

# ADEQ

ARKANSAS  
Department of Environmental Quality

January 30, 2009

Gary Smith, Director  
City of Van Buren  
P O Drawer 1269  
Van Buren, AR 72956

Re: AFIN 17-00062 AR000021482 & AR0040967 City of Van Buren Maximum Allowable Headworks Loadings and Water Quality Levels not to be Exceeded – Guidance

Dear Mr. Smith:

Please find enclosed the final excel spreadsheets indicating your POTWs' maximum allowable headworks and industrial loadings (MAHLs and MAILs) and water quality (WQS) standards not to be exceeded. These are highlighted in the grey columns.

These spreadsheets are the culmination of several other spreadsheets (also attached) that take into account your city's site specific data for influent, effluent (from the last two annual reports thru 10/08), domestic background and removal efficiencies. If you wish to discuss these spreadsheets, please feel free to contact this office.

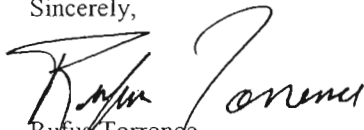
To confirm that the existing technically based local limits are adequate to prevent pass through of pollutants, inhibition of or interference with the treatment works, worker health and safety problems, and sludge contamination, the City may (1) accept the attached spreadsheet calculations as guidance, accurate and valid, or (2) perform its own investigation.

The City of Van Buren operates three POTWs (South, North and Lee Plants) and each plant has an NPDES permit. Part III in the NPDES permits (South & North Plant) requires the City to submit either (1) a WRITTEN CERTIFICATIONS that a technical evaluation has demonstrated that the existing technically based local limits (TBLL) are based on current water quality standards and are adequate to prevent pass through and interference or (2) a WRITTEN NOTIFICATION that the existing local limits will be revised. In either case the City must update the current approved program. The update may include a technical evaluation incorporating any revisions of the current local limits in the approved program. The update must include a draft sewer use ordinance incorporating recent "Streamlining" changes in 40 CFR 403. According to permit requirements any planned updates in the current local limits must be submitted within 12 months of the effective date of the permit. Please note that the effective date of permit number AR0040967 was March 1, 2008.

A written reply on the City's intentions must be received by February 27, 2009.

Feel free to contact this office with any questions.

Sincerely,



Rufus Torrende  
ADEQ Engineer

Attachments: South and North Plant MAHC Spreadsheets

Cc: Anne Roberts (w/o attachments), ADEQ Enforcement

VNBN Ncrth MAHC

Pollutant	% Rem***	Water Quality mg/l	Water Quality lbs/day	Sludge mg/kg	Sludge lbs/day	Inhibition** mg/l	Inhibition** lbs/day	MAHL lbs/day	MAHC mg/l	Domestic lbs/day	Allocation for %SF lbs/day^	MAIL lbs/day	Max Inf Exceedec MAHC	Max Effluent vs WQS(mg/l)
Cadmium Total	67	0.0018	0.0550	85	0.2558	1.00	9.85	0.0550	0.00558	0.0049	0.0495	0.0446	No	No
Copper Total	71	0.0092	0.3137	4300	12.2122	1.00	9.85	0.3137	0.03185	0.2564	0.2823	0.0259	0.0370	No
Lead Total	75	0.0027	0.1068	840	2.2584	1.00	9.85	0.1068	0.01084	0.0156	0.0961	0.0805	No	No
Mercury Total	60	0.00001	0.0003	57	0.1916	0.10	0.98	0.0003	0.00003	0.0029	0.0003	0.0000	No	No
Nickel Total	42	0.0970	1.6466	420	2.0164	1.00	9.85	1.6466	0.16718	0.0613	1.4820	1.4206	No	No
Selenium Total	50	0.0056	0.1099	100	0.4033	0.20	1.97	0.1099	0.01116	0.0489	0.0989	0.0501	No	No
Silver Total	75	0.0009	0.0368	0	0.0000	0.25	2.46	0.0368	0.00373	0.0049	0.0331	0.0282	No	No
Zinc Total	49	0.0855	1.6518	7500	30.8639	4.500	44.32	1.6518	0.16771	1.3798	1.4866	0.1068	0.1900	No
Chromium Total	82	0.2954	16.1660	3000	7.3772	1.00	9.85	7.3772	0.74899	0.0977	6.6395	6.5417	No	No
Cyanide Total	69	0.0058	0.1844	0	0.0000	0.23	2.27	0.1844	0.01872	0.0977	0.1659	0.0682	No	No
Arsenic	45	0.3490	6.2493	75	0.3361	0.10	0.985	0.3361	0.03412	0.0049	0.3025	0.2976	No	No
Molybdenum	50	0.0000	0.0000	75	0.3025	0.20	1.97	0.3025	0.03071	#####	0.2722	0.0000	No	No
Beryllium	50	0.005915	0.1165	0	0.0000	0.10	0.98	0.1165	0.01183	#####	0.1049	0.0000	No	No

