FORM GEN. 160 (Rev. 6-80)

CITY OF LOS ANGELES
INTER-DEPARTMENTAL CORRESPONDENCE

DATE: September 17, 2015

TO: Timeyin Dafeta, Plant Manager
Hyperion Treatment Plant

Mark Starr, Plant Manager
Terminal Island Water Reclamation Plant

FROM: Masahiro Dojiri, Division Manager
Environmental Monitoring Division

SUBJECT: **ASSESSMENT OF BIOSOLIDS FOR AUGUST 2015**

This report contains data from the analysis of composite biosolids and digested sludge samples collected in August 2015 at the Hyperion Treatment Plant and Terminal Island Water Reclamation Plant, respectively. The samples were tested in accordance with EPA's Part 503 Sewage Sludge Regulations, Tables 1 and 3, to furnish a beneficial use assessment. Analyses were also performed to determine if pathogen and vector control requirements of Part 503 were met.

Hyperion Treatment Plant

The metals and nutrient analyses data are presented in Tables 1 and 2 of this report. All metals detected in the composite sample were below their respective ceiling and pollutant concentration limits listed in EPA 40 CFR 503.13, Tables 1 and 3. Molybdenum, Zinc, Sodium, and Organic-N results for August were slightly higher than their 12-month averages (Table 1 and 2). Please note that the concentration of Nitrate-N was substantially higher than its 12-month average (Table 2). Also for August, fecal coliform and *Salmonella* results were below the EPA 40 CFR Part 503 limit for Class A biosolids (Table 6). The August helminth ova and enteric virus results were below the limits for Class A biosolids. The August dioxin and polychlorinated biphenyl results were non-detect (Table 5).

Terminal Island Water Reclamation Plant

Beginning in July 2010, TIWRP began injecting digested sludge into TIRE with a goal of 100% injection, but may occasionally produce biosolids due to operational logistics.

No TIWRP biosolids analyses were required in August per the sampling schedule.

Graphs of the concentrations of selected metals in HTP and TIWRP biosolids and digested sludge over the past 24 months are shown in Figures 1 through 10.

If you have any questions about this report, please contact Kay Yamamoto of my staff at (310) 648-5727.

RV/MAD:rv

Attachment: Appendix 1 - Arizona ELAP-Certified Monthly Biosolids Monitoring Report with Class A and B Microbiological Requirements.

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Table 1. BENEFICIAL USE ASSESSMENT OF BIOSOLIDS AT HYPERION TREATMENT PLANT

Sampling Date	pH	%TS	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Copper (Cu)	Molybdenum (Mo)	Lead (Pb)	Mercury (Hg)	Nickel (Ni)	Selenium (Se)	Zinc (Zn)
			mg/kg dry weight									
Aug-15	8.6	27.3	ND	10.4	45.4	758	24.2	23.8	1.01	40.3	ND	1,200
Jul-15	8.7	25.5	ND	11.2	47.8	780	23.5	23.5	1.53	42.7	ND	1,210
Jun-15	8.8	27.2	0.735	11.8	57.4	750	19.9	24.6	1.61	43.4	ND	1,180
May-15	8.7	26.6	0.752	11.8	70.3	767	20.7	29.7	1.32	45.9	ND	1,290
Apr-15	8.0	27.8	1.98	13.6	70.5	791	19.6	30.9	1.53	48.2	6.12	1,370
Mar-15	8.7	24.2	ND	11.8	56.2	802	19.4	26.3	1.71	46.3	3.55	1,240
Feb-15	8.5	27.2	ND	17.8	50.4	688	18.1	23.5	1.81	36.0	5.22	1,040
Jan-15	8.2	27.6	ND	8.15	45.7	728	17.2	22.1	1.16	37.7	4.46	942
Dec-14	8.3	26.7	ND	11.1	40.4	794	21.6	22.8	1.56	39.3	5.58	996
Nov-14	8.3	28.0	ND	4.75	41.4	864	15.3	12.5	1.71	35.6	ND	1,060
Oct-14	8.6	27.1 ^	ND	8.12	47.6	893	26.8	24.4	1.44	35.4	3.76	1,050
Sep-14	8.1	33.2	ND	8.19	39.8	741	20.3	19.4	1.05	30.7	2.77	907
Average	8.5	27.4	0.289	10.7	51.1	780	20.5	23.6	1.45	40.1	2.62	1,120
Maximum	8.8	33.2	1.98	17.8	70.5	893	26.8	30.9	1.81	48.2	6.12	1,370
Minimum	8.0	24.2	ND	4.75	39.8	688	15.3	12.5	1.01	30.7	ND	907
Ceiling Conc.*			75	85	***	4300	75	840	57	420	100	7500
Pollutant Conc.**			41	39	***	1500	***	300	17	420	100	2800

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WISARD - Biosolids Management - HTP TITP Biosolids

^ The value represents the average of two analysis performed for the month
* Ceiling concentration in Table 1 of EPA Part 503 Sludge Regulation.
** Pollutant concentration in Table 3 of EPA Part 503 Sludge Regulation
*** Limit was deleted according to Federal Register Vol. 60, No. 206 of Oct. 25, 1995

Table 2. HTP BIOSOLIDS - NUTRIENTS AND MISC. METALS - EVALUATION FOR LOADING PURPOSES

Sampling Date	%TS	Aluminum (Al)	Calcium (Ca)	Iron (Fe)	Potassium (K)	Magnesium (Mg)	Nitrate-N (NO3-N)	Phosphorus (Tot-P)	Sodium (Na)	Ammonia-N (NH3-N)	Organic-N (Org-N)
	mg/kg dry weight										
Aug-15	27.3	4,100	41,400	28,900	1,090	6,590	25.6	27,200	1,540	7,910	45,400
Jul-15	25.5	4,500	37,800	38,500	2,350	7,100	23.5	27,800	1,660	10,000	39,000
Jun-15	27.2	4,300	38,200	34,900	1,220	6,760	29.4	30,600	1,380	7,460	39,700
May-15	26.6	4,700	42,100	35,200	1,380	5,790	15.0	27,000	1,320	7,140	40,600
Apr-15	27.8	4,400	46,400	43,200	1,770	7,810	10.8	24,800	1,430	6,800	34,300
Mar-15	24.2	4,100	47,100	43,800	1,490	8,060	8.26	31,800	1,560	8,260	51,700
Feb-15	27.2	3,800	44,900	39,300	1,320	7,280	18.4	27,500	1,330	9,040	45,600
Jan-15	27.6	3,800	40,600	43,100	1,570	7,170	18.1	28,600	1,160	7,610	39,100
Dec-14	26.7	4,500	43,400	42,700	1,920	6,930	22.5	29,100	1,460	7,870	37,200
Nov-14	28.0	4,400	42,500	39,300	1,080	7,000	10.7	28,600	1,350	7,680	41,100
Oct-14	27.1 ^	4,300	40,600	44,600	1,310	7,120	18.5	31,800	1,340	8,410	39,900
Sep-14	33.2	3,700	34,600	37,300	1,340	5,930	6.02	23,000	1,170	6,900	32,200
Average	27.4	4,220	41,600	39,200	1,490	6,960	17.2	28,200	1,390	7,930	40,500
Maximum	33.2	4,700	47,100	44,600	2,350	8,060	29.4	31,800	1,660	10,000	51,700
Minimum	24.2	3,700	34,600	28,900	1,080	5,790	6.02	23,000	1,160	6,800	32,200

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^ The value represents the average of two analysis performed for the month

