ppm	34.	—	20.	2,000.	41.	420.	420.
Selenium	ppm	6.2	—	1.	100.	7.4.	100.	100.
Silver	ppm	4.3	—	5.	500.	5.1	—	—
Thallium	ppm	ND	—	7.	700.	ND	—	—
Vanadium	ppm	27.	—	24.	2,400.	32.	—	—
Zinc	ppm	1,300.	—	250.	5,000.	1,500.	2,800.	7,500.
Asbestos	%	ND	—	—	1.	ND	—	—
Bis(2-ethylhexyl) phthalate	ppm	36.	—	—	—	43.	—	—
Ethylbenzene	mg/kg	0.033	—	—	—	0.040	—	—
Toluene	mg/kg	0.036	—	—	—	0.043	—	—
Xylenes	mg/kg	0.11	—	—	—	0.13	—	—
Hydrogen-Ion	pH	6.55	—	—	—	—	—	—

[4] The total wet-weight concentration (mg/kg) within a bulk biosolid sample consisting of the entire millable solid matrix rather than just the leachate.

[5] Waste Extraction Tests (WET) measure the soluble leachate (mg/L) or the extractable amount of a substance contained within a bulk sample of biosolids. A WET is indicated if the bulk wet-weight concentration of a contaminant in a biosolids sample exceeds ten times the STLC.

[6] Soluble Threshold Limit Concentrations (STLC) apply to the measured concentration in the liquid extract from a biosolid sample, as determined by a WET. Biosolids with leachate concentrations exceeding the STLC are classified as hazardous in the State of California as described in the California Code of Regulations (CCR), Title 22, Chapter 11: *Identification and Listing of Hazardous Waste*.

[7] Total Threshold Limit Concentrations (TTLC) apply to the total wet-weight concentration of a contaminant (mg/kg) within a bulk biosolid sample. Biosolids are designated as hazardous wastes in the State of California if measured bulk concentrations exceed the TTLC as described in the CCRs, *op. cit.*

[8] Federally mandated dry-weight limits imposed on biosolids suitable for application on agricultural land apply to monthly average concentrations as defined in Table 3 of the Code of Federal Regulations (CFRs). Environmental Protection. Standards for the use or disposal of Sewage Sludge, Land Application, Pollutant Limits. Chapter 40, Part 503, Subpart B [40 CFR §503.13(b)(1)].

[9] Federally mandated dry-weight ceiling concentrations above which biosolids are considered hazardous waste as defined in Table 1 of the CFRs, *op. cit.*

[10] "—" indicates that the measurement was not required or its limit was not specified.

[11] "≈" indicates the reported concentration was too low to be reliably quantified.

[12] "ND" indicates that the measurement was not detected in concentrations exceeding the method detection limit.

[13] The bulk concentration was greater than ten times the STLC and a WET was conducted.

		Wet Weight				Dry Weight		
		Measured		Limit		Measured	Limit	
Constituent	**Units**	**Bulk [4]**	**WET [5]**	**STLC [6]**	**TTLC [7]**	**Bulk**	**Monthly [8]**	**Ceiling [9]**
Phosphate	mg/kg	58,000.	—	—	—	92,000.	—	—
Ammonia	mg/kg	5,900.	—	—	—	7,100.	—	—
TKN	mg/kg	32,000.	—	—	—	39,000.	—	—
Organic Nitrogen[14]	mg/kg	26,100.	—	—	—	31,900.	—	—
Nitrate as NO_3	mg/kg	360.	—	—	—	420.	—	—
Oil & Grease	ppm	34,000.	—	—	—	41,000.	—	—

[14] The amount of nitrogen as reported by TKN excluding ammonia

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Date of Report: 10/06/2010

Doug Coats

Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

RE: Biosolids from MBWWTP
BC Work Order: 1012983
Invoice ID: B087873

Enclosed are the results of analyses for samples received by the laboratory on 9/15/2010. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Tina Green
Client Services Manager

Authorized Signature

Table of Contents

Case Narratives

Case Narrative for Work Order 1012983

2- CEVE can only be reported as a TIC (Tentatively Identified Compound). 2-CEVE was not found as a TIC for 10-1283-1

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949.

Chain of Custody Form

Report To: Client: Marine Research Specialists	Project #:
Attn: Doug Coats	Project Name: MBCSD Biosolids
Street Address: 3140 Telegraph Rd. Suite A	Global ID #:
City, State, Zip: Ventura, CA 93003	Sampler(s):
Phone: 805-644-1180	
Email Address: doug.coats@mrsenv.com	
Work Order# 10-12983	

Analysis Requested

Sample #	Description	Date Sampled	Time Sampled	Oil and Grease, EPA 1664	Semi-vol organics, EPA 8270	Pesticides/PCBs, EPA 8080	Volatile organics, EPA 8240	Total Hex Chrom, EPA 7196	Hex Chrom, mod. STLC 7196	Asbestos, EPA 600/R-94/134	WET tests*** on Pb and Cu	Sample Matrix: Soil	Sludge	Drinking Water	Ground water	Waste Water	Other	Notes
1	Composite Biosolids (cont'd from pg 1)	9/14/10	1000	✓	✓	✓	✓	✓	✓	✓	✓		✓					***STLC EPA 6010, but see notes on PDF!

Comments:
page 2 of 2

Please see attached PDFs for full explanations/details of individual analyses!

Are there any tests with holding times less than or equal to 48 hours? ☐ Yes ☐ No

CHK BY

DISTRIBUTION

SUB-OUT

Billing

☑ Same as above

Client:
Address:
City: State Zip
Attn:
PO#:

EDF Required? ☐ Yes ☐ No

Send Copy to State of CA? ☐ Yes ☐ No

Sample Disposal
☐ Return to Client ☐ Disposal by lab ☐ Archive Months

Special Reporting
☐ QC ☐ EDF ☐ Raw Data

Relinquished By	Date	Time	Relinquished By	Date	Time
1.	9/15/10	1415	1.	9-15-10	1415
2.	9-15-10	1900	2.	9/15/10	1900
3.			3.		

BC Laboratories, Inc. – 4100 Atlas Court Bakersfield, Ca. 93308 661.327-4911 Fax: 661.327-1918

Page 2 of 2

10-12983

Page 1 of 2

Analysis and Reporting for the Biosolids Sample from the Morro Bay Wastewater Treatment Plant to be collected on 14 September 2010[a]

Analysis[b]	Method
Level IIA QC	
Waste Extraction Tests on copper and lead[c] **(CCR Title 22, Article 11)**	STLC (6010)
Moisture	EPA 160.3 or BC
Total Dissolved Solids (TDS)	Modified Waste Extraction Test (STLC) EPA 160.1
CAM-17 Metals and Boron[d]:	
Antimony (Sb)	6010
Arsenic (As)	6010
Barium (Ba)	6010
Beryllium (Be)	6010
Boron (B)	6010
Cadmium (Cd)	6010
Total Chromium (Cr)	6010
Cobalt (Co)	6010
Copper (Cu)	6010
Lead (Pb)	6010
Mercury (Hg)	7471
Molybdenum (Mo)	6010
Nickel (Ni)	6010
Selenium (Se)	6010
Silver (Ag)	6010
Thallium (Tl)	6010
Vanadium (Va)	6010
Zinc (Zn)	6010
Total Kjeldahl Nitrogen (TKN)[d]	EPA 351.2
Ammonia as N[d]	EPA 350.1
Nitrate as NO_3[d]	EPA 300.0 or 353.2

[a] Please provide preliminary (pre-QC) results in BC LabNet as soon as they become available.

[b] Prior to analysis, homogenize the composite sample in the laboratory to ensure uniform distribution of multiple subsamples in sample container(s)

[c] Other metals may need to be WET tested depending on their bulk concentrations (e.g. mercury). Ms. Luke (805.289.3926) will determine the need for additional WET tests based on the preliminary bulk-chemistry analysis of metals.

[d] Sample results to be reported on an '*as received*' and '*dry basis*.'

[e] Modified-extraction, using DI water to extract not citric acid

1012983

Page 2 of 2

Analysis[b]	Method
Total Phosphate[d]	EPA 365.4
Total Cyanide[d]	EPA 9012
pH	EPA 9045 or 150.1
Oil and Grease	EPA 1664
Semi-volatile Organics	EPA 8270/625
Pesticides and PCBs	EPA 8080/608
Volatile Organics – Low Level; report all EPA priority pollutants not reported under other methods (including acrolein, acrylonitrile, and 2-chloroethyl vinyl ether)	EPA 8240/624
Hexavalent Chromium (Total)[d,]	EPA 7196
Hexavalent Chromium[e]	Modified Waste Extraction Test (STLC) EPA 7196
Asbestos	EPA 600/R-94/134-(100.2)

Chain of Custody and Cooler Receipt Form for 1012983 Page 4 of 4

BC LABORATORIES INC. SAMPLE RECEIPT FORM Rev. No. 12 06/24/08 Page 1 Of 1

Submission #: 10-12983

SHIPPING INFORMATION
Federal Express ☐ UPS ☐ Hand Delivery ☐
BC Lab Field Service ☒ Other ☐ (Specify)_____

SHIPPING CONTAINER
Ice Chest ☒ None ☐
Box ☐ Other ☐ (Specify)_____

Refrigerant: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☒ Comments:

All samples received? Yes ☒ No ☐ All samples containers intact? Yes ☒ No ☐ Description(s) match COC? Yes ☒ No ☐

COC Received ☒ YES ☐ NO

Emissivity: 0.95 Container: Other Thermometer ID: 1103

Temperature: A 20.1 °C / C 21 °C

Date/Time 9-15-10 1424

Analyst Init JDW

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL	ABCD									
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
300ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER										
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										

Comments:

Sample Numbering Completed By: JDW Date/Time: 9/15/10 2051

A = Actual / C = Corrected

(H:\DOCSWP60\LAB_DOCS\FORMS\SAMREC2.WPD)

Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 10/06/2010 13:26
Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1012983-01	**COC Number:**	---	**Receive Date:**	09/15/2010 19:00
	Project Number:	---	**Sampling Date:**	09/14/2010 10:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	Composite Biosolids	**Sample Matrix:**	Solids
	Sampled By:	---		

Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 10/06/2010 13:26
Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Organochlorine Pesticides and PCB's (EPA Method 8080)

BCL Sample ID: 1012983-01 | **Client Sample Name:** Composite Biosolids, 9/14/2010 10:00:00AM