Dry tons/day of sludge \*\*\*\*  Safety Factor

\* lbs/day = mg/l \* 8.34 \* average flow / (1-%Rem)  
 \*\* Page 3-44 of EPA 833B87202 Be est @ 0.10 mg/l; Zinc (4.5 mg/l) and CN (0.23 mg/l) from Sept 06 Annual Report  
 + lbs/day = (dry tons/day \* 0.002 \* critria(mg/kg)) / % Rem  
 ++ lbs/day = mg/l \* Flow \* 8.34  
 ^ lbs/day = (1 - SF) \* MAHL

MAIL = Maximum allowable industrial loading = Allocation for % SF - Domestic  
 \*\*\*\*Rem Eff from Page 3-56 EPA 833B87202, Be & Mo est @ 50; Cu,Pb & Zn from "Rem" spreadsheet in this Workbook  
 \*\*\*\*\* Dry tons/day of sludge based on page 5 of checklist in Audit Report dated July 11, 2006.



WQ Limits for the VBNB North

Aquatic Life  
AML, ug/l

1.84	Cadmium Total
11.81	Chromium (hex)
9.24	Copper Total
2.71	Lead Total
0.0134	Mercury Total
96.96	Nickel Total
5.58	Selenium Total
0.93	Silver Total
85.53	Zinc Total
295.43	Chromium (Tri)
5.80	Cyanide Total
5.91	Beryllium Total
348.96	Arsenic

VNBN North  
REMOVAL EFFICIENCIES (% REM)

Influent	Date	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc	Chromium	Cyanide	Arsenic	Molydenur Beryllium
	09/23/08	0.0012	0.0018	0.0200	0.0018				0.0900				
	09/24/08	0.0200	0.0018	0.0200	0.0018				0.1100				
	09/25/08	0.0260	0.0025	0.0260	0.0025				0.1500				
	09/26/08	0.0370	0.0034	0.0200	0.0015				0.1900				
	09/27/08	0.0200	0.0015	0.0180	0.0015				0.1000				
	09/28/08	0.0180	0.0015	0.0180	0.0015				0.0870				

Detection Level (DL)	Average	Maximum	All Concs > DL (Yes/No)
0.0005	0.0005	0.0000	Yes
0.0005	0.02217	0.0370	Yes
0.0005	0.00198	0.0034	Yes
0.0005	0.00005	0.0000	Yes
0.0005	0.0005	0.0000	Yes
0.0050	0.0050	0.0000	Yes
0.0005	0.0005	0.0000	Yes
0.0005	0.0005	0.0000	Yes
0.0200	0.12117	0.1900	Yes
0.0100	0.0100	0.0000	Yes
0.0100	0.0100	0.0000	Yes
0.0005	0.0005	0.0000	Yes
0.0100	0.0100	0.0000	Yes
0.0100	0.0100	0.0000	Yes