Table 3. BENEFICIAL USE ASSESSMENT OF BIOSOLIDS AT TERMINAL ISLAND WATER RECLAMATION PLANT

Sampling Date	pH	%TS	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Copper (Cu)	Molybdenum (Mo)	Lead (Pb)	Mercury (Hg)	Nickel (Ni)	Selenium (Se)	Zinc (Zn)
	mg/kg dry weight											
Aug-15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Jul-15	7.5	1.8	ND	5.62	23.6	169	22.5	11.2	1.89	28.1	33.7	1,060
Jun-15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
May-15	7.3	1.6	ND	7.32	28.0	207	30.5	18.3	2.62	36.6	48.8	1,160
Apr-15	7.7	1.6	ND	4.32	ND	181	25.3	14.8	4.65	ND	59.3	1,050
Mar-15	7.6	1.7	ND	4.14	ND	135	17.2	11.2	1.11	ND	33.7	899
Feb-15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Jan-15	7.7	1.7	ND	3.49	ND	153	30.2	15.7	1.20	ND	29.7	826
Dec-14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nov-14	7.6	1.8	ND	ND	20.7	197	25.1	7.82	2.06	22.3	27.4	855
Oct-14	7.6	1.8 ^	ND	3.80	ND	198	28.3	12.5	1.00	ND	42.4	837
Sep-14	7.6	1.5	ND	4.05	ND	255	33.1	14.2	0.932	ND	46.6	885
Average	7.6	1.7	ND	4.09	9.05	187	26.5	13.2	1.93	10.9	40.2	947
Maximum	7.7	1.8	ND	7.32	28.0	255	33.1	18.3	4.65	36.6	59.3	1,160
Minimum	7.3	1.5	ND	ND	ND	135	17.2	7.82	0.932	ND	27.4	826
Ceiling Conc.*			75	85	***	4300	75	840	57	420	100	7500
Pollutant Conc.**			41	39	***	1500	***	300	17	420	100	2800

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^ The value represents the average of two analysis performed for the month
* Ceiling concentration in Table 1 of EPA Part 503 Sludge Regulation.
** Pollutant concentration in Table 3 of EPA Part 503 Sludge Regulation

Table 4. TIWRP BIOSOLIDS - NUTRIENTS AND MISC. METALS - EVALUATION FOR LOADING PURPOSES

Sampling Date	%TS	Aluminum (Al)	Calcium (Ca)	Iron (Fe)	Potassium (K)	Magnesium (Mg)	Nitrate-N (NO3-N)	Phosphorus (Tot-P)	Sodium (Na)	Ammonia-N (NH3-N)	Organic-N (Org-N)
	mg/kg dry weight										
Aug-15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Jul-15	1.8	4,300	25,300	43,600	8,880	10,600	ND	27,600	37,100	57,900	34,600
Jun-15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
May-15	1.6	4,900	28,900	52,000	9,510	9,630	ND	26,500	43,500	58,500	21,500
Apr-15	1.6	3,600	29,000	52,500	10,600	10,900	ND	28,600	44,700	62,400	32,500
Mar-15	1.7	2,800	29,800	55,600	10,100	11,500	ND	27,500	45,500	59,200	31,200
Feb-15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Jan-15	1.7	2,700	25,800	40,700	10,300	11,200	ND	29,100	41,100	67,400	33,600
Dec-14	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nov-14	1.8	3,700	27,700	35,400	ND	12,400	ND	30,700	45,900	53,500	30,700
Oct-14	1.8 ^	2,900	28,600	40,600	9,460	11,100	ND	32,000	41,500	28,200	51,700
Sep-14	1.5	4,100	31,600	45,900	10,700	13,700	ND	26,600	51,000	52,900	41,100
Average	1.7	3,600	28,300	45,800	8,700	11,400	ND	28,600	43,800	55,000	34,600
Maximum	1.8	4,900	31,600	55,600	10,700	13,700	ND	32,000	51,000	67,400	51,700
Minimum	1.5	2,700	25,300	35,400	ND	9,630	ND	26,500	37,100	28,200	21,500

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^ The value represents the average of two analysis performed for the month
NS No Sampling Required

Table 5. CONCENTRATIONS OF DIOXIN AND PCBs IN HTP AND TIWRP BIOSOLIDS

Sampling Date	Dioxin 2,3,7,8-TCDD (ppb ng/g wet wt.)	PCBs** AR 1016	AR 1221	AR 1232	AR 1242	AR 1248	AR 1254	AR 1260	Total PCBs*** ppm (mg/kg wet wt.)
		ppm (mg/kg) wet weight							
HTP BIOSOLIDS									
Aug-15	<0.50000 *	<0.00430	<0.02500	<0.02400	<0.00620	<0.00440	<0.00830	<0.00290	ND
Jul-15	<0.00100 ^^	<0.00430	<0.02500	<0.02400	<0.00620	<0.00440	<0.00830	<0.00290	ND
Jun-15	<0.50000 *	<0.00430	<0.02500	<0.02400	<0.00620	<0.00440	<0.00830	<0.00290	ND
May-15	<0.50000 *	<0.00430	<0.02500	<0.02400	<0.00620	<0.00440	<0.00830	<0.00290	ND
Apr-15	<0.00100 ^^	<0.00430	<0.02500	<0.02400	<0.00620	<0.00440	<0.00830	<0.00290	ND
Mar-15	<0.50000 *	<0.00430	<0.02500	<0.02400	<0.00620	<0.00440	<0.00830	<0.00290	ND
Feb-15	<0.50000 *	<0.00430	<0.02500	<0.02400	<0.00620	<0.00440	<0.00830	<0.00290	ND
Jan-15	<0.00100 ^^	<0.00300	<0.01100	<0.00630	<0.00320	<0.00670	<0.00640	<0.00440	ND
Dec-14	<0.50000 *	<0.01700	<0.03000	<0.02100	<0.02400	<0.03800	<0.02600	<0.00130	ND
Nov-14	<0.50000 *	<0.01700	<0.03000	<0.02100	<0.02400	<0.03800	<0.02600	<0.00130	ND
Oct-14	<0.00100 ^^	<0.01700	<0.03000	<0.02100	<0.02400	<0.03800	<0.02600	<0.00130	ND
Sep-14	<0.50000 *	<0.02000	<0.03000	<0.02000	<0.02000	<0.04000	<0.02000	<0.00400	ND
TIWRP BIOSOLIDS / DIGESTED SLUDGE @, #									
Aug-15	NS	NS	NS	NS	NS	NS	NS	NS	NS
Jul-15	<0.00100 ^^	<0.00430	<0.02500	<0.02400	<0.00620	<0.00440	<0.00830	<0.00290	ND
Jun-15	NS	NS	NS	NS	NS	NS	NS	NS	NS
May-15	<0.50000 *	<0.00430	<0.02500	<0.02400	<0.00620	<0.00440	<0.00830	<0.00290	ND
Apr-15	<0.00100 ^^	<0.00430	<0.02500	<0.02400	<0.00620	<0.00440	<0.00830	<0.00290	ND
Mar-15	<0.50000 *	<0.00430	<0.02500	<0.02400	<0.00620	<0.00440	<0.00830	<0.00290	ND
Feb-15	NS	NS	NS	NS	NS	NS	NS	NS	NS
Jan-15	<0.00100 ^^	<0.00300	<0.01100	<0.00630	<0.00320	<0.00670	<0.00640	<0.00440	ND
Dec-14	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nov-14	<0.50000 *	<0.01700	<0.03000	<0.02100	<0.02400	<0.03800	<0.02600	<0.00130	ND
Oct-14	<0.00100 ^^	<0.01700	<0.03000	<0.02100	<0.02400	<0.03800	<0.02600	<0.00130	ND
Sep-14	<0.50000 *	<0.02000	<0.03000	<0.02000	<0.02000	<0.04000	<0.02000	<0.00400	ND

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* Low Resolution 2,3,7,8-TCDD analysis by method EPA 8280A.
^^ High resolution 2,3,7,8-TCDD analysis by method EPA 1613B.
** Polychlorinated biphenyls (Arochlors)
*** Sum of AR 1016, AR 1221, AR 1232, AR 1242, AR 1248, AR 1254, AR 1260

ND Not Detected
NS No Sampling Required
@ Sampling frequency for TIWRP is 6 months/year. The sampling months are: Jan, Mar, May, Jul, Sep and Nov.
\# TIWRP changed from analyzing Biosolids to analyzing Digested Sludge in July 2010

Note: California Title 22 lists 10 ppb for Dioxin and 50 ppm for PCBs as the Total Threshold Limit Concentration (TTLC) for hazardous waste