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Aldrin	ND	ND	mg/kg	0.0050	0.00026	EPA-8080	ND	A10	1
alpha-BHC	ND	ND	mg/kg	0.0050	0.0014	EPA-8080	ND	A10	1
beta-BHC	ND	ND	mg/kg	0.0050	0.0038	EPA-8080	ND	A10	1
delta-BHC	ND	ND	mg/kg	0.0050	0.00076	EPA-8080	ND	A10	1
gamma-BHC (Lindane)	ND	ND	mg/kg	0.0050	0.0025	EPA-8080	ND	A10	1
Chlordane (Technical)	ND	ND	mg/kg	0.50	0.15	EPA-8080	ND	A10	1
4,4'-DDD	ND	ND	mg/kg	0.0050	0.00063	EPA-8080	ND	A10	1
4,4'-DDE	ND	ND	mg/kg	0.050	0.0045	EPA-8080	ND	A10	2
4,4'-DDT	ND	ND	mg/kg	0.0050	0.00031	EPA-8080	ND	A10,V11	1
Dieldrin	ND	ND	mg/kg	0.0050	0.00032	EPA-8080	ND	A10	1
Endosulfan I	ND	ND	mg/kg	0.0050	0.00086	EPA-8080	ND	A10	1
Endosulfan II	ND	ND	mg/kg	0.0050	0.00066	EPA-8080	ND	A10,V11	1
Endosulfan sulfate	ND	ND	mg/kg	0.0050	0.0013	EPA-8080	ND	A10	1
Endrin	ND	ND	mg/kg	0.0050	0.00035	EPA-8080	ND	A10,V11	1
Endrin aldehyde	ND	ND	mg/kg	0.0050	0.00061	EPA-8080	ND	A10	1
Heptachlor	ND	ND	mg/kg	0.0050	0.0026	EPA-8080	ND	A10,V11	1
Heptachlor epoxide	ND	ND	mg/kg	0.0050	0.0015	EPA-8080	ND	A10	1
Methoxychlor	ND	ND	mg/kg	0.0050	0.0013	EPA-8080	ND	A10,V11	1
Toxaphene	ND	ND	mg/kg	0.50	0.074	EPA-8080	ND	A10	1
PCB-1016	ND	ND	mg/kg	0.10	0.027	EPA-8080	ND	A10	1
PCB-1221	ND	ND	mg/kg	0.10	0.050	EPA-8080	ND	A10	1
PCB-1232	ND	ND	mg/kg	0.10	0.012	EPA-8080	ND	A10	1
PCB-1242	ND	ND	mg/kg	0.10	0.016	EPA-8080	ND	A10	1
PCB-1248	ND	ND	mg/kg	0.10	0.012	EPA-8080	ND	A10	1
PCB-1254	ND	ND	mg/kg	0.10	0.0078	EPA-8080	ND	A10	1
PCB-1260	ND	ND	mg/kg	0.10	0.022	EPA-8080	ND	A10	1
Total PCB's (Summation)	ND	ND	mg/kg	0.10	0.050	EPA-8080	ND	A10	1
TCMX (Surrogate)	290	290	%	12 - 168 (LCL - UCL)		EPA-8080		A10,A17	2
Dibutyl chlorendate (Surrogate)	168	168	%	26 - 151 (LCL - UCL)		EPA-8080		A10,A17	2

Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 10/06/2010 13:26
Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Organochlorine Pesticides and PCB's (EPA Method 8080)

BCL Sample ID: 1012983-01 | **Client Sample Name:** Composite Biosolids, 9/14/2010 10:00:00AM

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8080	09/20/10	09/30/10 14:07	VH1	GC-1	10	BTI1728
2	EPA-8080	09/20/10	09/30/10 14:07	VH1	GC-1	100	BTI1728

Marine Research Specialists
3140 Telegraph Road, Suite A
Suite A
Ventura, CA 93003-3238

Reported: 10/06/2010 13:26
Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Volatile Organic Analysis (EPA Method 8240)

BCL Sample ID: 1012983-01 | **Client Sample Name:** Composite Biosolids, 9/14/2010 10:00:00AM

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	0.0039	0.0033	**mg/kg**	**0.0050**	**0.0013**	**EPA-8240**	**ND**	**J**	1
Bromodichloromethane	ND	ND	mg/kg	0.0050	0.00084	EPA-8240	ND		1
Bromoform	ND	ND	mg/kg	0.0050	0.0015	EPA-8240	ND		1
Bromomethane	ND	ND	mg/kg	0.0050	0.0016	EPA-8240	ND		1
Carbon tetrachloride	ND	ND	mg/kg	0.0050	0.0011	EPA-8240	ND		1
Chlorobenzene	ND	ND	mg/kg	0.0050	0.0013	EPA-8240	ND		1
Chloroethane	ND	ND	mg/kg	0.0050	0.0014	EPA-8240	ND		1
Chloroform	ND	ND	mg/kg	0.0050	0.00063	EPA-8240	ND		1
Chloromethane	ND	ND	mg/kg	0.0050	0.0014	EPA-8240	ND		1
Dibromochloromethane	ND	ND	mg/kg	0.0050	0.00099	EPA-8240	ND		1
1,2-Dichlorobenzene	ND	ND	mg/kg	0.0050	0.00081	EPA-8240	ND		1
1,3-Dichlorobenzene	ND	ND	mg/kg	0.0050	0.0014	EPA-8240	ND		1
1,4-Dichlorobenzene	ND	ND	mg/kg	0.0050	0.0015	EPA-8240	ND		1
1,1-Dichloroethane	ND	ND	mg/kg	0.0050	0.0014	EPA-8240	ND		1
1,2-Dichloroethane	ND	ND	mg/kg	0.0050	0.00085	EPA-8240	ND		1
1,1-Dichloroethene	ND	ND	mg/kg	0.0050	0.0012	EPA-8240	ND		1
trans-1,2-Dichloroethene	ND	ND	mg/kg	0.0050	0.0014	EPA-8240	ND		1
1,2-Dichloropropane	ND	ND	mg/kg	0.0050	0.00081	EPA-8240	ND		1
cis-1,3-Dichloropropene	ND	ND	mg/kg	0.0050	0.0011	EPA-8240	ND		1
trans-1,3-Dichloropropene	ND	ND	mg/kg	0.0050	0.0012	EPA-8240	ND		1
Ethylbenzene	0.040	0.033	**mg/kg**	**0.0050**	**0.0015**	**EPA-8240**	**ND**		1
Methylene chloride	ND	ND	mg/kg	0.010	0.0024	EPA-8240	ND		1
Methyl t-butyl ether	ND	ND	mg/kg	0.0050	0.00050	EPA-8240	ND		1
1,1,2,2-Tetrachloroethane	ND	ND	mg/kg	0.0050	0.0011	EPA-8240	ND		1
Tetrachloroethene	ND	ND	mg/kg	0.0050	0.0013	EPA-8240	ND		1
Toluene	0.043	0.036	**mg/kg**	**0.0050**	**0.0012**	**EPA-8240**	**ND**		1
1,1,1-Trichloroethane	ND	ND	mg/kg	0.0050	0.0011	EPA-8240	ND		1
1,1,2-Trichloroethane	ND	ND	mg/kg	0.0050	0.00077	EPA-8240	ND		1
Trichloroethene	ND	ND	mg/kg	0.0050	0.0011	EPA-8240	ND		1
Trichlorofluoromethane	ND	ND	mg/kg	0.0050	0.0011	EPA-8240	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	ND	mg/kg	0.0050	0.0013	EPA-8240	ND		1
Vinyl chloride	ND	ND	mg/kg	0.0050	0.0016	EPA-8240	ND		1

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Reported: 10/06/2010 13:26
Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Volatile Organic Analysis (EPA Method 8240)

BCL Sample ID: 1012983-01 | **Client Sample Name:** Composite Biosolids, 9/14/2010 10:00:00AM

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Xylenes	0.13	0.11	**mg/kg**	**0.010**	**0.0034**	**EPA-8240**	**ND**		1
Acrolein	ND	ND	mg/kg	0.050	0.0073	EPA-8240	ND		1
Acrylonitrile	ND	ND	mg/kg	0.020	0.0047	EPA-8240	ND		1
1,2-Dichloroethane-d4 (Surrogate)	100	100	%	70 - 121 (LCL - UCL)		EPA-8240			1
Toluene-d8 (Surrogate)	97.2	97.2	%	81 - 117 (LCL - UCL)		EPA-8240			1
4-Bromofluorobenzene (Surrogate)	89.7	89.7	%	74 - 121 (LCL - UCL)		EPA-8240			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8240	09/20/10	09/20/10 17:35	ADC	MS-V2	1	BTI1170

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Reported: 10/06/2010 13:26
Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

BCL Sample ID: 1012983-01 | **Client Sample Name:** Composite Biosolids, 9/14/2010 10:00:00AM

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Acenaphthene	ND	ND	mg/kg	5.0	0.90	EPA-8270C	ND	A10	1
Acenaphthylene	ND	ND	mg/kg	5.0	0.95	EPA-8270C	ND	A10	1
Aldrin	ND	ND	mg/kg	5.0	1.2	EPA-8270C	ND	A10	1
Aniline	ND	ND	mg/kg	10	2.6	EPA-8270C	ND	A10	1
Anthracene	ND	ND	mg/kg	5.0	0.90	EPA-8270C	ND	A10	1
Benzidine	ND	ND	mg/kg	150	11	EPA-8270C	ND	A10	1
Benzo[a]anthracene	ND	ND	mg/kg	5.0	0.60	EPA-8270C	ND	A10	1
Benzo[b]fluoranthene	ND	ND	mg/kg	5.0	0.90	EPA-8270C	ND	A10	1
Benzo[k]fluoranthene	ND	ND	mg/kg	5.0	0.95	EPA-8270C	ND	A10	1
Benzo[a]pyrene	ND	ND	mg/kg	5.0	0.75	EPA-8270C	ND	A10	1
Benzo[g,h,i]perylene	ND	ND	mg/kg	5.0	2.8	EPA-8270C	ND	A10	1
Benzoic acid	ND	ND	mg/kg	25	3.4	EPA-8270C	ND	A10	1
Benzyl alcohol	ND	ND	mg/kg	5.0	0.90	EPA-8270C	ND	A10	1
Benzyl butyl phthalate	ND	ND	mg/kg	5.0	1.0	EPA-8270C	ND	A10	1
alpha-BHC	ND	ND	mg/kg	5.0	0.90	EPA-8270C	ND	A10	1
beta-BHC	ND	ND	mg/kg	5.0	1.0	EPA-8270C	ND	A10	1
delta-BHC	ND	ND	mg/kg	5.0	0.90	EPA-8270C	ND	A10	1
gamma-BHC (Lindane)	ND	ND	mg/kg	5.0	0.85	EPA-8270C	ND	A10	1
bis(2-Chloroethoxy)methane	ND	ND	mg/kg	5.0	0.85	EPA-8270C	ND	A10	1
bis(2-Chloroethyl) ether	ND	ND	mg/kg	5.0	0.80	EPA-8270C	ND	A10	1
bis(2-Chloroisopropyl)ether	ND	ND	mg/kg	5.0	1.0	EPA-8270C	ND	A10	1
bis(2-Ethylhexyl)phthalate	43	36	**mg/kg**	**10**	**2.2**	**EPA-8270C**	**ND**	**A10**	1
4-Bromophenyl phenyl ether	ND	ND	mg/kg	5.0	0.85	EPA-8270C	ND	A10	1
4-Chloroaniline	ND	ND	mg/kg	5.0	1.4	EPA-8270C	ND	A10	1
2-Chloronaphthalene	ND	ND	mg/kg	5.0	1.0	EPA-8270C	ND	A10	1
4-Chlorophenyl phenyl ether	ND	ND	mg/kg	5.0	0.75	EPA-8270C	ND	A10	1
Chrysene	ND	ND	mg/kg	5.0	0.85	EPA-8270C	ND	A10	1
4,4'-DDD	ND	ND	mg/kg	5.0	0.85	EPA-8270C	ND	A10	1
4,4'-DDE	ND	ND	mg/kg	5.0	0.85	EPA-8270C	ND	A10	1
4,4'-DDT	ND	ND	mg/kg	5.0	0.95	EPA-8270C	ND	A10	1
Dibenzo[a,h]anthracene	ND	ND	mg/kg	5.0	0.95	EPA-8270C	ND	A10	1
Dibenzofuran	ND	ND	mg/kg	5.0	1.0	EPA-8270C	ND	A10	1