Effluent	Date	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc	Chromium	Cyanide	Arsenic	Molydenur Beryllium
	09/23/08	0.0086	0.0005	0.0005					0.0740				
	09/24/08	0.0064	0.0005	0.0005					0.0520				
	09/25/08	0.0058	0.0005	0.0005					0.0560				
	09/26/08	0.0060	0.0005	0.0005					0.0600				
	09/27/08	0.0057	0.0005	0.0005					0.0630				
	09/28/08	0.0058	0.0005	0.0005					0.0630				


Detection Level	Average	Maximum	All Concs > DL (Yes/No)	% Rem	PA % REM
0.0005	0.0005	0.0000	Yes	Yes	67
0.00638	0.00638	0.0086	Yes	Yes	86
0.0005	0.0005	0.0005	Yes	Yes	61
0.0005	0.0005	0.0005	Yes	Yes	60
0.00005	0.00005	0.00005	Yes	Yes	42
0.0005	0.0005	0.0000	Yes	Yes	50
0.0050	0.0050	0.0000	Yes	Yes	75
0.0005	0.0005	0.0000	Yes	Yes	79
0.0200	0.06133	0.0740	Yes	Yes	82
0.0100	0.0100	0.0000	Yes	Yes	69
0.0100	0.0100	0.0000	Yes	Yes	45
0.0005	0.0005	0.0000	Yes	Yes	50
0.0100	0.0100	0.0000	Yes	Yes	50

Note: The engineer considered only the pollutants with concentrations in the influent well above the method detection level.

**Domestic Calculations for VBN North**

Pollutants	EPA, P3-59 * Avg Reported**	mg/l	lbs/day
Cadmium Total	0.0030	0.00050	0.0049
Copper Total	0.0607	0.02623	0.2564
Lead Total	0.0490	0.00159	0.0156
Mercury Total	0.0003		0.0029
Nickel Total	0.0210	0.00628	0.0613
Selenium Total	-	0.00500	0.0489
Silver Total	0.0050	0.00050	0.0049
Zinc Total	0.1750	0.14117	1.3798
Chromium Total	0.0500	0.01000	0.0977
Cyanide Total	0.0410	0.01000	0.0977
Arsenic	0.0030	0.00050	0.0049
Molybdenum	999999.0000		9774470.23
Beryllium	999999.00		9774470.23

\*EPA Page 3-59 of 833-B87-202  
 \*\*Domestic concentrations are the smaller of EPA Typical Levels and average background concentrations shown on the attachments to Van Buren Municipal Utilities letter dated October 28, 2008.

  
**Domestic Calculations for VNB South**

Pollutants	EPA, P3-59* mg/l	Avg Reported** mg/l	Loading lbs/day
Cadmium Total	0.0030	0.00060	0.01
Copper Total	0.0607	0.02200	0.35
Lead Total	0.0490	0.00487	0.08
Mercury Total	0.0003	0.00020	0.00
Nickel Total	0.0210	0.00600	0.10
Selenium Total	-	0.00200	0.03
Silver Total	0.0050	0.00223	0.04
Zinc Total	0.1750		2.80
Chromium Total	0.0500	0.01000	0.16
Cyanide Total	0.0410	0.01000	0.16
Arsenic	0.0030	0.00135	0.02
Molybdenum	999999.0000		16027629.17
Beryllium	999999.00	0.00030	0.00

\*EPA Page 3-59 of 833-B87-202

\*\*Domestic concentrations are the smaller of EPA Typical Levels and average influent values reported in the 2007 Annual Report dated October 24, 2008 except Cyanide and Beryllium (2006 Report dated October 19, 2007).