Table 6. HTP BIOSOLIDS - CLASS A COMPLIANCE MONITORING DATA

Sampling Date	%TS	FECAL COLIFORM MPN/gram TS (dry wt)		SALMONELLA, sp. MPN/4 grams TS (dry wt)		HELMINTH OVA Viable Helminth Ova/4 grams TS (dry wt)			ENTERIC VIRUS PFU/4 grams TS (dry wt)		
		Silo#/Farm		Silo#/Farm		Raw Sludge	Silo#/Farm		Raw Sludge	Silo#/Farm	
August 4, 2015	26.2	Silo	<6.9	Silo	<1.5	3.4	Silo	<0.5	8.8	Silo	<0.4
July 7, 2015	25.7	Farm	<7.0	Farm	<1.6	3.7	Farm	<0.5	9.8	Farm	<0.5
June 9, 2015	26.5	Silo #3	<6.8	Silo #3	<1.7	4.7	Silo #3	<0.5	9.9	Silo #3	<0.5
May 5, 2015	25.1	Silo	<7.2	Silo	<1.6	4.6	Silo	<0.5	11.6	Silo	<0.5
April 7, 2015	24.6	Farm	8.1	Farm	<1.7	1.9	Farm	<0.5	8.6	Farm	<0.5
March 10, 2015	26.8	Silo	7.5	Silo	<1.6	5.5	Silo	<0.5	4.8	Silo	<0.4
February 10, 2015	26.3	Silo #3	103.4	Silo #3	<1.6	8.5	Silo #3	<0.5	17.0	Silo #3	<0.5
January 6, 2015	26.8	Farm	<6.7	Farm	<1.5	6.3	Farm	<0.5	6.0	Farm	<0.5
December 9, 2014	27.1	Silo #2	16.6	Silo #2	<1.5	5.5	Silo #2	<0.5	8.2	Silo #2	<0.5
November 4, 2014	25.9	Silo #2	<6.9	Silo #2	<1.6	6.0	Silo #2	<0.5	15.2	Silo #2	<0.5
October 7, 2014	26.4	Farm	<6.8	Farm	<1.6	9.4	Farm	<0.5	13.2	Farm	<0.5
September 9, 2014	26.6	Silo #2	<6.8	Silo #2	<1.3	7.5	Silo #2	<0.5	5.4	Silo #2	<0.5
Requirement**			<1000		<3			<1			<1

* - EPA 40 CFR Part 503 Class A requirements
NA - Data not yet available from Biovir.
NS - No Sampling Required

Table 7. TIWRP BIOSOLIDS - CLASS A COMPLIANCE MONITORING DATA

Sampling Date	TOTAL SOLIDS % Silo#/Farm 6 Times/Year@		FECAL COLIFORM MPN/gram TS (dry wt) Silo#/Farm 6 Times/Year@		SALMONELLA, sp. MPN/4 grams TS (dry wt) Silo#/Farm Quarterly	
Aug-15	NS	NS	NS	NS	NS	NS
Jul-15	TIWRP Digester Sludge	2.00	TIWRP Digester Sludge	<9.0	TIWRP Digester Sludge	<1.6
Jun-15	NS	NS	NS	NS	NS	NS
May-15	TIWRP Digester Sludge	1.77	TIWRP Digester Sludge	<10.2	TIWRP Digester Sludge	<1.5
Apr-15	NS	NS	NS	NS	NS	NS
Mar-15	TIWRP Digester Sludge	1.66	TIWRP Digester Sludge	<10.8	TIWRP Digester Sludge	<1.4
Feb-15	NS	NS	NS	NS	NS	NS
Jan-15	TIWRP Digester Sludge	1.60	TIWRP Digester Sludge	<11.3	TIWRP Digester Sludge	NT
Dec-14	NS	NS	NS	NS	NS	NS
Nov-14	TIWRP Digester Sludge	1.83	TIWRP Digester Sludge	<9.8	TIWRP Digester Sludge	<1.6
Oct-14	NS	NS	NS	NS	NS	NS
Sep-14	TIWRP Digester Sludge	1.61	TIWRP Digester Sludge	<11.2	TIWRP Digester Sludge	<2.0
Requirement*				<1000		<3

* - EPA 40 CFR Part 503 Class A requirements
NS - No Sampling Required
@ - Sampling frequency for TIWRP is 6 months/year. The sampling months are: Jan, Mar, May, Jul, Sep and Nov.

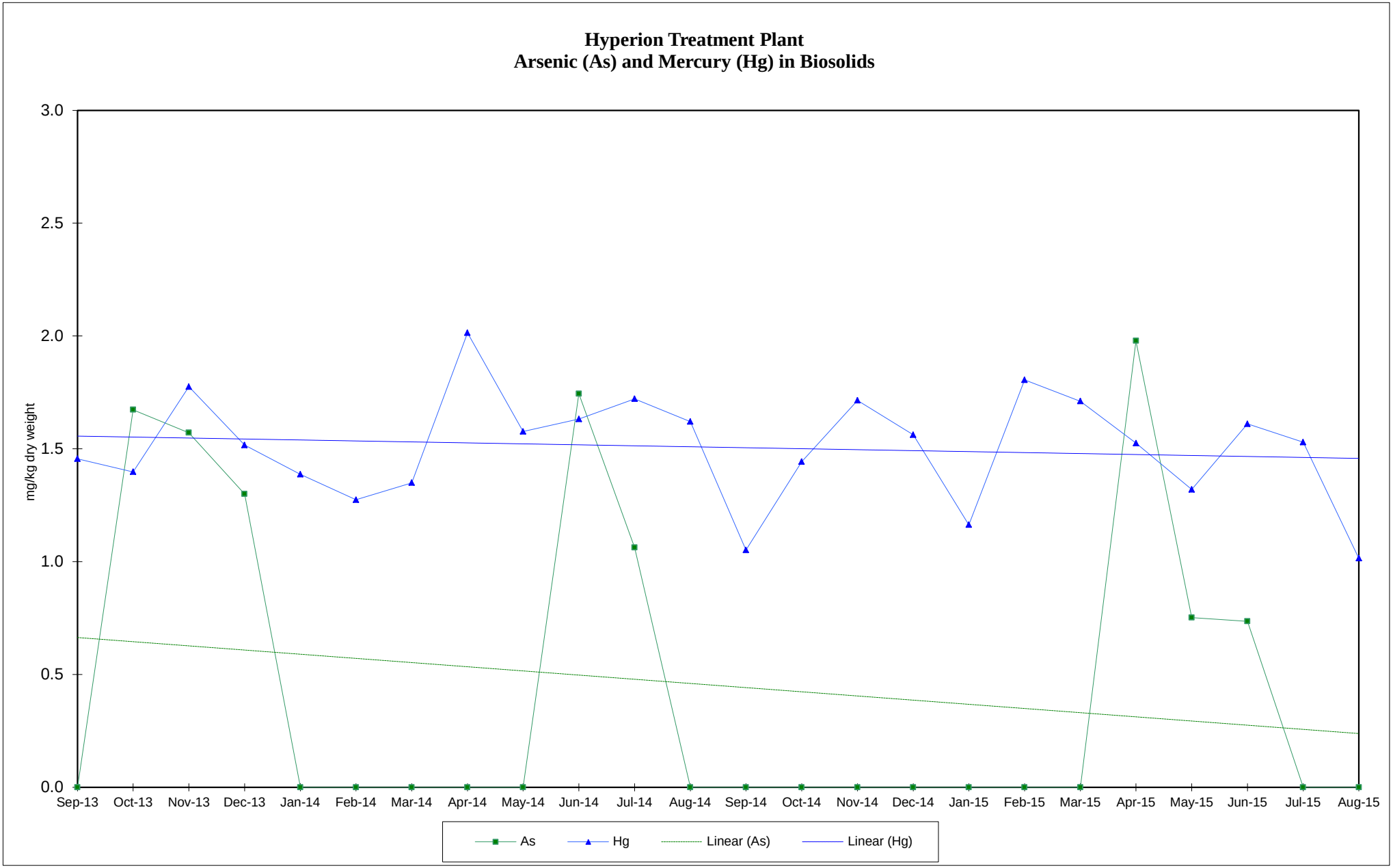

Figure 1. Concentrations of arsenic and mercury in HTP biosolids from September 2013 to August 2015