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Reported: 10/06/2010 13:26
Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

BCL Sample ID: 1012983-01 | **Client Sample Name:** Composite Biosolids, 9/14/2010 10:00:00AM

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
1,2-Dichlorobenzene	ND	ND	mg/kg	5.0	1.0	EPA-8270C	ND	A10	1
1,3-Dichlorobenzene	ND	ND	mg/kg	5.0	1.0	EPA-8270C	ND	A10	1
1,4-Dichlorobenzene	ND	ND	mg/kg	5.0	0.95	EPA-8270C	ND	A10	1
3,3-Dichlorobenzidine	ND	ND	mg/kg	10	0.34	EPA-8270C	ND	A10	1
Dieldrin	ND	ND	mg/kg	5.0	1.6	EPA-8270C	ND	A10	1
Diethyl phthalate	ND	ND	mg/kg	5.0	0.95	EPA-8270C	ND	A10	1
Dimethyl phthalate	ND	ND	mg/kg	5.0	1.0	EPA-8270C	ND	A10	1
Di-n-butyl phthalate	ND	ND	mg/kg	5.0	0.90	EPA-8270C	ND	A10	1
2,4-Dinitrotoluene	ND	ND	mg/kg	5.0	1.1	EPA-8270C	ND	A10	1
2,6-Dinitrotoluene	ND	ND	mg/kg	5.0	0.90	EPA-8270C	ND	A10	1
Di-n-octyl phthalate	ND	ND	mg/kg	5.0	0.85	EPA-8270C	ND	A10	1
1,2-Diphenylhydrazine	ND	ND	mg/kg	5.0	0.95	EPA-8270C	ND	A10	1
Endosulfan I	ND	ND	mg/kg	10	1.0	EPA-8270C	ND	A10	1
Endosulfan II	ND	ND	mg/kg	10	1.0	EPA-8270C	ND	A10	1
Endosulfan sulfate	ND	ND	mg/kg	5.0	1.0	EPA-8270C	ND	A10	1
Endrin	ND	ND	mg/kg	10	1.2	EPA-8270C	ND	A10	1
Endrin aldehyde	ND	ND	mg/kg	25	1.1	EPA-8270C	ND	A10	1
Fluoranthene	ND	ND	mg/kg	5.0	0.85	EPA-8270C	ND	A10	1
Fluorene	ND	ND	mg/kg	5.0	0.95	EPA-8270C	ND	A10	1
Heptachlor	ND	ND	mg/kg	5.0	1.0	EPA-8270C	ND	A10	1
Heptachlor epoxide	ND	ND	mg/kg	5.0	0.85	EPA-8270C	ND	A10	1
Hexachlorobenzene	ND	ND	mg/kg	5.0	0.80	EPA-8270C	ND	A10	1
Hexachlorobutadiene	ND	ND	mg/kg	5.0	0.85	EPA-8270C	ND	A10	1
Hexachlorocyclopentadiene	ND	ND	mg/kg	5.0	0.95	EPA-8270C	ND	A10	1
Hexachloroethane	ND	ND	mg/kg	5.0	1.0	EPA-8270C	ND	A10	1
Indeno[1,2,3-cd]pyrene	ND	ND	mg/kg	5.0	3.6	EPA-8270C	ND	A10	1
Isophorone	ND	ND	mg/kg	5.0	0.85	EPA-8270C	ND	A10	1
2-Methylnaphthalene	ND	ND	mg/kg	5.0	0.90	EPA-8270C	ND	A10	1
Naphthalene	ND	ND	mg/kg	5.0	0.90	EPA-8270C	ND	A10	1
2-Naphthylamine	ND	ND	mg/kg	150	8.0	EPA-8270C	ND	A10	1
2-Nitroaniline	ND	ND	mg/kg	5.0	0.90	EPA-8270C	ND	A10	1
3-Nitroaniline	ND	ND	mg/kg	10	0.75	EPA-8270C	ND	A10	1

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Reported: 10/06/2010 13:26
Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

BCL Sample ID: 1012983-01 | **Client Sample Name:** Composite Biosolids, 9/14/2010 10:00:00AM

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
4-Nitroaniline	ND	ND	mg/kg	10	1.2	EPA-8270C	ND	A10	1
Nitrobenzene	ND	ND	mg/kg	5.0	0.75	EPA-8270C	ND	A10	1
N-Nitrosodimethylamine	ND	ND	mg/kg	5.0	1.8	EPA-8270C	ND	A10	1
N-Nitrosodi-N-propylamine	ND	ND	mg/kg	5.0	1.0	EPA-8270C	ND	A10	1
N-Nitrosodiphenylamine	ND	ND	mg/kg	5.0	1.0	EPA-8270C	ND	A10	1
Phenanthrene	ND	ND	mg/kg	5.0	0.90	EPA-8270C	ND	A10	1
Pyrene	ND	ND	mg/kg	5.0	0.85	EPA-8270C	ND	A10	1
1,2,4-Trichlorobenzene	ND	ND	mg/kg	5.0	0.90	EPA-8270C	ND	A10	1
4-Chloro-3-methylphenol	ND	ND	mg/kg	10	1.1	EPA-8270C	ND	A10	1
2-Chlorophenol	ND	ND	mg/kg	5.0	0.80	EPA-8270C	ND	A10	1
2,4-Dichlorophenol	ND	ND	mg/kg	5.0	0.85	EPA-8270C	ND	A10	1
2,4-Dimethylphenol	ND	ND	mg/kg	5.0	1.8	EPA-8270C	ND	A10	1
4,6-Dinitro-2-methylphenol	ND	ND	mg/kg	25	0.60	EPA-8270C	ND	A10	1
2,4-Dinitrophenol	ND	ND	mg/kg	25	0.38	EPA-8270C	ND	A10	1
2-Methylphenol	ND	ND	mg/kg	5.0	0.85	EPA-8270C	ND	A10	1
3- & 4-Methylphenol	ND	ND	mg/kg	10	1.6	EPA-8270C	ND	A10	1
2-Nitrophenol	ND	ND	mg/kg	5.0	0.80	EPA-8270C	ND	A10	1
4-Nitrophenol	ND	ND	mg/kg	10	0.90	EPA-8270C	ND	A10	1
Pentachlorophenol	ND	ND	mg/kg	10	0.65	EPA-8270C	ND	A10	1
Phenol	ND	ND	mg/kg	5.0	0.80	EPA-8270C	ND	A10	1
2,4,5-Trichlorophenol	ND	ND	mg/kg	10	0.90	EPA-8270C	ND	A10	1
2,4,6-Trichlorophenol	ND	ND	mg/kg	10	0.85	EPA-8270C	ND	A10	1
2-Fluorophenol (Surrogate)	0	0	%	25 - 144 (LCL - UCL)		EPA-8270C		A10,A17	1
Phenol-d5 (Surrogate)	0	0	%	26 - 133 (LCL - UCL)		EPA-8270C		A10,A17	1
Nitrobenzene-d5 (Surrogate)	0	0	%	39 - 113 (LCL - UCL)		EPA-8270C		A10,A17	1
2-Fluorobiphenyl (Surrogate)	0	0	%	43 - 120 (LCL - UCL)		EPA-8270C		A10,A17	1
2,4,6-Tribromophenol (Surrogate)	0	0	%	31 - 147 (LCL - UCL)		EPA-8270C		A10,A17	1
p-Terphenyl-d14 (Surrogate)	0	0	%	37 - 149 (LCL - UCL)		EPA-8270C		A10,A17	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8270C	09/20/10	09/30/10 12:55	SKC	MS-B2	50	BTI1623

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Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

EPA Method 1664

BCL Sample ID: 1012983-01 | **Client Sample Name:** Composite Biosolids, 9/14/2010 10:00:00AM

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Oil and Grease	41000	34000	**mg/kg**	**100**	**26**	**EPA-1664HEM**	**ND**		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-1664HEM	09/20/10	09/20/10 09:00	JAK	MAN-SV	2	BTI1270

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Reported: 10/06/2010 13:26
Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Chemical Analysis

BCL Sample ID: 1012983-01 | **Client Sample Name:** Composite Biosolids, 9/14/2010 10:00:00AM

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Moisture	0	16.2	%	0.05	0.05	Calc	ND		1
Total Cyanide	0.81	0.68	mg/kg	0.50	0.13	EPA-9012	ND		2
pH	6.55	6.55	pH Units	0.05	0.05	EPA-9045		pH1:1	3
pH Measurement Temperature	23.1	23.1	C	0.1	0.1	EPA-9045			3
Nitrate as NO3	420	360	mg/kg	22	6.0	EPA-300.0	ND	A01	4
Total Kjeldahl Nitrogen	39000	32000	mg/kg	4000	1500	EPA-351.2	ND	A01	5
Ammonia as N	7100	5900	mg/kg	500	250	EPA-350.1	710	A01,S11	6
Total Phosphate	69000	58000	mg/kg	1500	950	EPA-365.4	ND	A01	7
Solids	100	83.8	%	0.05	0.05	SM-2540G			8

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	Calc	09/17/10	10/01/10 19:16	TMS	Calc	1	BTI1103
2	EPA-9012	09/20/10	09/22/10 09:31	TDC	KONE-1	1	BTI1211
3	EPA-9045	09/20/10	09/20/10 15:20	RML	B360	1	BTI1253
4	EPA-300.0	09/20/10	09/20/10 13:38	LD1	IC2	5	BTI1168
5	EPA-351.2	09/22/10	09/29/10 12:47	CDR	SC-1	100	BTI1401
6	EPA-350.1	09/21/10	09/22/10 14:26	CDR	SC-1	50	BTI1296
7	EPA-365.4	09/28/10	10/04/10 11:15	CDR	SC-1	50	BTJ0032
8	SM-2540G	09/28/10	09/28/10 10:00	RCP	MANUAL	1	BTI1691

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Reported: 10/06/2010 13:26
Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Modified WET Test (STLC)

BCL Sample ID: 1012983-01 | **Client Sample Name:** Composite Biosolids, 9/14/2010 10:00:00AM

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Hexavalent Chromium	ND	ND	mg/L	0.20	0.070	EPA-7196	ND		1
Total Dissolved Solids @ 180 C	6700	5600	**mg/L**	**200**	**200**	**EPA-160.1**	**ND**		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-7196	09/23/10	09/23/10 16:06	TMS	KONE-1	1	BTI1598
2	EPA-160.1	09/24/10	09/24/10 09:00	NW1	MANUAL	20	BTI1526

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Reported: 10/06/2010 13:26
Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

WET Test (STLC)

BCL Sample ID: 1012983-01 | **Client Sample Name:** Composite Biosolids, 9/14/2010 10:00:00AM

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Copper	11	9.3	**mg/L**	**0.10**	**0.012**	**EPA-6010B**	**ND**		1
Lead	0.45	0.38	**mg/L**	**0.50**	**0.16**	**EPA-6010B**	**ND**	**J**	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	09/23/10	09/24/10 12:10	JRG	PE-OP2	1	BTI1488

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Reported: 10/06/2010 13:26
Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Total Concentrations (TTLC)

BCL Sample ID: 1012983-01 | **Client Sample Name:** Composite Biosolids, 9/14/2010 10:00:00AM