VNBN South MAHC

Pollutant	% Rem***	Water Quality mg/l	Water Quality lbs/day	Water Quality* lbs/day	Sludge mg/kg	Sludge+ lbs/day	Inhibition** mg/l	Inhibition** lbs/day	MAHL lbs/day	MAHC mg/l	Domestic Allocation for %SF lbs/day	Domestic Allocation for %SF lbs/day^	MAIL lbs/day	Max Inf Exceedec MAHC	Max Effluent vs WQS(mg/l)
Cadmium Total	67	0.1265	8.2818	85	1.17	1.17	1.00	21.60	1.17	0.05410	0.01	0.88	0.867	No	No
Copper Total	68	0.4316	29.1356	4300	58.25	58.25	1.00	21.60	21.60	1.00000	0.35	16.20	15.848	No	No
Lead Total	61	0.5877	32.5483	840	12.68	12.68	1.00	21.60	12.68	0.58720	0.08	9.51	9.435	No	No
Mercury Total	60	0.00039	0.0212	57	0.88	0.88	0.10	2.16	0.0212	0.00098	0.0032	0.0159	0.013	No	No
Nickel Total	42	15.0719	561.3125	420	9.21	9.21	1.00	21.60	9.21	0.42642	0.10	6.91	6.812	No	No
Selenium Total	50	0.1378	5.9513	100	1.842	1.842	0.20	4.32	1.842	0.08528	0.03	1.38	1.350	No	No
Silver Total	75	0.1126	9.7273	0	0.00	0.00	0.25	5.40	5.40	0.25000	0.04	4.05	4.014	No	No
Zinc Total	69	3.4612	241.1720	7500	100.12	100.12	0.300	6.48	6.48	0.30000	2.80	4.86	2.055	No	No
Chromium Total	82	22.6802	2721.6997	3000	33.70	33.70	1.00	21.60	21.60	1.00000	0.16	16.20	16.040	No	No
Cyanide Total	69	0.1540	10.7315	0	0.00	0.00	0.10	2.16	2.16	0.10000	0.16	1.62	1.460	No	No
Arsenic	45	4.8078	188.8193	75	1.54	1.54	0.10	2.160	1.54	0.07107	0.02	1.15	1.130	No	No
Molybdenum	50	0.0000	0.0000	75	1.382	1.382	0.20	4.32	1.382	0.06396	#####	1.04	0.000	No	No
Beryllium	50	0.173405	7.4913	0	0.00	0.00	0.10	2.16	2.16	0.10000	0.00	1.62	1.615	No	No

Dry tons/day of sludge \*\*\*\*  Safety Factor

\* lbs/day = mg/l \* 8.34 \* average flow / (1-%Rem)

\*\* Page 3-44 of EPA 833B87202 Be est @ 0.10 mg/l.

+ lbs/day = (dry tons/day \* 0.002 \* critria(mg/kg)) / % Rem

++ lbs/day = mg/l \* Flow \* 8.34

^ lbs/day = (1 - SF) \* MAHL

MAIL = Maximum allowable industrial loading = Allocation for % SF - Domestic

\*\*\*Rem Eff from Page 3-56 EPA 833B87202, Be & Mo est @ 50; Cu,Pb & Zn from "Rem" spreadsheet in this Workbook

\*\*\*\* Dry tons/day of sludge based on page 3 of checklist in Audit Report dated July 11, 2006.





**WQ Limits for the VNB South**

Aquatic Life	
AML, ug/l	
Cadmium Total	126.52
Chromium (hex)	108.22
Copper Total	431.63
Lead Total	587.66
Mercury Total	0.39
Nickel Total	15071.86
Selenium Total	137.76
Silver Total	112.58
Zinc Total	3461.17
Chromium (Tri)	22680.20
Cyanide Total	154.01
Beryllium Total	173.41
Arsenic	4807.76