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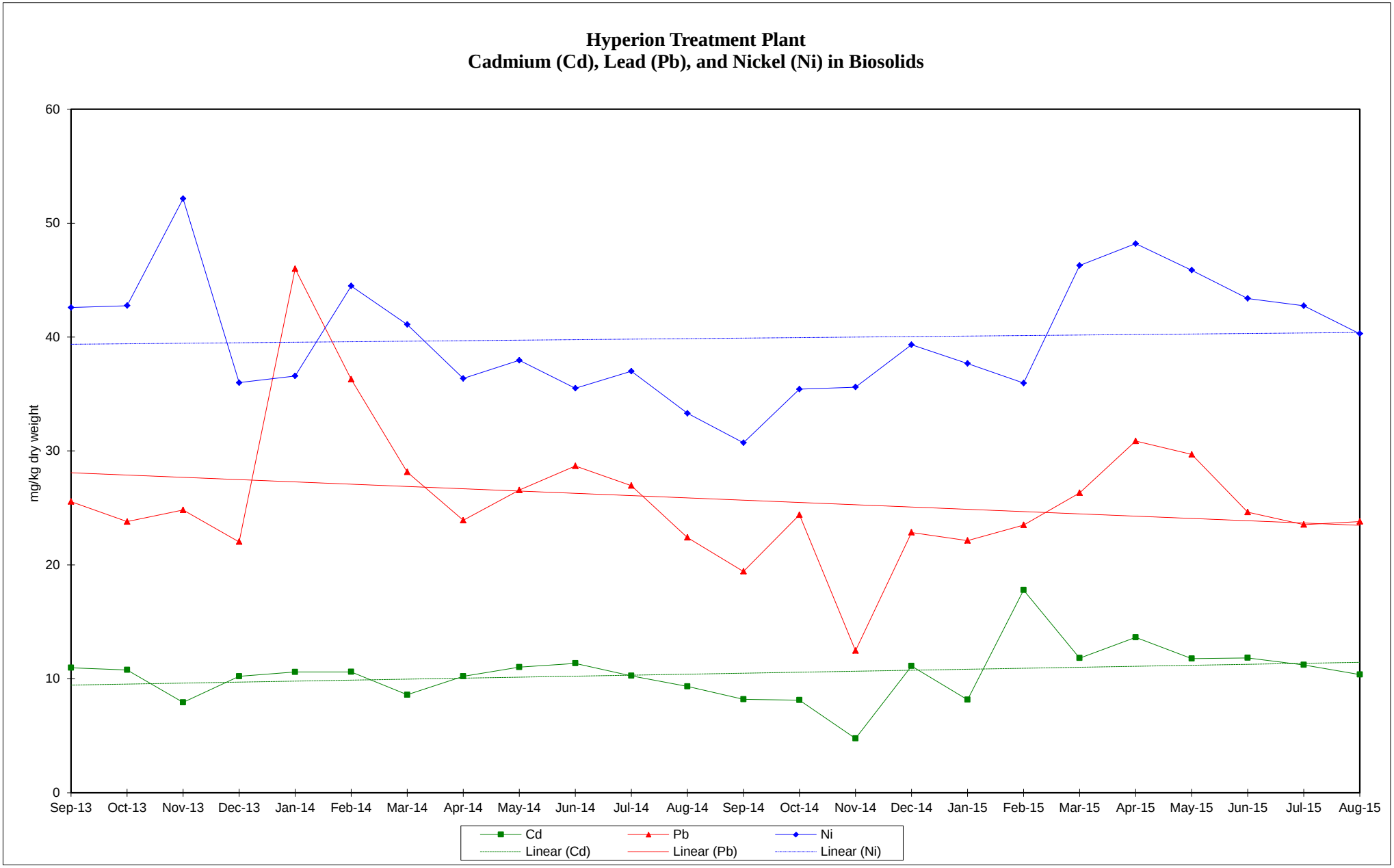

Figure 2. Concentrations of cadmium, lead, and nickel in HTP biosolids from September 2013 to August 2015

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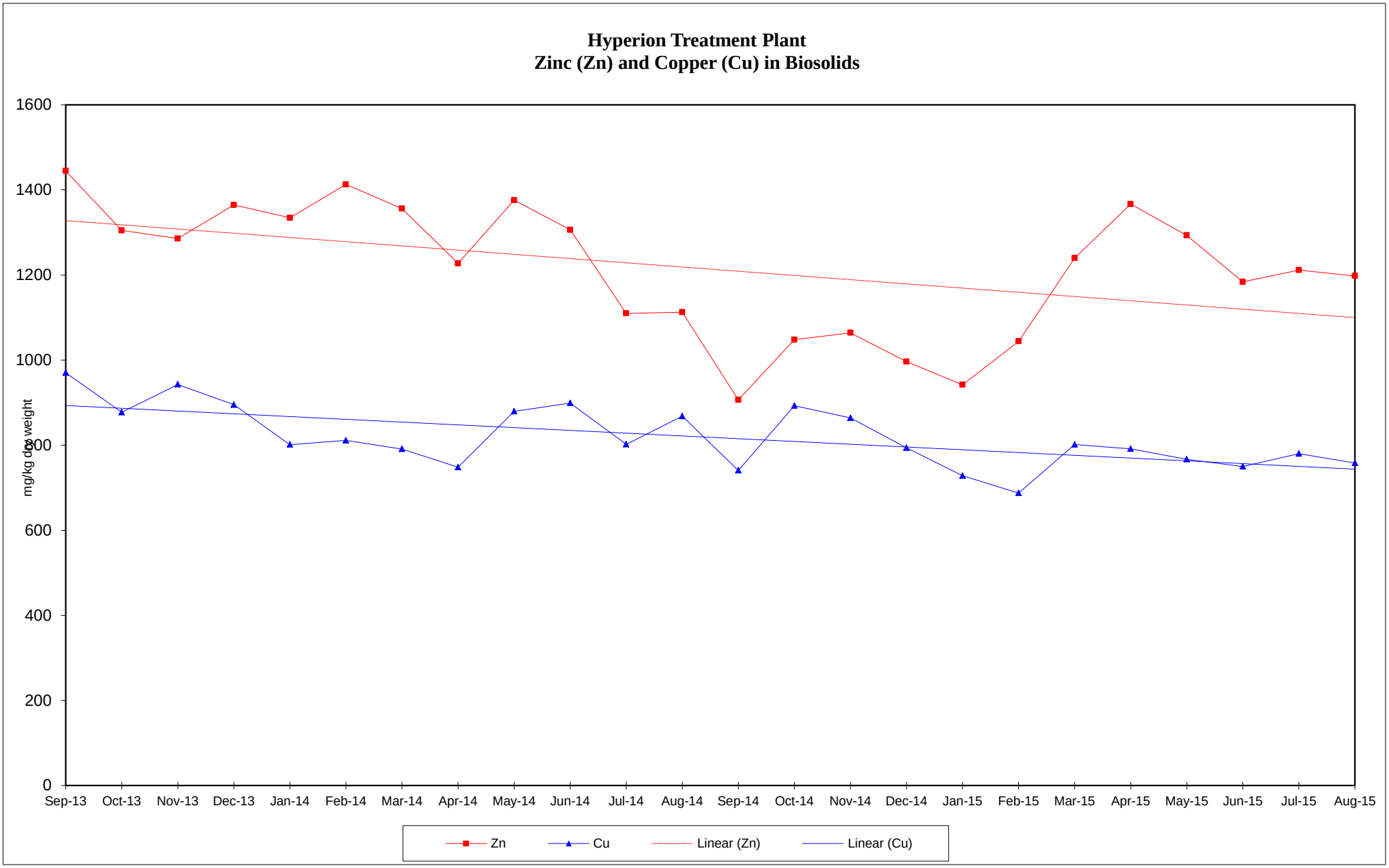

Figure 3. Concentrations of zinc and copper in HTP biosolids from September 2013 to August 2015