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Antimony	3.8	3.2	**mg/kg**	**5.0**	**0.50**	**EPA-6010B**	**ND**	**J**	1
Arsenic	5.0	4.2	**mg/kg**	**1.0**	**0.38**	**EPA-6010B**	**ND**		2
Barium	510	430	**mg/kg**	**0.50**	**0.077**	**EPA-6010B**	**0.098**		1
Beryllium	0.28	0.23	**mg/kg**	**0.50**	**0.050**	**EPA-6010B**	**ND**	**J**	1
Cadmium	4.0	3.4	**mg/kg**	**0.50**	**0.050**	**EPA-6010B**	**ND**		1
Chromium	54	45	**mg/kg**	**0.50**	**0.060**	**EPA-6010B**	**ND**		1
Total Hexavalent Chromium	ND	ND	mg/kg	1.0	0.40	EPA-7199	ND		3
Cobalt	4.6	3.8	**mg/kg**	**2.5**	**0.25**	**EPA-6010B**	**ND**		1
Copper	690	580	**mg/kg**	**1.0**	**0.12**	**EPA-6010B**	**ND**		1
Lead	52	43	**mg/kg**	**2.5**	**0.25**	**EPA-6010B**	**0.27**		1
Mercury	0.82	0.69	**mg/kg**	**0.16**	**0.012**	**EPA-7471A**	**0.023**		4
Molybdenum	25	21	**mg/kg**	**2.5**	**0.25**	**EPA-6010B**	**ND**		1
Nickel	41	34	**mg/kg**	**0.50**	**0.058**	**EPA-6010B**	**ND**		1
Selenium	7.4	6.2	**mg/kg**	**1.0**	**0.51**	**EPA-6010B**	**ND**		1
Silver	5.1	4.3	**mg/kg**	**0.50**	**0.050**	**EPA-6010B**	**ND**		1
Thallium	ND	ND	mg/kg	5.0	0.73	EPA-6010B	ND		1
Vanadium	32	27	**mg/kg**	**0.50**	**0.050**	**EPA-6010B**	**ND**		1
Zinc	1500	1300	**mg/kg**	**2.5**	**0.25**	**EPA-6010B**	**1.2**		1
Boron	20	17	**mg/kg**	**5.0**	**0.50**	**EPA-6010B**	**ND**		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	09/22/10	09/22/10 17:58	JRG	PE-OP2	1	BTI1405
2	EPA-6010B	09/22/10	09/22/10 17:58	JRG	PE-OP2	1	BTI1405
3	EPA-7199	09/25/10	09/27/10 15:37	LD1	IC-4	0.996	BTI1577
4	EPA-7471A	09/24/10	09/27/10 15:12	MEV	CETAC1	0.992	BTI1548

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Reported: 10/06/2010 13:26
Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Organochlorine Pesticides and PCB's (EPA Method 8080)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BTI1728						
Aldrin	BTI1728-BLK1	ND	mg/kg	0.00050	0.000026	
alpha-BHC	BTI1728-BLK1	ND	mg/kg	0.00050	0.00014	
beta-BHC	BTI1728-BLK1	ND	mg/kg	0.00050	0.00038	
delta-BHC	BTI1728-BLK1	ND	mg/kg	0.00050	0.000076	
gamma-BHC (Lindane)	BTI1728-BLK1	ND	mg/kg	0.00050	0.00025	
Chlordane (Technical)	BTI1728-BLK1	ND	mg/kg	0.050	0.015	
4,4'-DDD	BTI1728-BLK1	ND	mg/kg	0.00050	0.000063	
4,4'-DDE	BTI1728-BLK1	ND	mg/kg	0.00050	0.000045	
4,4'-DDT	BTI1728-BLK1	ND	mg/kg	0.00050	0.000031	
Dieldrin	BTI1728-BLK1	ND	mg/kg	0.00050	0.000032	
Endosulfan I	BTI1728-BLK1	ND	mg/kg	0.00050	0.000086	
Endosulfan II	BTI1728-BLK1	ND	mg/kg	0.00050	0.000066	
Endosulfan sulfate	BTI1728-BLK1	ND	mg/kg	0.00050	0.00013	
Endrin	BTI1728-BLK1	ND	mg/kg	0.00050	0.000035	
Endrin aldehyde	BTI1728-BLK1	ND	mg/kg	0.00050	0.000061	
Heptachlor	BTI1728-BLK1	ND	mg/kg	0.00050	0.00026	
Heptachlor epoxide	BTI1728-BLK1	ND	mg/kg	0.00050	0.00015	
Methoxychlor	BTI1728-BLK1	ND	mg/kg	0.00050	0.00013	
Toxaphene	BTI1728-BLK1	ND	mg/kg	0.050	0.0074	
PCB-1016	BTI1728-BLK1	ND	mg/kg	0.010	0.0027	
PCB-1221	BTI1728-BLK1	ND	mg/kg	0.010	0.0050	
PCB-1232	BTI1728-BLK1	ND	mg/kg	0.010	0.0012	
PCB-1242	BTI1728-BLK1	ND	mg/kg	0.010	0.0016	
PCB-1248	BTI1728-BLK1	ND	mg/kg	0.010	0.0012	
PCB-1254	BTI1728-BLK1	ND	mg/kg	0.010	0.00078	
PCB-1260	BTI1728-BLK1	ND	mg/kg	0.010	0.0022	
Total PCB's (Summation)	BTI1728-BLK1	ND	mg/kg	0.010	0.0050	
TCMX (Surrogate)	BTI1728-BLK1	60.5	%	12 - 168 (LCL - UCL)		
Dibutyl chlorendate (Surrogate)	BTI1728-BLK1	105	%	26 - 151 (LCL - UCL)		

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Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Organochlorine Pesticides and PCB's (EPA Method 8080)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BTI1728										
Aldrin	BTI1728-BS1	LCS	0.0047125	0.0049342	mg/kg	95.5		60 - 124		
gamma-BHC (Lindane)	BTI1728-BS1	LCS	0.0044132	0.0049342	mg/kg	89.4		46 - 107		
4,4'-DDT	BTI1728-BS1	LCS	0.0047372	0.0049342	mg/kg	96.0		40 - 148		
Dieldrin	BTI1728-BS1	LCS	0.0049303	0.0049342	mg/kg	99.9		56 - 130		
Endrin	BTI1728-BS1	LCS	0.0051444	0.0049342	mg/kg	104		61 - 131		
Heptachlor	BTI1728-BS1	LCS	0.0046783	0.0049342	mg/kg	94.8		58 - 130		
TCMX (Surrogate)	BTI1728-BS1	LCS	0.0063490	0.0098684	mg/kg	64.3		12 - 168		
Dibutyl chlorendate (Surrogate)	BTI1728-BS1	LCS	0.026252	0.024671	mg/kg	106		26 - 151		

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Project Manager: Doug Coats

Organochlorine Pesticides and PCB's (EPA Method 8080)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BTI1728	Used client sample: N										
Aldrin	MS	1012856-01	ND	0.0059934	0.0049342	mg/kg		121		63 - 119	Q03
	MSD	1012856-01	ND	0.0055426	0.0049180	mg/kg	7.5	113	20	63 - 119	
gamma-BHC (Lindane)	MS	1012856-01	ND	0.0046464	0.0049342	mg/kg		94.2		47 - 102	
	MSD	1012856-01	ND	0.0046098	0.0049180	mg/kg	0.5	93.7	30	47 - 102	
4,4'-DDT	MS	1012856-01	ND	0.011472	0.0049342	mg/kg		232		32 - 158	Q03
	MSD	1012856-01	ND	0.0089066	0.0049180	mg/kg	24.9	181	30	32 - 158	Q03
Dieldrin	MS	1012856-01	ND	0.037692	0.0049342	mg/kg		764		57 - 125	Q03
	MSD	1012856-01	ND	0.037992	0.0049180	mg/kg	1.1	772	20	57 - 125	Q03
Endrin	MS	1012856-01	0.010818	0.012178	0.0049342	mg/kg		27.5		61 - 130	Q03
	MSD	1012856-01	0.010818	0.014677	0.0049180	mg/kg	96.1	78.5	27	61 - 130	Q02
Heptachlor	MS	1012856-01	ND	0.018306	0.0049342	mg/kg		371		52 - 139	Q03
	MSD	1012856-01	ND	0.018770	0.0049180	mg/kg	2.8	382	30	52 - 139	Q03
TCMX (Surrogate)	MS	1012856-01	ND	0.016589	0.0098684	mg/kg		168		12 - 168	
	MSD	1012856-01	ND	0.014943	0.0098361	mg/kg		152		12 - 168	
Dibutyl chlorendate (Surrogate)	MS	1012856-01	ND	0.049572	0.024671	mg/kg		201		26 - 151	S09
	MSD	1012856-01	ND	0.055839	0.024590	mg/kg		227		26 - 151	S09

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Project: Biosolids from MBWWTP
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Project Manager: Doug Coats

Volatile Organic Analysis (EPA Method 8240)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BTI1170						
Benzene	BTI1170-BLK1	ND	mg/kg	0.0050	0.0013	
Bromodichloromethane	BTI1170-BLK1	ND	mg/kg	0.0050	0.00084	
Bromoform	BTI1170-BLK1	ND	mg/kg	0.0050	0.0015	
Bromomethane	BTI1170-BLK1	ND	mg/kg	0.0050	0.0016	
Carbon tetrachloride	BTI1170-BLK1	ND	mg/kg	0.0050	0.0011	
Chlorobenzene	BTI1170-BLK1	ND	mg/kg	0.0050	0.0013	
Chloroethane	BTI1170-BLK1	ND	mg/kg	0.0050	0.0014	
Chloroform	BTI1170-BLK1	ND	mg/kg	0.0050	0.00063	
Chloromethane	BTI1170-BLK1	ND	mg/kg	0.0050	0.0014	
Dibromochloromethane	BTI1170-BLK1	ND	mg/kg	0.0050	0.00099	
1,2-Dichlorobenzene	BTI1170-BLK1	ND	mg/kg	0.0050	0.00081	
1,3-Dichlorobenzene	BTI1170-BLK1	ND	mg/kg	0.0050	0.0014	
1,4-Dichlorobenzene	BTI1170-BLK1	ND	mg/kg	0.0050	0.0015	
1,1-Dichloroethane	BTI1170-BLK1	ND	mg/kg	0.0050	0.0014	
1,2-Dichloroethane	BTI1170-BLK1	ND	mg/kg	0.0050	0.00085	
1,1-Dichloroethene	BTI1170-BLK1	ND	mg/kg	0.0050	0.0012	
trans-1,2-Dichloroethene	BTI1170-BLK1	ND	mg/kg	0.0050	0.0014	
1,2-Dichloropropane	BTI1170-BLK1	ND	mg/kg	0.0050	0.00081	
cis-1,3-Dichloropropene	BTI1170-BLK1	ND	mg/kg	0.0050	0.0011	
trans-1,3-Dichloropropene	BTI1170-BLK1	ND	mg/kg	0.0050	0.0012	
Ethylbenzene	BTI1170-BLK1	ND	mg/kg	0.0050	0.0015	
Methylene chloride	BTI1170-BLK1	ND	mg/kg	0.010	0.0024	
Methyl t-butyl ether	BTI1170-BLK1	ND	mg/kg	0.0050	0.00050	
1,1,2,2-Tetrachloroethane	BTI1170-BLK1	ND	mg/kg	0.0050	0.0011	
Tetrachloroethene	BTI1170-BLK1	ND	mg/kg	0.0050	0.0013	
Toluene	BTI1170-BLK1	ND	mg/kg	0.0050	0.0012	
1,1,1-Trichloroethane	BTI1170-BLK1	ND	mg/kg	0.0050	0.0011	
1,1,2-Trichloroethane	BTI1170-BLK1	ND	mg/kg	0.0050	0.00077	
Trichloroethene	BTI1170-BLK1	ND	mg/kg	0.0050	0.0011	
Trichlorofluoromethane	BTI1170-BLK1	ND	mg/kg	0.0050	0.0011	
1,1,2-Trichloro-1,2,2-trifluoroethane	BTI1170-BLK1	ND	mg/kg	0.0050	0.0013	
Vinyl chloride	BTI1170-BLK1	ND	mg/kg	0.0050	0.0016	
Total Xylenes	BTI1170-BLK1	ND	mg/kg	0.010	0.0034	
Acrolein	BTI1170-BLK1	ND	mg/kg	0.050	0.0073	