**VNBN South**  
**REMOVAL EFFICIENCIES (% REM)**

Effluent	Date	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc	Chromium	Cyanide	Arsenic	Molybdenum	Beryllium
01/09/07	01/09/07	0.0320	0.0220	0.0170					0.1600					
04/25/07	07/11/07	0.0220	0.0170	0.0170					0.2000					
07/11/07	10/10/07	0.0180	0.0180	0.0180					0.1500					
01/30/08	01/30/08	0.0340	0.0062	0.0340					0.1900					
06/05/08	06/05/08	0.0160	0.0034	0.0160					0.2100					
07/09/08	07/09/08	0.0140	0.0050	0.0140					0.1500					
01/09/07	01/09/07	0.0005	0.0005	0.0005	0.000005	0.0005	0.0050	0.0005	0.0200	0.0100	0.0100	0.0005	0.0100	0.0005
04/25/07	04/25/07	0.02186	0.00487	0.0062	0.0000	0.0000	0.0000	0.0000	0.2100	0.0000	0.0000	0.0000	0.0000	0.0000
07/11/07	07/11/07	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.17000	0.0000	0.0000	0.0000	0.0000	0.0000
10/10/07	10/10/07	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
01/30/08	01/30/08	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
06/05/08	06/05/08	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
07/09/08	07/09/08	0.0005	0.0005	0.0005	0.000005	0.0005	0.0050	0.0005	0.0200	0.0100	0.0100	0.0005	0.0100	0.0005

Effluent	Date	Cadmium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc	Chromium	Cyanide	Arsenic	Molybdenum	Beryllium
01/09/07	01/09/07	0.0110	0.0071	0.0061					0.0680					
04/25/07	04/25/07	0.0071	0.0061	0.0061					0.0440					
07/11/07	10/10/07	0.0060	0.0060	0.0060					0.0290					
01/30/08	01/30/08	0.0110	0.0035	0.0110					0.0990					
06/05/08	06/05/08	0.0046	0.0013	0.0046					0.0380					
07/09/08	07/09/08	0.0033	0.00095	0.0033					0.0350					
01/09/07	01/09/07	0.0110	0.0071	0.0061					0.0680					
04/25/07	04/25/07	0.0071	0.0061	0.0061					0.0440					
07/11/07	10/10/07	0.0060	0.0060	0.0060					0.0290					
01/30/08	01/30/08	0.0110	0.0035	0.0110					0.0990					
06/05/08	06/05/08	0.0046	0.0013	0.0046					0.0380					
07/09/08	07/09/08	0.0033	0.00095	0.0033					0.0350					
01/09/07	01/09/07	0.0005	0.0005	0.0005	0.000005	0.0005	0.0050	0.0005	0.0200	0.0100	0.0100	0.0005	0.0100	0.0005
04/25/07	04/25/07	0.00701	0.00192	0.00192	0.0000	0.0000	0.0000	0.0000	0.0990	0.05343	0.0000	0.0000	0.0000	0.0000
07/11/07	07/11/07	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10/10/07	10/10/07	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
01/30/08	01/30/08	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
06/05/08	06/05/08	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
07/09/08	07/09/08	0.0005	0.0005	0.0005	0.000005	0.0005	0.0050	0.0005	0.0200	0.0100	0.0100	0.0005	0.0100	0.0005

Selection Level  
Average  
Maximum  
All Concs > DL (Yes/No)  
Rem  
PA % REM  
Note: The engineer considered only the pollutants with concentrations in the influent well above the method detection level.

\*EPA Page 3-59 of 833-B87-202  
 \*\*Domestic concentrations are the smaller of EPA Typical Levels and average influent values reported in the 2007 Annual Report dated October 24, 2008 except Cyanide and Beryllium (2006 Report dated October 19, 2007).

Pollutants	EPA, P3-59* mg/l	Avg Reported** mg/l	Loading lbs/day
Cadmium Total	0.0030	0.00060	0.01
Copper Total	0.0607	0.02200	0.35
Lead Total	0.0490	0.00487	0.08
Mercury Total	0.0003	0.00020	0.00
Nickel Total	0.0210	0.00600	0.10
Selenium Total	-	0.00200	0.03
Silver Total	0.0050	0.00223	0.04
Zinc Total	0.1750	2.80	2.80
Chromium Total	0.0500	0.01000	0.16
Cyanide Total	0.0410	0.01000	0.16
Arsenic	0.0030	0.00135	0.02
Molybdenum	999999.0000	16027629.17	
Beryllium	999999.00	0.00030	0.00