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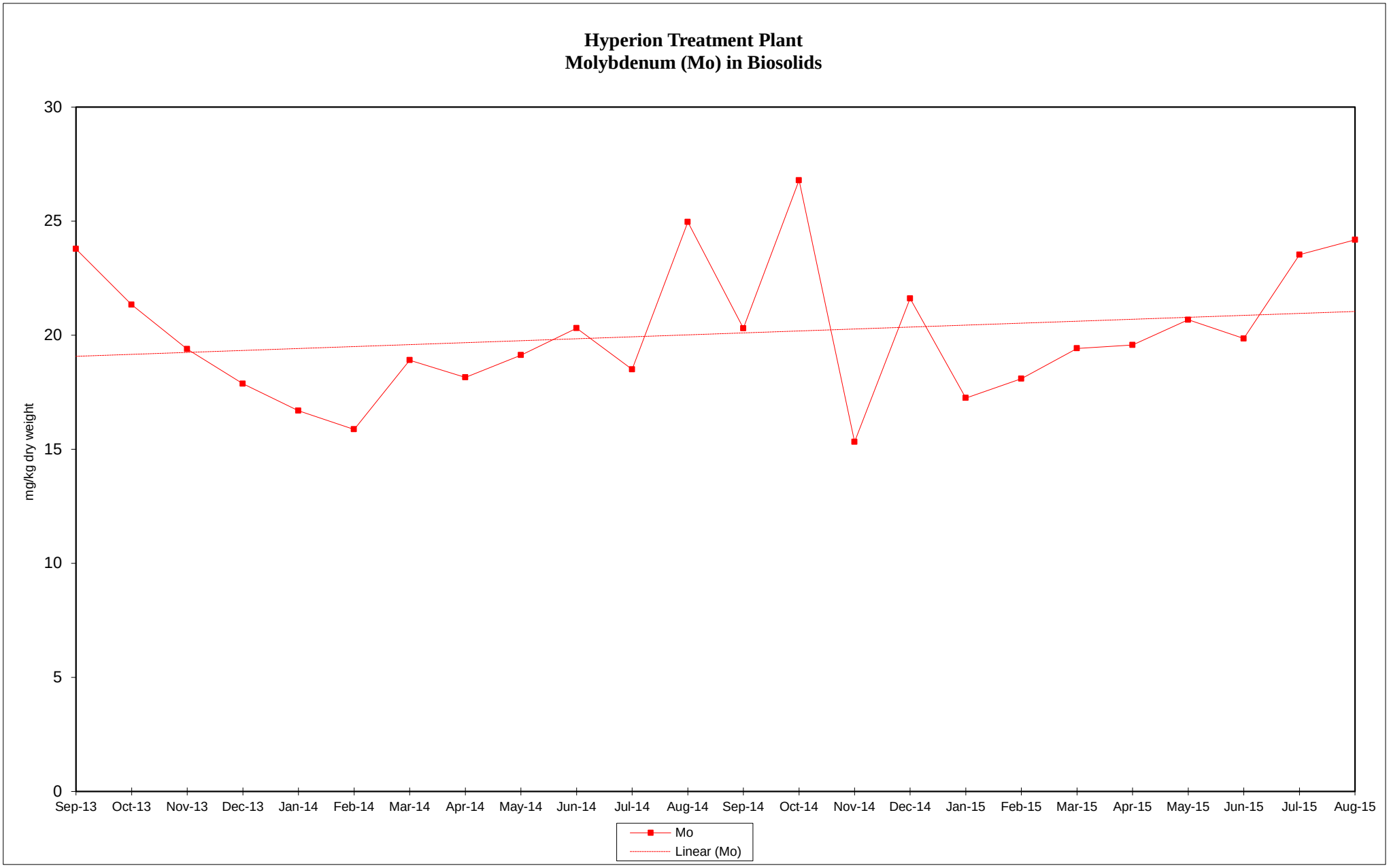

Figure 4. Concentrations of molybdenum in HTP biosolids from September 2013 to August 2015

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WISARD - Biosolids Management - HTP TITP Biosolids

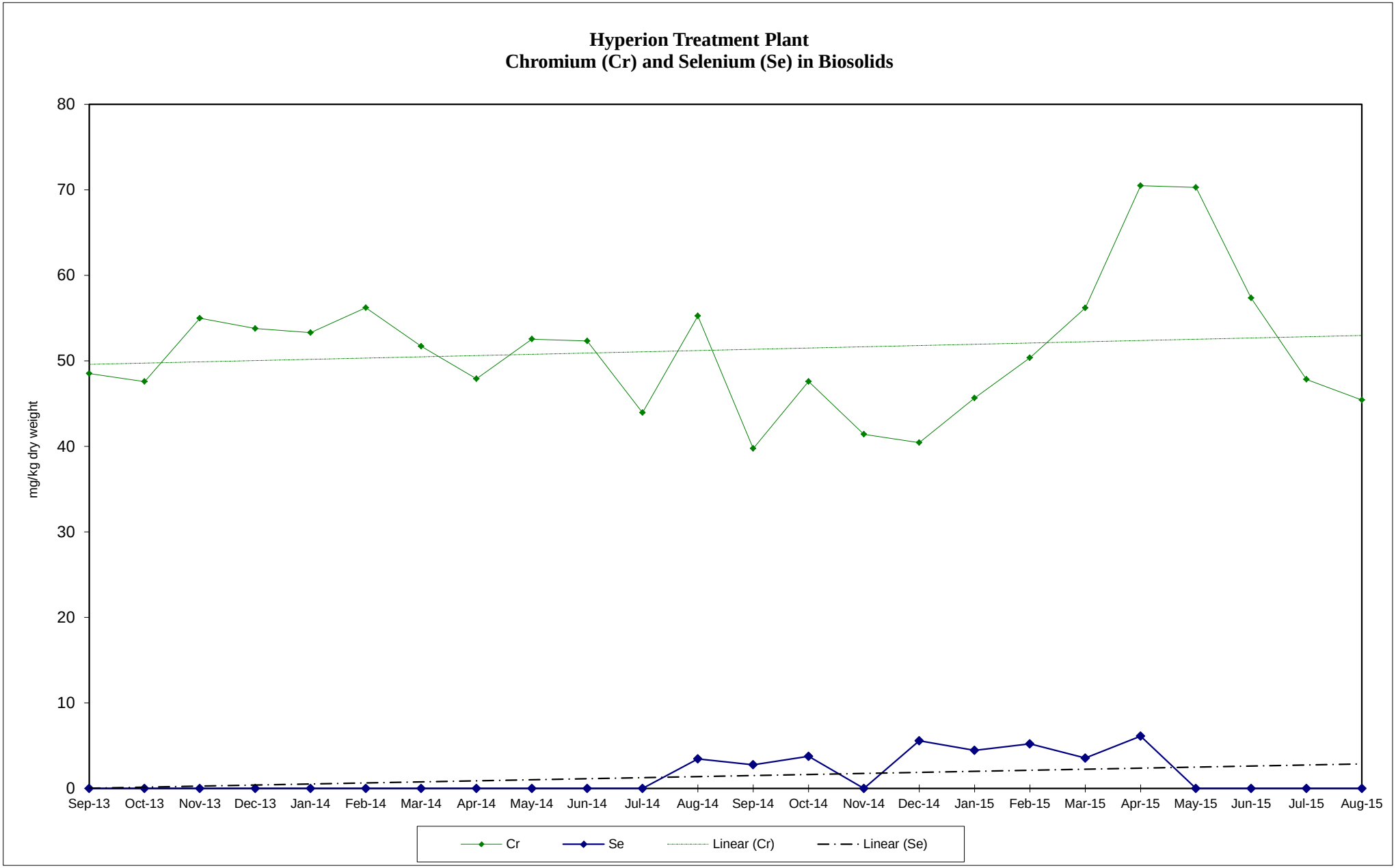

Figure 5. Concentrations of chromium and selenium in HTP biosolids from September 2013 to August 2015

Generated by RVALENZU at 09/09/2015 09:37:15 AM using the Production Database and WISARD V2.0