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Project Manager: Doug Coats

Volatile Organic Analysis (EPA Method 8240)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BTI1170						
Acrylonitrile	BTI1170-BLK1	ND	mg/kg	0.020	0.0047	
1,2-Dichloroethane-d4 (Surrogate)	BTI1170-BLK1	102	%	70 - 121 (LCL - UCL)		
Toluene-d8 (Surrogate)	BTI1170-BLK1	100	%	81 - 117 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BTI1170-BLK1	99.0	%	74 - 121 (LCL - UCL)		

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Project Manager: Doug Coats

Volatile Organic Analysis (EPA Method 8240)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BTI1170										
Benzene	BTI1170-BS1	LCS	0.14995	0.12500	mg/kg	120		70 - 130		
Bromodichloromethane	BTI1170-BS1	LCS	0.14439	0.12500	mg/kg	116		70 - 130		
Chlorobenzene	BTI1170-BS1	LCS	0.14826	0.12500	mg/kg	119		70 - 130		
Chloroethane	BTI1170-BS1	LCS	0.14113	0.12500	mg/kg	113		70 - 130		
1,4-Dichlorobenzene	BTI1170-BS1	LCS	0.15189	0.12500	mg/kg	122		70 - 130		
1,1-Dichloroethane	BTI1170-BS1	LCS	0.14995	0.12500	mg/kg	120		70 - 130		
1,1-Dichloroethene	BTI1170-BS1	LCS	0.14445	0.12500	mg/kg	116		70 - 130		
Toluene	BTI1170-BS1	LCS	0.14542	0.12500	mg/kg	116		70 - 130		
Trichloroethene	BTI1170-BS1	LCS	0.14827	0.12500	mg/kg	119		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BTI1170-BS1	LCS	0.052585	0.050000	mg/kg	105		70 - 121		
Toluene-d8 (Surrogate)	BTI1170-BS1	LCS	0.050695	0.050000	mg/kg	101		81 - 117		
4-Bromofluorobenzene (Surrogate)	BTI1170-BS1	LCS	0.050047	0.050000	mg/kg	100		74 - 121		

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Project Manager: Doug Coats

Volatile Organic Analysis (EPA Method 8240)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BTI1170	Used client sample: N										
Benzene	MS	1011454-83	ND	0.14485	0.12500	mg/kg		116		70 - 130	
	MSD	1011454-83	ND	0.13678	0.12500	mg/kg	5.7	109	20	70 - 130	
Bromodichloromethane	MS	1011454-83	ND	0.14004	0.12500	mg/kg		112		70 - 130	
	MSD	1011454-83	ND	0.13447	0.12500	mg/kg	4.1	108	20	70 - 130	
Chlorobenzene	MS	1011454-83	ND	0.14336	0.12500	mg/kg		115		70 - 130	
	MSD	1011454-83	ND	0.13872	0.12500	mg/kg	3.3	111	20	70 - 130	
Chloroethane	MS	1011454-83	ND	0.14428	0.12500	mg/kg		115		70 - 130	
	MSD	1011454-83	ND	0.13168	0.12500	mg/kg	9.1	105	20	70 - 130	
1,4-Dichlorobenzene	MS	1011454-83	ND	0.15368	0.12500	mg/kg		123		70 - 130	
	MSD	1011454-83	ND	0.14396	0.12500	mg/kg	6.5	115	20	70 - 130	
1,1-Dichloroethane	MS	1011454-83	ND	0.14470	0.12500	mg/kg		116		70 - 130	
	MSD	1011454-83	ND	0.13473	0.12500	mg/kg	7.1	108	20	70 - 130	
1,1-Dichloroethene	MS	1011454-83	ND	0.14556	0.12500	mg/kg		116		70 - 130	
	MSD	1011454-83	ND	0.13342	0.12500	mg/kg	8.7	107	20	70 - 130	
Toluene	MS	1011454-83	ND	0.14730	0.12500	mg/kg		118		70 - 130	
	MSD	1011454-83	ND	0.13909	0.12500	mg/kg	5.7	111	20	70 - 130	
Trichloroethene	MS	1011454-83	ND	0.15262	0.12500	mg/kg		122		70 - 130	
	MSD	1011454-83	ND	0.14151	0.12500	mg/kg	7.6	113	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1011454-83	ND	0.051480	0.050000	mg/kg		103		70 - 121	
	MSD	1011454-83	ND	0.050244	0.050000	mg/kg		100		70 - 121	
Toluene-d8 (Surrogate)	MS	1011454-83	ND	0.050845	0.050000	mg/kg		102		81 - 117	
	MSD	1011454-83	ND	0.051075	0.050000	mg/kg		102		81 - 117	
4-Bromofluorobenzene (Surrogate)	MS	1011454-83	ND	0.049986	0.050000	mg/kg		100		74 - 121	
	MSD	1011454-83	ND	0.049839	0.050000	mg/kg		99.7		74 - 121	

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Project: Biosolids from MBWWTP
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Project Manager: Doug Coats

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BTI1623						
Acenaphthene	BTI1623-BLK1	ND	mg/kg	0.10	0.018	
Acenaphthylene	BTI1623-BLK1	ND	mg/kg	0.10	0.019	
Aldrin	BTI1623-BLK1	ND	mg/kg	0.10	0.024	
Aniline	BTI1623-BLK1	ND	mg/kg	0.20	0.053	
Anthracene	BTI1623-BLK1	ND	mg/kg	0.10	0.018	
Benzidine	BTI1623-BLK1	ND	mg/kg	3.0	0.22	
Benzo[a]anthracene	BTI1623-BLK1	ND	mg/kg	0.10	0.012	
Benzo[b]fluoranthene	BTI1623-BLK1	ND	mg/kg	0.10	0.018	
Benzo[k]fluoranthene	BTI1623-BLK1	ND	mg/kg	0.10	0.019	
Benzo[a]pyrene	BTI1623-BLK1	ND	mg/kg	0.10	0.015	
Benzo[g,h,i]perylene	BTI1623-BLK1	ND	mg/kg	0.10	0.056	
Benzoic acid	BTI1623-BLK1	ND	mg/kg	0.50	0.067	
Benzyl alcohol	BTI1623-BLK1	ND	mg/kg	0.10	0.018	
Benzyl butyl phthalate	BTI1623-BLK1	ND	mg/kg	0.10	0.021	
alpha-BHC	BTI1623-BLK1	ND	mg/kg	0.10	0.018	
beta-BHC	BTI1623-BLK1	ND	mg/kg	0.10	0.021	
delta-BHC	BTI1623-BLK1	ND	mg/kg	0.10	0.018	
gamma-BHC (Lindane)	BTI1623-BLK1	ND	mg/kg	0.10	0.017	
bis(2-Chloroethoxy)methane	BTI1623-BLK1	ND	mg/kg	0.10	0.017	
bis(2-Chloroethyl) ether	BTI1623-BLK1	ND	mg/kg	0.10	0.016	
bis(2-Chloroisopropyl)ether	BTI1623-BLK1	ND	mg/kg	0.10	0.021	
bis(2-Ethylhexyl)phthalate	BTI1623-BLK1	ND	mg/kg	0.20	0.043	
4-Bromophenyl phenyl ether	BTI1623-BLK1	ND	mg/kg	0.10	0.017	
4-Chloroaniline	BTI1623-BLK1	ND	mg/kg	0.10	0.027	
2-Chloronaphthalene	BTI1623-BLK1	ND	mg/kg	0.10	0.020	
4-Chlorophenyl phenyl ether	BTI1623-BLK1	ND	mg/kg	0.10	0.015	
Chrysene	BTI1623-BLK1	ND	mg/kg	0.10	0.017	
4,4'-DDD	BTI1623-BLK1	ND	mg/kg	0.10	0.017	
4,4'-DDE	BTI1623-BLK1	ND	mg/kg	0.10	0.017	
4,4'-DDT	BTI1623-BLK1	ND	mg/kg	0.10	0.019	
Dibenzo[a,h]anthracene	BTI1623-BLK1	ND	mg/kg	0.10	0.019	
Dibenzofuran	BTI1623-BLK1	ND	mg/kg	0.10	0.020	
1,2-Dichlorobenzene	BTI1623-BLK1	ND	mg/kg	0.10	0.020	
1,3-Dichlorobenzene	BTI1623-BLK1	ND	mg/kg	0.10	0.021	

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Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BTI1623						
1,4-Dichlorobenzene	BTI1623-BLK1	ND	mg/kg	0.10	0.019	
3,3-Dichlorobenzidine	BTI1623-BLK1	ND	mg/kg	0.20	0.0067	
Dieldrin	BTI1623-BLK1	ND	mg/kg	0.10	0.031	
Diethyl phthalate	BTI1623-BLK1	ND	mg/kg	0.10	0.019	
Dimethyl phthalate	BTI1623-BLK1	ND	mg/kg	0.10	0.020	
Di-n-butyl phthalate	BTI1623-BLK1	ND	mg/kg	0.10	0.018	
2,4-Dinitrotoluene	BTI1623-BLK1	ND	mg/kg	0.10	0.022	
2,6-Dinitrotoluene	BTI1623-BLK1	ND	mg/kg	0.10	0.018	
Di-n-octyl phthalate	BTI1623-BLK1	ND	mg/kg	0.10	0.017	
1,2-Diphenylhydrazine	BTI1623-BLK1	ND	mg/kg	0.10	0.019	
Endosulfan I	BTI1623-BLK1	ND	mg/kg	0.20	0.020	
Endosulfan II	BTI1623-BLK1	ND	mg/kg	0.20	0.021	
Endosulfan sulfate	BTI1623-BLK1	ND	mg/kg	0.10	0.021	
Endrin	BTI1623-BLK1	ND	mg/kg	0.20	0.025	
Endrin aldehyde	BTI1623-BLK1	ND	mg/kg	0.50	0.022	
Fluoranthene	BTI1623-BLK1	ND	mg/kg	0.10	0.017	
Fluorene	BTI1623-BLK1	ND	mg/kg	0.10	0.019	
Heptachlor	BTI1623-BLK1	ND	mg/kg	0.10	0.021	
Heptachlor epoxide	BTI1623-BLK1	ND	mg/kg	0.10	0.017	
Hexachlorobenzene	BTI1623-BLK1	ND	mg/kg	0.10	0.016	
Hexachlorobutadiene	BTI1623-BLK1	ND	mg/kg	0.10	0.017	
Hexachlorocyclopentadiene	BTI1623-BLK1	ND	mg/kg	0.10	0.019	
Hexachloroethane	BTI1623-BLK1	ND	mg/kg	0.10	0.020	
Indeno[1,2,3-cd]pyrene	BTI1623-BLK1	ND	mg/kg	0.10	0.072	
Isophorone	BTI1623-BLK1	ND	mg/kg	0.10	0.017	
2-Methylnaphthalene	BTI1623-BLK1	ND	mg/kg	0.10	0.018	
Naphthalene	BTI1623-BLK1	ND	mg/kg	0.10	0.018	
2-Naphthylamine	BTI1623-BLK1	ND	mg/kg	3.0	0.16	
2-Nitroaniline	BTI1623-BLK1	ND	mg/kg	0.10	0.018	
3-Nitroaniline	BTI1623-BLK1	ND	mg/kg	0.20	0.015	
4-Nitroaniline	BTI1623-BLK1	ND	mg/kg	0.20	0.025	
Nitrobenzene	BTI1623-BLK1	ND	mg/kg	0.10	0.015	
N-Nitrosodimethylamine	BTI1623-BLK1	ND	mg/kg	0.10	0.037	
N-Nitrosodi-N-propylamine	BTI1623-BLK1	ND	mg/kg	0.10	0.021	