WISARD - Biosolids Management - HTP TITP Biosolids

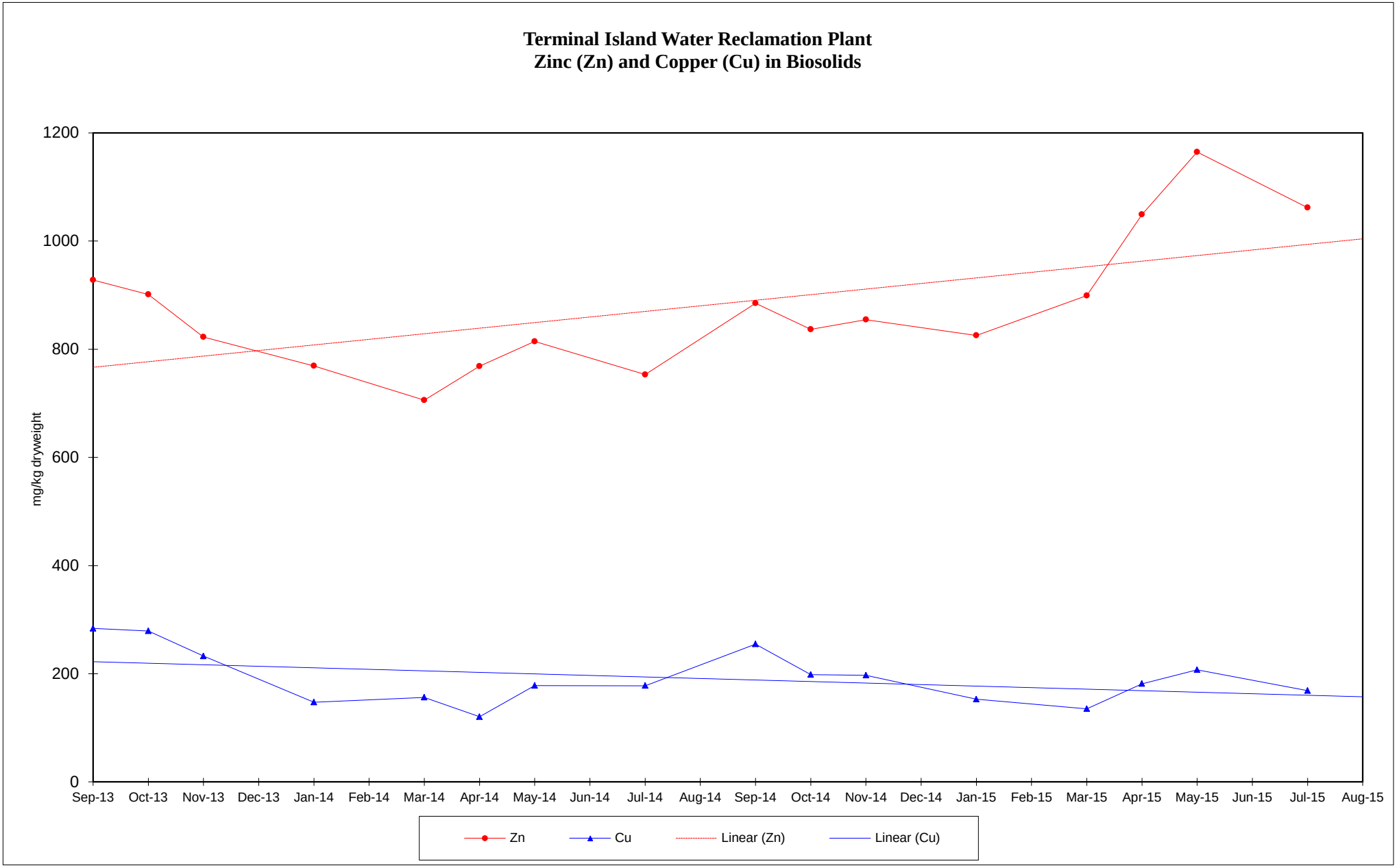

Figure 6. Concentrations of zinc and copper in TIWRP biosolids from September 2013 to August 2015

Generated by RVALENZU at 09/09/2015 09:37:15 AM using the Production Database and WISARD V2.0
WISARD - Biosolids Management - HTP TITP Biosolids

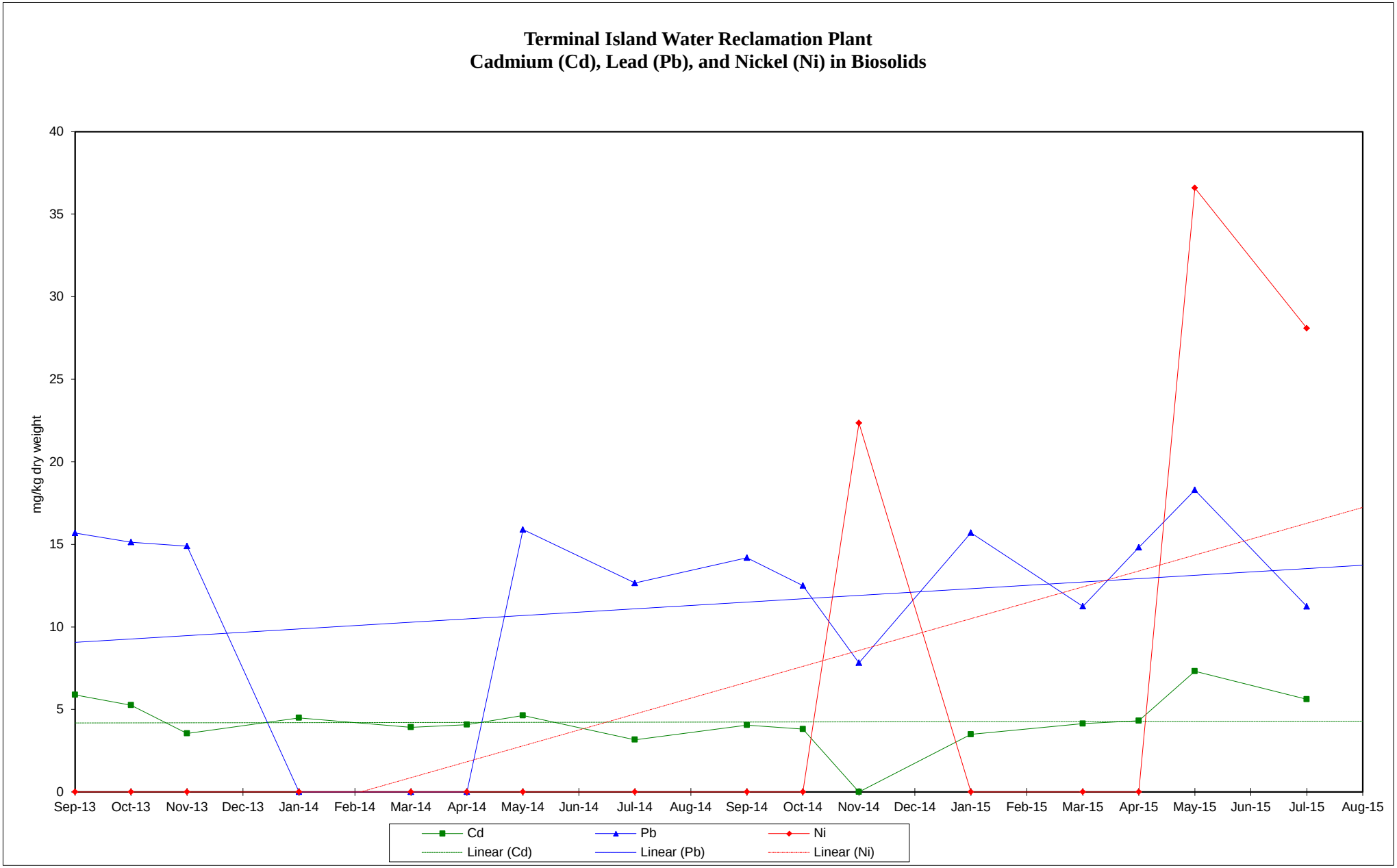

Figure 7. Concentrations of cadmium, lead, and nickel in TIWRP biosolids from September 2013 to August 2015

Generated by RVALENZU at 09/09/2015 09:37:15 AM using the Production Database and WISARD V2.0
WISARD - Biosolids Management - HTP TITP Biosolids

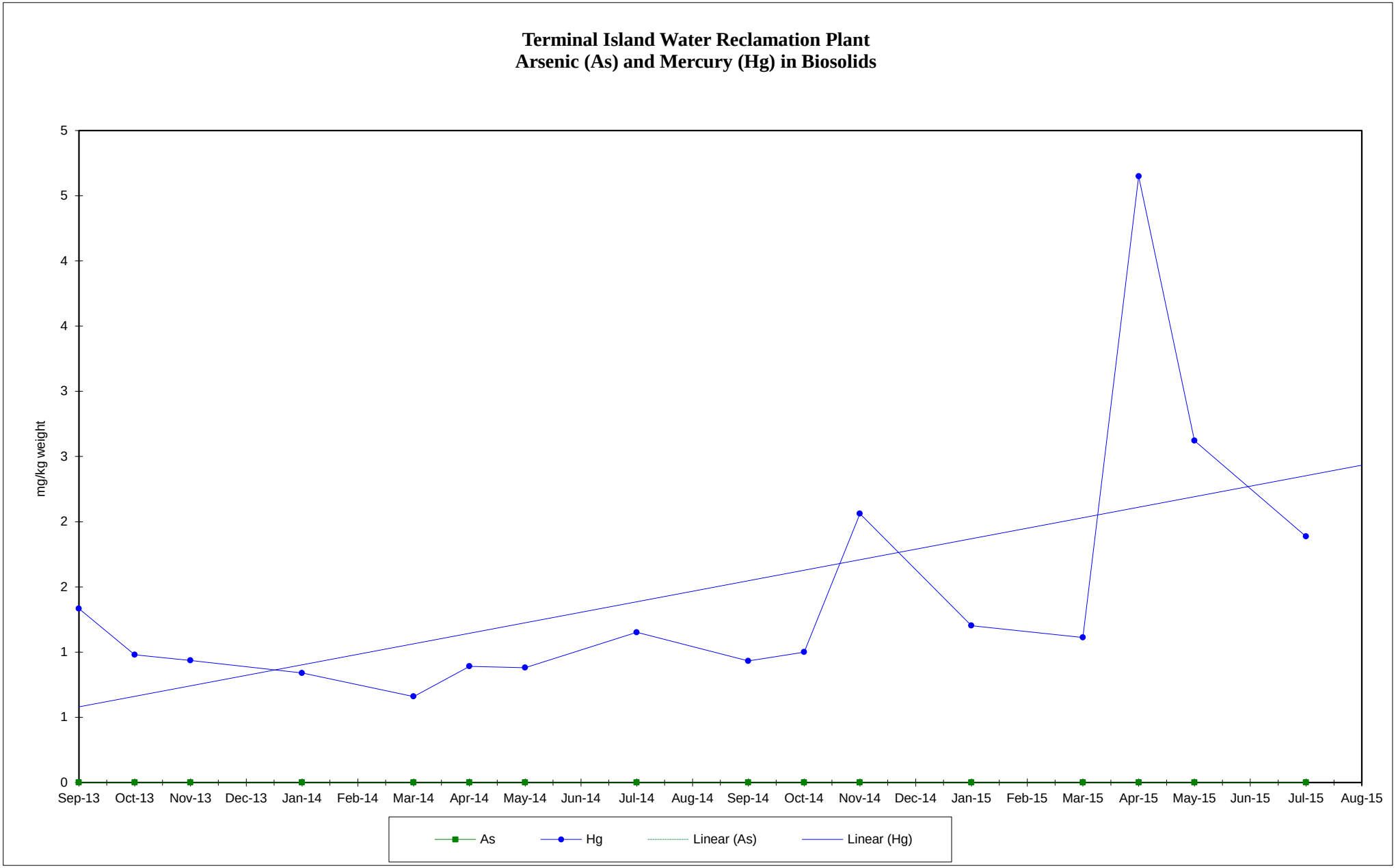

Figure 8. Concentrations of arsenic and mercury in TIWRP biosolids from September 2013 to August 2015

Generated by RVALENZU at 09/09/2015 09:37:15 AM using the Production Database and WISARD V2.0

WISARD - Biosolids Management - HTP TITP Biosolids

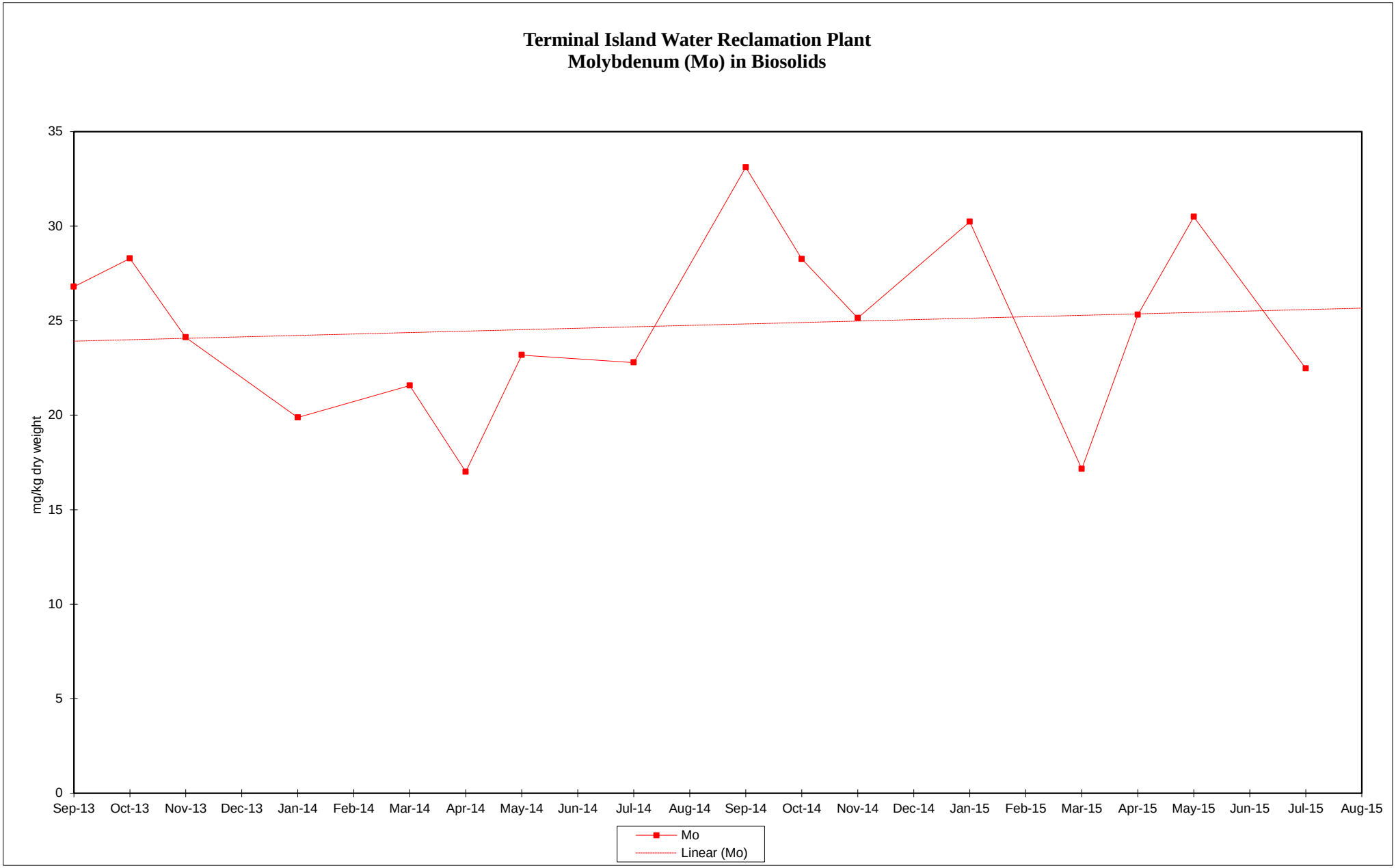

Figure 9. Concentrations of molybdenum in TIWRP Biosolids from September 2013 to August 2015

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WISARD - Biosolids Management - HTP TITP Biosolids