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Reported: 10/06/2010 13:26
Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BTI1623						
N-Nitrosodiphenylamine	BTI1623-BLK1	ND	mg/kg	0.10	0.021	
Phenanthrene	BTI1623-BLK1	ND	mg/kg	0.10	0.018	
Pyrene	BTI1623-BLK1	ND	mg/kg	0.10	0.017	
1,2,4-Trichlorobenzene	BTI1623-BLK1	ND	mg/kg	0.10	0.018	
4-Chloro-3-methylphenol	BTI1623-BLK1	ND	mg/kg	0.20	0.022	
2-Chlorophenol	BTI1623-BLK1	ND	mg/kg	0.10	0.016	
2,4-Dichlorophenol	BTI1623-BLK1	ND	mg/kg	0.10	0.017	
2,4-Dimethylphenol	BTI1623-BLK1	ND	mg/kg	0.10	0.035	
4,6-Dinitro-2-methylphenol	BTI1623-BLK1	ND	mg/kg	0.50	0.012	
2,4-Dinitrophenol	BTI1623-BLK1	ND	mg/kg	0.50	0.0077	
2-Methylphenol	BTI1623-BLK1	ND	mg/kg	0.10	0.017	
3- & 4-Methylphenol	BTI1623-BLK1	ND	mg/kg	0.20	0.033	
2-Nitrophenol	BTI1623-BLK1	ND	mg/kg	0.10	0.016	
4-Nitrophenol	BTI1623-BLK1	ND	mg/kg	0.20	0.018	
Pentachlorophenol	BTI1623-BLK1	ND	mg/kg	0.20	0.013	
Phenol	BTI1623-BLK1	ND	mg/kg	0.10	0.016	
2,4,5-Trichlorophenol	BTI1623-BLK1	ND	mg/kg	0.20	0.018	
2,4,6-Trichlorophenol	BTI1623-BLK1	ND	mg/kg	0.20	0.017	
2-Fluorophenol (Surrogate)	BTI1623-BLK1	95.2	%	25 - 144 (LCL - UCL)		
Phenol-d5 (Surrogate)	BTI1623-BLK1	98.5	%	26 - 133 (LCL - UCL)		
Nitrobenzene-d5 (Surrogate)	BTI1623-BLK1	101	%	39 - 113 (LCL - UCL)		
2-Fluorobiphenyl (Surrogate)	BTI1623-BLK1	106	%	43 - 120 (LCL - UCL)		
2,4,6-Tribromophenol (Surrogate)	BTI1623-BLK1	99.6	%	31 - 147 (LCL - UCL)		
p-Terphenyl-d14 (Surrogate)	BTI1623-BLK1	113	%	37 - 149 (LCL - UCL)		

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Project Manager: Doug Coats

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BTI1623										
Acenaphthene	BTI1623-BS1	LCS	1.8999	1.6667	mg/kg	114		60 - 115		
1,4-Dichlorobenzene	BTI1623-BS1	LCS	1.6309	1.6667	mg/kg	97.9		57 - 114		
2,4-Dinitrotoluene	BTI1623-BS1	LCS	2.1327	1.6667	mg/kg	128		41 - 129		
Hexachlorobenzene	BTI1623-BS1	LCS	1.8207	1.6667	mg/kg	109		65 - 129		
Hexachlorobutadiene	BTI1623-BS1	LCS	1.6169	1.6667	mg/kg	97.0		49 - 114		
Hexachloroethane	BTI1623-BS1	LCS	1.5887	1.6667	mg/kg	95.3		49 - 111		
Nitrobenzene	BTI1623-BS1	LCS	1.5901	1.6667	mg/kg	95.4		44 - 111		
N-Nitrosodi-N-propylamine	BTI1623-BS1	LCS	1.4794	1.6667	mg/kg	88.8		30 - 124		
Pyrene	BTI1623-BS1	LCS	2.0725	1.6667	mg/kg	124		53 - 133		
1,2,4-Trichlorobenzene	BTI1623-BS1	LCS	1.8416	1.6667	mg/kg	110		50 - 119		
4-Chloro-3-methylphenol	BTI1623-BS1	LCS	1.6231	1.6667	mg/kg	97.4		49 - 116		
2-Chlorophenol	BTI1623-BS1	LCS	1.4547	1.6667	mg/kg	87.3		41 - 110		
2-Methylphenol	BTI1623-BS1	LCS	1.5117	1.6667	mg/kg	90.7		36 - 114		
3- & 4-Methylphenol	BTI1623-BS1	LCS	2.5822	3.3333	mg/kg	77.5		40 - 98		
4-Nitrophenol	BTI1623-BS1	LCS	1.5640	1.6667	mg/kg	93.8		30 - 113		
Pentachlorophenol	BTI1623-BS1	LCS	1.6055	1.6667	mg/kg	96.3		19 - 132		
Phenol	BTI1623-BS1	LCS	1.3894	1.6667	mg/kg	83.4		38 - 108		
2,4,6-Trichlorophenol	BTI1623-BS1	LCS	1.6251	1.6667	mg/kg	97.5		49 - 121		
2-Fluorophenol (Surrogate)	BTI1623-BS1	LCS	2.3193	2.6667	mg/kg	87.0		25 - 144		
Phenol-d5 (Surrogate)	BTI1623-BS1	LCS	2.3899	2.6667	mg/kg	89.6		26 - 133		
Nitrobenzene-d5 (Surrogate)	BTI1623-BS1	LCS	2.3154	2.6667	mg/kg	86.8		39 - 113		
2-Fluorobiphenyl (Surrogate)	BTI1623-BS1	LCS	2.5959	2.6667	mg/kg	97.3		43 - 120		
2,4,6-Tribromophenol (Surrogate)	BTI1623-BS1	LCS	2.8388	2.6667	mg/kg	106		31 - 147		
p-Terphenyl-d14 (Surrogate)	BTI1623-BS1	LCS	1.5507	1.3333	mg/kg	116		37 - 149		

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Project: Biosolids from MBWWTP
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Project Manager: Doug Coats

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BTI1623	Used client sample: N										
Acenaphthene	MS	1012856-01	ND	1.2409	1.6611	mg/kg		74.7		62 - 118	J
	MSD	1012856-01	ND	1.2158	1.6667	mg/kg	2.4	72.9	20	62 - 118	J
1,4-Dichlorobenzene	MS	1012856-01	ND	1.1188	1.6611	mg/kg		67.4		62 - 115	J
	MSD	1012856-01	ND	1.0608	1.6667	mg/kg	5.6	63.6	22	62 - 115	J
2,4-Dinitrotoluene	MS	1012856-01	ND	0.91113	1.6611	mg/kg		54.9		46 - 126	J
	MSD	1012856-01	ND	0.89083	1.6667	mg/kg	2.6	53.4	22	46 - 126	J
Hexachlorobenzene	MS	1012856-01	ND	1.0947	1.6611	mg/kg		65.9		64 - 133	J
	MSD	1012856-01	ND	1.0758	1.6667	mg/kg	2.1	64.5	22	64 - 133	J
Hexachlorobutadiene	MS	1012856-01	ND	0.94186	1.6611	mg/kg		56.7		52 - 117	J
	MSD	1012856-01	ND	0.89583	1.6667	mg/kg	5.3	53.7	21	52 - 117	J
Hexachloroethane	MS	1012856-01	ND	0.54485	1.6611	mg/kg		32.8		53 - 112	J,Q03
	MSD	1012856-01	ND	ND	1.6667	mg/kg	42.5	21.3	26	53 - 112	Q03
Nitrobenzene	MS	1012856-01	ND	1.0374	1.6611	mg/kg		62.4		45 - 115	J
	MSD	1012856-01	ND	0.94917	1.6667	mg/kg	9.2	56.9	22	45 - 115	J
N-Nitrosodi-N-propylamine	MS	1012856-01	ND	0.66860	1.6611	mg/kg		40.3		36 - 122	J
	MSD	1012856-01	ND	0.98583	1.6667	mg/kg	38.0	59.1	25	36 - 122	J,Q02
Pyrene	MS	1012856-01	ND	1.7458	1.6611	mg/kg		105		54 - 135	J
	MSD	1012856-01	ND	1.6333	1.6667	mg/kg	7.0	98.0	16	54 - 135	J
1,2,4-Trichlorobenzene	MS	1012856-01	ND	1.0930	1.6611	mg/kg		65.8		55 - 121	J
	MSD	1012856-01	ND	1.0583	1.6667	mg/kg	3.6	63.5	20	55 - 121	J
4-Chloro-3-methylphenol	MS	1012856-01	ND	0.72508	1.6611	mg/kg		43.6		49 - 121	J,Q03
	MSD	1012856-01	ND	0.74000	1.6667	mg/kg	1.7	44.4	19	49 - 121	J,Q03
2-Chlorophenol	MS	1012856-01	ND	0.92608	1.6611	mg/kg		55.8		47 - 108	J
	MSD	1012856-01	ND	0.90667	1.6667	mg/kg	2.5	54.4	23	47 - 108	J
2-Methylphenol	MS	1012856-01	ND	0.97259	1.6611	mg/kg		58.6		39 - 116	J
	MSD	1012856-01	ND	0.92083	1.6667	mg/kg	5.8	55.2	25	39 - 116	J
3- & 4-Methylphenol	MS	1012856-01	ND	1.5357	3.3223	mg/kg		46.2		40 - 102	J
	MSD	1012856-01	ND	1.5608	3.3333	mg/kg	1.3	46.8	24	40 - 102	J
4-Nitrophenol	MS	1012856-01	ND	ND	1.6611	mg/kg		12.8		32 - 111	Q03
	MSD	1012856-01	ND	0.52250	1.6667	mg/kg	84.4	31.3	17	32 - 111	J,Q03
Pentachlorophenol	MS	1012856-01	ND	0.54983	1.6611	mg/kg		33.1		20 - 134	J
	MSD	1012856-01	ND	0.58833	1.6667	mg/kg	6.4	35.3	25	20 - 134	J
Phenol	MS	1012856-01	ND	0.77159	1.6611	mg/kg		46.5		38 - 113	J
	MSD	1012856-01	ND	0.77500	1.6667	mg/kg	0.1	46.5	25	38 - 113	J
2,4,6-Trichlorophenol	MS	1012856-01	ND	0.73090	1.6611	mg/kg		44.0		58 - 119	J,Q03
	MSD	1012856-01	ND	0.77083	1.6667	mg/kg	5.0	46.2	24	58 - 119	J,Q03