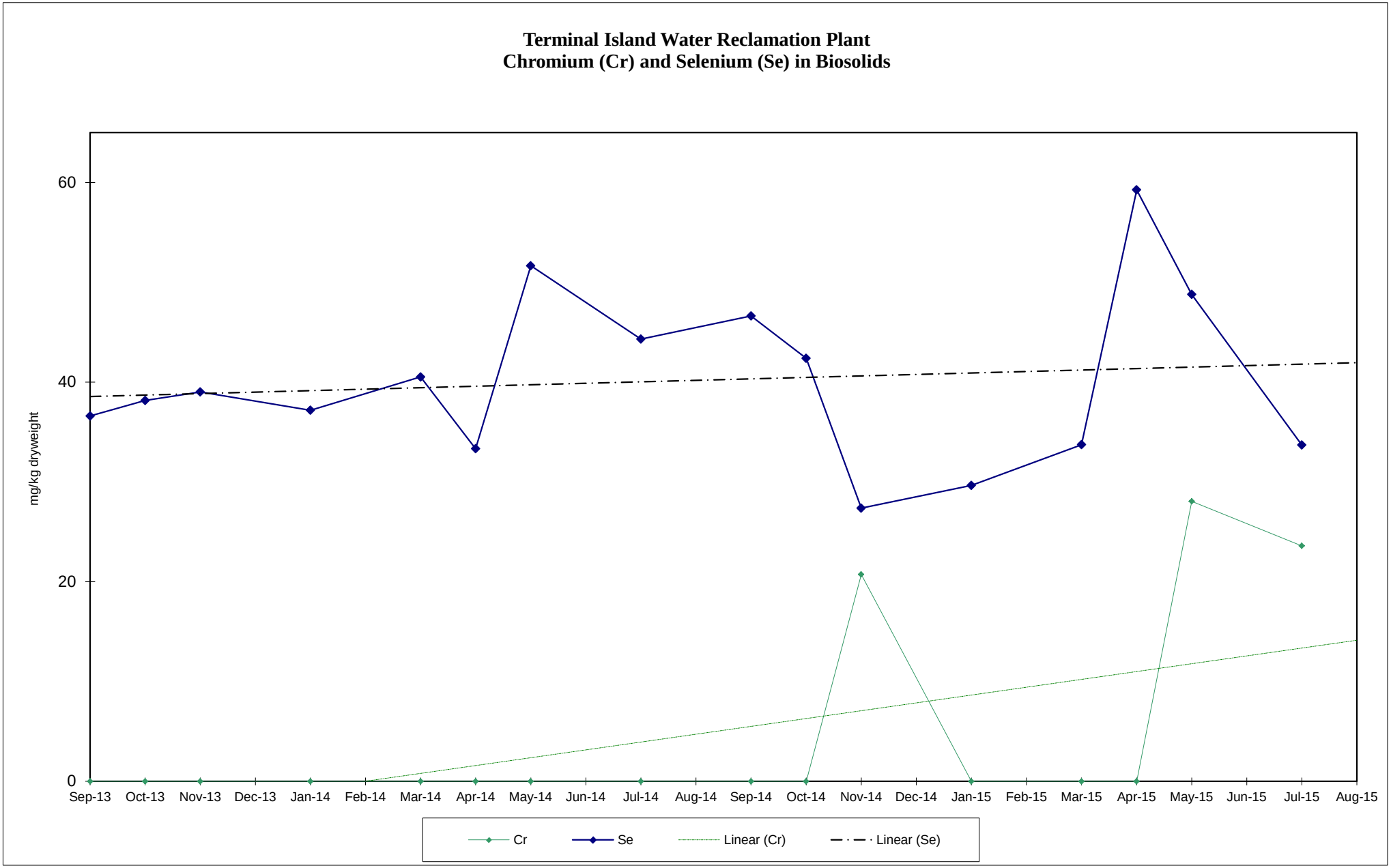

Figure 10. Concentrations of chromium and selenium in TIWRP biosolids from September 2013 to August 2015

Generated by RVALENZU at 09/09/2015 09:37:15 AM using the Production Database and WISARD V2.0

WISARD - Biosolids Management - HTP TITP Biosolids

HYPERION TREATMENT PLANT
MONTHLY BIOSOLIDS MONITORING REPORT FOR ARIZONA STATE
August 2015

Analyzed by Environmental Monitoring Division : Arizona ELAP Lic. No. AZ0690
Dept. of Public Works/ Bureau of Sanitation
City of Los Angeles, CA

Table 1. TOTAL SOLIDS AND TOTAL VOLATILE SOLIDS

Sample date: 08/01/2015

Method No. SM 2540 G

Sample*	Total Solids %	Total Volatile Solids %
Raw Sludge	3.06	78.3
TWAS	4.68	80.9
Digested Sludge	1.81	65.5

Table 2. BENEFICIAL USE ASSESSMENT OF BIOSOLIDS* : METALS DATA

Sample date: 08/01/2015

Parameters	Total Solids	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Copper (Cu)	Molybdenum (Mo)	Lead (Pb)	Nickel (Ni)	Selenium (Se)	Zinc (Zn)	Mercury (Hg)
Method No.	SM 2540 G	EPA 3050/ EPA 6010B									EPA 7471A
Unit	%	mg/kg dry weight									
Results	27.3	ND	10.4	45.4	758	24.2	23.8	40.3	ND	1,200	1.01
Ceiling Conc.**	----	75	85	****	4300	75	840	420	100	7500	57
Pollutant Conc.***	----	41	39	****	1500	****	300	420	100	2800	17

TABLE 3. BIOSOLIDS^ - CLASS B COMPLIANCE MICROBIOLOGICAL MONITORING DATA

Sample Date				4-Aug	5-Aug	6-Aug	7-Aug	10-Aug	11-Aug	12-Aug	Geomean
PARAMETERS	Method #	Unit	Req #								
Total Solids	SM 2540G	%	-----	1.98	0.76	1.95	2.38	2.30	2.20	1.87	
Fecal Coliform	SM 9221E	MPN/gram TS(dry wt.)	<2,000,000	4.0E+04	<2.4E+03	6.7E+04	9.2E+04	2.3E+06	5.9E+04	<9.6E+02	<3.6E+04

Table 4. HTP BIOSOLIDS - CLASS A COMPLIANCE MONITORING DATA

Analyzed by Environmental Monitoring Division : Arizona ELAP Lic. No. AZ0690 Helminth Ova and Enteric Virus analyzed by Aerotech, an Arizona ELAP Lic No. AZ0611

Sample date	Parameters	FECAL COLIFORM		SALMONELLA, sp.		HELMINTH OVA*			ENTERIC VIRUS*		
		MPN/gram TS (dry wt)		MPN/4 grams TS (dry wt)		Viable Helminth Ova/4 grams TS (dry wt)			MPN IU/4 grams TS (dry wt)^^		
	%TS	Silo#/Farm		Silo#/Farm		Sludge	Silo#/Farm		Sludge	Silo#/Farm	
8/4/2015	26.2	Silo	<6.9	Silo	<1.5	*****	Silo	*****	*****	Silo	*****

* - 24- Hour composite sample
** - Ceiling concentration in Table 1 of EPA Part 503 Sludge Regulation
*** - Pollutant concentration in Table 3 of EPA Part 503 Sludge Regulation
**** - Limit was deleted according to Federal Register Vol. 60, No. 206 of Oct. 25, 1995
***** - No lab with Arizona certification available
^ - Grab sample of digested sludge
# - EPA 40 CFR Part 503 Class B requirement
SM - Standard Methods, 20th Ed. 1998

TERMINAL ISLAND WATER RECLAMATION PLANT
MONTHLY BIOSOLIDS MONITORING REPORT FOR ARIZONA STATE
August 2015

Analyzed by Environmental Monitoring Division : Arizona ELAP Lic. No. AZ0690
Dept. of Public Works/ Bureau of Sanitation
City of Los Angeles, CA

Table 1. TOTAL SOLIDS AND VOLATILE SOLIDS

Sample date: 08/17/2015

Method No. SM 2540 G

Sample*	Total Solids %	Total Volatile Solids %
Raw Sludge	2.33	72
TWAS	2.81	77.2
Digested Sludge	1.6	60.7

Table 2. BENEFICIAL USE ASSESSMENT OF BIOSOLIDS*: METALS DATA

Sample date:

Parameters	Total Solids	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Copper (Cu)	Molybdenum (Mo)	Lead (Pb)	Nickel (Ni)	Selenium (Se)	Zinc (Zn)	Mercury (Hg)
Method No.	**SM 2540 G**	**EPA 3050/ EPA 6010B**									**EPA 7471A**
Unit	**%**	**mg/kg dry weight**									
Results	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Ceiling Conc.**	----	75	85	****	4300	75	840	420	100	7500	57
Pollutant Conc.***	----	41	39	****	1500	****	300	420	100	2800	17

TABLE 3. BIOSOLIDS^ - CLASS A COMPLIANCE MICROBIOLOGICAL MONITORING DATA

Sample Date:

Parameters	TOTAL SOLIDS	FECAL COLIFORM	SALMONELLA, sp.
Method No.	**SM2540G**	**SM 9221E**	**SM 9260D**
Unit	**%**	**MPN/gram TS (dry wt)**	**MPN/4 grams TS (dry wt)**
Frequency	**6 Times/Year@**	**6 Times/Year@**	**Quarterly**
Results	NS	NS	NS
Requirement#		<1000	<3

* - 24-Hour composite sample
** - Ceiling concentration in Table 1 of EPA Part 503 Sludge Regulation
*** - Pollutant concentration in Table 3 of EPA Part 503 Sludge Regulation
**** - Limit was deleted according to Federal Register Vol. 60, No. 206 of Oct. 25, 1995
@ - Sampling frequency for TIWRP is 6 months/year. The months are: Jan, Mar, May, Jul, Sep and Nov.
# - EPA 40 CFR Part 503 Class A requirements
^ - Grab sample from Farm
NS - Sampling not required
SM - Standard Methods, 20th Ed. 1998