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Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BTI1623	Used client sample: N										
2-Fluorophenol (Surrogate)	MS	1012856-01	ND	1.5532	2.6578	mg/kg		58.4		25 - 144	
	MSD	1012856-01	ND	1.3292	2.6667	mg/kg		49.8		25 - 144	
Phenol-d5 (Surrogate)	MS	1012856-01	ND	1.4111	2.6578	mg/kg		53.1		26 - 133	
	MSD	1012856-01	ND	1.1667	2.6667	mg/kg		43.8		26 - 133	
Nitrobenzene-d5 (Surrogate)	MS	1012856-01	ND	1.8945	2.6578	mg/kg		71.3		39 - 113	
	MSD	1012856-01	ND	1.6042	2.6667	mg/kg		60.2		39 - 113	
2-Fluorobiphenyl (Surrogate)	MS	1012856-01	ND	1.8106	2.6578	mg/kg		68.1		43 - 120	
	MSD	1012856-01	ND	1.5500	2.6667	mg/kg		58.1		43 - 120	
2,4,6-Tribromophenol (Surrogate)	MS	1012856-01	ND	1.2193	2.6578	mg/kg		45.9		31 - 147	
	MSD	1012856-01	ND	1.1192	2.6667	mg/kg		42.0		31 - 147	
p-Terphenyl-d14 (Surrogate)	MS	1012856-01	ND	1.0581	1.3289	mg/kg		79.6		37 - 149	
	MSD	1012856-01	ND	0.87750	1.3333	mg/kg		65.8		37 - 149	

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Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

EPA Method 1664

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BTI1270						
Oil and Grease	BTI1270-BLK1	ND	mg/kg	50	13	

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Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

EPA Method 1664

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BTI1270										
Oil and Grease	BTI1270-BS1	LCS	664.00	793.00	mg/kg	83.7		59 - 117		

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Project Manager: Doug Coats

EPA Method 1664

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BTI1270	Used client sample: N										
Oil and Grease	DUP	1012964-01	53740	46369		mg/kg	14.7		30		
	MS	1011454-89	ND	617.00	793.00	mg/kg		77.8		56 - 111	
	MSD	1011454-89	ND	661.00	793.00	mg/kg	6.9	83.4	30	56 - 111	

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Project Manager: Doug Coats

Chemical Analysis

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BTI1103						
Moisture	BTI1103-BLK1	ND	%	0.05	0.05	
QC Batch ID: BTI1168						
Nitrate as NO3	BTI1168-BLK1	ND	mg/kg	4.4	1.2	
QC Batch ID: BTI1211						
Total Cyanide	BTI1211-BLK1	ND	mg/kg	0.50	0.13	
QC Batch ID: BTI1296						
Ammonia as N	BTI1296-BLK1	14.190	mg/kg	10	5.0	M01
QC Batch ID: BTI1401						
Total Kjeldahl Nitrogen	BTI1401-BLK1	ND	mg/kg	40	15	
QC Batch ID: BTJ0032						
Total Phosphate	BTJ0032-BLK1	ND	mg/kg	30	19	

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Chemical Analysis

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BTI1168										
Nitrate as NO3	BTI1168-BS1	LCS	22.546	22.134	mg/kg	102		90 - 110		
QC Batch ID: BTI1211										
Total Cyanide	BTI1211-BS1	LCS	9.2022	10.000	mg/kg	92.0		80 - 120		
QC Batch ID: BTI1253										
pH	BTI1253-BS1	LCS	11.996	12.000	pH Units	100		95 - 105		
QC Batch ID: BTI1296										
Ammonia as N	BTI1296-BS1	LCS	101.92	100.00	mg/kg	102		80 - 120		
QC Batch ID: BTI1401										
Total Kjeldahl Nitrogen	BTI1401-BS1	LCS	412.80	400.00	mg/kg	103		85 - 115		
QC Batch ID: BTJ0032										
Total Phosphate	BTJ0032-BS1	LCS	622.25	613.20	mg/kg	101		85 - 115		

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Chemical Analysis

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BTI1168	Used client sample: N										
Nitrate as NO3	DUP	1012718-01	27.092	27.756		mg/kg	2.4		20		
	MS	1012718-01	27.092	254.56	223.58	mg/kg		102		80 - 120	
	MSD	1012718-01	27.092	254.70	223.58	mg/kg	0.1	102	20	80 - 120	
QC Batch ID: BTI1211	Used client sample: Y - Description: Composite Biosolids, 09/14/2010 10:00										
Total Cyanide	DUP	1012983-01	0.68260	0.73470		mg/kg	7.4		20		
	MS	1012983-01	0.68260	1.9323	10.000	mg/kg		12.5		80 - 120	Q03
	MSD	1012983-01	0.68260	1.8003	10.000	mg/kg	11.2	11.2	20	80 - 120	Q03
QC Batch ID: BTI1253	Used client sample: N										
pH	DUP	1012724-02	9.7270	9.7190		pH Units	0.1		20		
QC Batch ID: BTI1296	Used client sample: Y - Description: Composite Biosolids, 09/14/2010 10:00										
Ammonia as N	DUP	1012983-01	5919.0	6249.5		mg/kg	5.4		20		
	MS	1012983-01	5919.0	6878.0	100.00	mg/kg		959		80 - 120	A03
	MSD	1012983-01	5919.0	6650.5	100.00	mg/kg	26.9	732	20	80 - 120	A03,Q02
QC Batch ID: BTI1401	Used client sample: Y - Description: Composite Biosolids, 09/14/2010 10:00										
Total Kjeldahl Nitrogen	DUP	1012983-01	32424	34156		mg/kg	5.2		20		
	MS	1012983-01	32424	32608	400.00	mg/kg		46.0		80 - 120	A03
	MSD	1012983-01	32424	32532	400.00	mg/kg	52.7	26.8	20	80 - 120	A03,Q02
QC Batch ID: BTI1691	Used client sample: Y - Description: Composite Biosolids, 09/14/2010 10:00										
Solids	DUP	1012983-01	83.830	83.830		%	0		20		
QC Batch ID: BTJ0032	Used client sample: N										
Total Phosphate	DUP	1013194-09	9430.4	9827.8		mg/kg	4.1		20		
	MS	1013194-09	9430.4	10327	613.20	mg/kg		146		80 - 120	A03
	MSD	1013194-09	9430.4	10299	613.20	mg/kg	3.2	142	20	80 - 120	A03,Q02

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Reported: 10/06/2010 13:26
Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Modified WET Test (STLC)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BTI1526						
Total Dissolved Solids @ 180 C	BTI1526-BLK1	ND	mg/L	6.7	6.7	
QC Batch ID: BTI1598						
Hexavalent Chromium	BTI1598-BLK1	ND	mg/L	0.20	0.070	

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Project Manager: Doug Coats

Modified WET Test (STLC)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BTI1526										
Total Dissolved Solids @ 180 C	BTI1526-BS1	LCS	630.00	586.00	mg/L	108		90 - 110		
QC Batch ID: BTI1598										
Hexavalent Chromium	BTI1598-BS1	LCS	4.8831	5.0000	mg/L	97.7		85 - 115		

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Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Modified WET Test (STLC)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BTI1526	Used client sample: N										
Total Dissolved Solids @ 180 C	DUP	1012966-06	29600	29400		mg/L	0.7		20		
QC Batch ID: BTI1598	Used client sample: N										
Hexavalent Chromium	DUP	1012966-06	ND	ND		mg/L			20		
	MS	1012966-06	ND	5.1125	5.2632	mg/L		97.1		85 - 115	
	MSD	1012966-06	ND	5.0894	5.2632	mg/L	0.5	96.7	20	85 - 115	

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Project Manager: Doug Coats

WET Test (STLC)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BTI1488						
Copper	BTI1488-BLK1	ND	mg/L	0.10	0.012	
Lead	BTI1488-BLK1	ND	mg/L	0.50	0.16	

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Project Manager: Doug Coats

WET Test (STLC)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BTI1488										
Copper	BTI1488-BS1	LCS	20.548	20.000	mg/L	103		85 - 115		
Lead	BTI1488-BS1	LCS	21.549	20.000	mg/L	108		85 - 115		

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Reported: 10/06/2010 13:26
Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

WET Test (STLC)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BTI1488	Used client sample: N										
Copper	DUP	1012945-02	8.1472	8.2603		mg/L	1.4		20		
	MS	1012945-02	8.1472	29.260	20.408	mg/L		103		75 - 125	
	MSD	1012945-02	8.1472	29.457	20.408	mg/L	0.9	104	20	75 - 125	
Lead	DUP	1012945-02	0.18717	ND		mg/L			20		
	MS	1012945-02	0.18717	21.595	20.408	mg/L		105		75 - 125	
	MSD	1012945-02	0.18717	21.915	20.408	mg/L	1.5	106	20	75 - 125	

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Project Manager: Doug Coats

Total Concentrations (TTLC)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BTI1405						
Antimony	BTI1405-BLK1	ND	mg/kg	5.0	0.50	
Arsenic	BTI1405-BLK1	ND	mg/kg	1.0	0.38	
Barium	BTI1405-BLK1	0.097770	mg/kg	0.50	0.077	J
Beryllium	BTI1405-BLK1	ND	mg/kg	0.50	0.050	
Cadmium	BTI1405-BLK1	ND	mg/kg	0.50	0.050	
Chromium	BTI1405-BLK1	ND	mg/kg	0.50	0.060	
Cobalt	BTI1405-BLK1	ND	mg/kg	2.5	0.25	
Copper	BTI1405-BLK1	ND	mg/kg	1.0	0.12	
Lead	BTI1405-BLK1	0.27414	mg/kg	2.5	0.25	J
Molybdenum	BTI1405-BLK1	ND	mg/kg	2.5	0.25	
Nickel	BTI1405-BLK1	ND	mg/kg	0.50	0.058	
Selenium	BTI1405-BLK1	ND	mg/kg	1.0	0.51	
Silver	BTI1405-BLK1	ND	mg/kg	0.50	0.050	
Thallium	BTI1405-BLK1	ND	mg/kg	5.0	0.73	
Vanadium	BTI1405-BLK1	ND	mg/kg	0.50	0.050	
Zinc	BTI1405-BLK1	1.1535	mg/kg	2.5	0.25	J
Boron	BTI1405-BLK1	ND	mg/kg	5.0	0.50	
QC Batch ID: BTI1548						
Mercury	BTI1548-BLK1	0.022720	mg/kg	0.16	0.012	J
QC Batch ID: BTI1577						
Total Hexavalent Chromium	BTI1577-BLK1	ND	mg/kg	1.0	0.40	

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Project Manager: Doug Coats

Total Concentrations (TTLC)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BTI1405										
Antimony	BTI1405-BS1	LCS	99.211	100.00	mg/kg	99.2		75 - 125		
Arsenic	BTI1405-BS1	LCS	10.245	10.000	mg/kg	102		75 - 125		
Barium	BTI1405-BS1	LCS	101.48	100.00	mg/kg	101		75 - 125		
Beryllium	BTI1405-BS1	LCS	10.436	10.000	mg/kg	104		75 - 125		
Cadmium	BTI1405-BS1	LCS	10.201	10.000	mg/kg	102		75 - 125		
Chromium	BTI1405-BS1	LCS	102.90	100.00	mg/kg	103		75 - 125		
Cobalt	BTI1405-BS1	LCS	103.24	100.00	mg/kg	103		75 - 125		
Copper	BTI1405-BS1	LCS	101.94	100.00	mg/kg	102		75 - 125		
Lead	BTI1405-BS1	LCS	106.49	100.00	mg/kg	106		75 - 125		
Molybdenum	BTI1405-BS1	LCS	103.08	100.00	mg/kg	103		75 - 125		
Nickel	BTI1405-BS1	LCS	104.22	100.00	mg/kg	104		75 - 125		
Selenium	BTI1405-BS1	LCS	10.118	10.000	mg/kg	101		75 - 125		
Silver	BTI1405-BS1	LCS	9.5715	10.000	mg/kg	95.7		75 - 125		
Thallium	BTI1405-BS1	LCS	107.27	100.00	mg/kg	107		75 - 125		
Vanadium	BTI1405-BS1	LCS	108.64	100.00	mg/kg	109		75 - 125		
Zinc	BTI1405-BS1	LCS	104.84	100.00	mg/kg	105		75 - 125		
Boron	BTI1405-BS1	LCS	98.252	100.00	mg/kg	98.3		75 - 125		
QC Batch ID: BTI1548										
Mercury	BTI1548-BS1	LCS	1.5018	1.5000	mg/kg	100		75 - 125		
QC Batch ID: BTI1577										
Total Hexavalent Chromium	BTI1577-BS1	LCS	41.052	40.000	mg/kg	103		80 - 120		

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Project Manager: Doug Coats

Total Concentrations (TTLC)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BTI1405	Used client sample: Y - Description: Composite Biosolids, 09/14/2010 10:00										
Antimony	DUP	1012983-01	3.2022	2.6462		mg/kg	19.0		20		J
	MS	1012983-01	3.2022	59.041	100.00	mg/kg		55.8		16 - 119	
	MSD	1012983-01	3.2022	59.927	100.00	mg/kg	1.6	56.7	20	16 - 119	
Arsenic	DUP	1012983-01	4.1817	4.4746		mg/kg	6.8		20		
	MS	1012983-01	4.1817	13.311	10.000	mg/kg		91.3		75 - 125	
	MSD	1012983-01	4.1817	14.290	10.000	mg/kg	10.2	101	20	75 - 125	
Barium	DUP	1012983-01	426.04	424.11		mg/kg	0.5		20		
	MS	1012983-01	426.04	515.19	100.00	mg/kg		89.1		75 - 125	
	MSD	1012983-01	426.04	534.22	100.00	mg/kg	19.3	108	20	75 - 125	
Beryllium	DUP	1012983-01	0.23473	0.22829		mg/kg	2.8		20		J
	MS	1012983-01	0.23473	10.423	10.000	mg/kg		102		75 - 125	
	MSD	1012983-01	0.23473	10.790	10.000	mg/kg	3.5	106	20	75 - 125	
Cadmium	DUP	1012983-01	3.3704	3.3202		mg/kg	1.5		20		
	MS	1012983-01	3.3704	13.162	10.000	mg/kg		97.9		75 - 125	
	MSD	1012983-01	3.3704	13.205	10.000	mg/kg	0.4	98.3	20	75 - 125	
Chromium	DUP	1012983-01	45.383	43.025		mg/kg	5.3		20		
	MS	1012983-01	45.383	136.07	100.00	mg/kg		90.7		75 - 125	
	MSD	1012983-01	45.383	140.80	100.00	mg/kg	5.1	95.4	20	75 - 125	
Cobalt	DUP	1012983-01	3.8451	3.8217		mg/kg	0.6		20		
	MS	1012983-01	3.8451	95.638	100.00	mg/kg		91.8		75 - 125	
	MSD	1012983-01	3.8451	98.811	100.00	mg/kg	3.4	95.0	20	75 - 125	
Copper	DUP	1012983-01	581.22	568.24		mg/kg	2.3		20		
	MS	1012983-01	581.22	663.37	100.00	mg/kg		82.1		75 - 125	A03
	MSD	1012983-01	581.22	692.69	100.00	mg/kg	30.3	111	20	75 - 125	A03,Q02
Lead	DUP	1012983-01	43.214	42.908		mg/kg	0.7		20		
	MS	1012983-01	43.214	136.01	100.00	mg/kg		92.8		75 - 125	
	MSD	1012983-01	43.214	137.60	100.00	mg/kg	1.7	94.4	20	75 - 125	
Molybdenum	DUP	1012983-01	21.030	20.792		mg/kg	1.1		20		
	MS	1012983-01	21.030	114.30	100.00	mg/kg		93.3		75 - 125	
	MSD	1012983-01	21.030	116.25	100.00	mg/kg	2.1	95.2	20	75 - 125	
Nickel	DUP	1012983-01	34.002	33.087		mg/kg	2.7		20		
	MS	1012983-01	34.002	124.86	100.00	mg/kg		90.9		75 - 125	
	MSD	1012983-01	34.002	129.51	100.00	mg/kg	5.0	95.5	20	75 - 125	
Selenium	DUP	1012983-01	6.1856	6.8763		mg/kg	10.6		20		
	MS	1012983-01	6.1856	16.452	10.000	mg/kg		103		75 - 125	
	MSD	1012983-01	6.1856	16.397	10.000	mg/kg	0.5	102	20	75 - 125	

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Reported: 10/06/2010 13:26
Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Total Concentrations (TTLC)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BTI1405	Used client sample: Y - Description: Composite Biosolids, 09/14/2010 10:00										
Silver	DUP	1012983-01	4.3135	4.1443		mg/kg	4.0		20		
	MS	1012983-01	4.3135	13.332	10.000	mg/kg		90.2		75 - 125	
	MSD	1012983-01	4.3135	14.212	10.000	mg/kg	9.3	99.0	20	75 - 125	
Thallium	DUP	1012983-01	ND	ND		mg/kg			20		
	MS	1012983-01	ND	88.104	100.00	mg/kg		88.1		75 - 125	
	MSD	1012983-01	ND	89.514	100.00	mg/kg	1.6	89.5	20	75 - 125	
Vanadium	DUP	1012983-01	27.232	26.566		mg/kg	2.5		20		
	MS	1012983-01	27.232	127.89	100.00	mg/kg		101		75 - 125	
	MSD	1012983-01	27.232	132.42	100.00	mg/kg	4.4	105	20	75 - 125	
Zinc	DUP	1012983-01	1277.4	1255.9		mg/kg	1.7		20		
	MS	1012983-01	1277.4	1340.4	100.00	mg/kg		63.0		75 - 125	A03
	MSD	1012983-01	1277.4	1385.4	100.00	mg/kg	52.6	108	20	75 - 125	A03,Q02
Boron	DUP	1012983-01	17.057	16.833		mg/kg	1.3		20		
	MS	1012983-01	17.057	105.22	100.00	mg/kg		88.2		75 - 125	
	MSD	1012983-01	17.057	108.85	100.00	mg/kg	4.0	91.8	20	75 - 125	
QC Batch ID: BTI1548	Used client sample: N										
Mercury	DUP	1012795-37	ND	0.016190		mg/kg			20		J
	MS	1012795-37	ND	0.80143	0.79365	mg/kg		101		85 - 115	
	MSD	1012795-37	ND	0.83921	0.79365	mg/kg	4.6	106	20	85 - 115	
QC Batch ID: BTI1577	Used client sample: N										
Total Hexavalent Chromium	DUP	1012966-06	1.9940	2.0000		mg/kg	0.3		20		
	MS	1012966-06	1.9940	40.708	40.000	mg/kg		96.8		75 - 125	
	MSD	1012966-06	1.9940	39.598	40.000	mg/kg	2.9	94.0	20	75 - 125	

Marine Research Specialists
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Reported: 10/06/2010 13:26
Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Subcontract Report for 1012983 PDF File Name: WO_1012983_SUB_LATST.pdf Page 1 of 2

LA Testing
520 Mission Street, South Pasadena, CA 91030
Phone: (323) 254-9950 Fax: (323) 254-9993 Email: pasadenalab@latesting.com

Attn: **Tina Green**
BC Laboratories, Inc.
4100 Atlas Court
Bakersfield, CA 93308

Fax: (661) 327-1918 Phone: (661) 327-4911
Project: 1012983

Customer ID: 32BCLA50
Customer PO:
Received: 09/21/10 10:00 AM
LA Testing Order: 321012883

LA Testing Proj:
Analysis Date: 9/29/2010

Test Report: Asbestos Analysis via Polarized Light Microscopy, Qualitative

Sample	Description	Appearance	Result	Notes
1012983-01 F 321012883-0001	Solids		None Detected	

Initial report from 09/29/2010 10:48:34

Analyst(s)

Kieu-anh Pham Duong (1)

or other approved signatory

LA Testing recommends that soil samples reported as "ND" be tested by the EPA Screening Method/Qualitative. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by LA Testing, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. Samples received in good condition unless otherwise noted.
Samples analyzed by LA Testing 520 Mission Street, South Pasadena CA

Test Report PLMQualw/Types-7.21.0 Printed: 9/29/2010 10:48:34 AM

THIS IS THE LAST PAGE OF THE REPORT.

1

Marine Research Specialists	**Reported:** 10/06/2010 13:26
3140 Telegraph Road, Suite A	Project: Biosolids from MBWWTP
Suite A	Project Number: [none]
Ventura, CA 93003-3238	Project Manager: Doug Coats

Subcontract Report for 1012983 PDF File Name: WO_1012983_SUB_LATST.pdf Page 2 of 2

SUBCONTRACT ORDER

321012883

BC Laboratories

1012983

SENDING LABORATORY:

BC Laboratories
4100 Atlas Ct
Bakersfield, CA 93308
Phone: 661-327-4911
Fax: 661-327-1918
Project Manager: Tina Green

RECEIVING LABORATORY:

La Testing SLATSA
520 Mission St.
So. Pasadena, CA 91030
Phone :1-800-303-0047
Fax: (310) 830-4840

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: 1012983-01 F **Solids**		**Sampled: 09/14/10 10:00**		
ei600/R-93/116s Asbestos LATSA	09/29/10 17:00	09/14/11 10:00		

Containers Supplied: 8oz Jar

Released By	Date	Received By	Date
B Grammel	SEP 2 0 2010	T... (co)	9/21/10 10 am

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Marine Research Specialists
3140 Telegraph Road, Suite A
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Reported: 10/06/2010 13:26
Project: Biosolids from MBWWTP
Project Number: [none]
Project Manager: Doug Coats

Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected at or above the reporting limit
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
A01	PQL's and MDL's are raised due to sample dilution.
A03	The sample concentration is more than 4 times the spike level.
A10	PQL's and MDL's were raised due to matrix interference.
A17	Surrogate not reportable due to sample dilution.
M01	Analyte detected in the Method Blank at or above the PQL.
pH1:1	pH result reported on a 1:1 dilution of sample
Q02	Matrix spike precision is not within the control limits.
Q03	Matrix spike recovery(s) is(are) not within the control limits.
S09	The surrogate recovery on the sample for this compound was not within the control limits.
S11	The analyte in the Method Blank is greater than the laboratory PQL but the sample result is greater than 10 times the Method Blank.
V11	The Continuing Calibration Verification (CCV) recovery is not within established control limits.