



Addendum to CA1323 9-30-05

This is to supplement and report our progress on this corrective action.

We have discussed the variation in reading the Mn levels with the service technician and the spectrometer manufacturer. No new information has been obtained to explain the differences in reading Mn levels.

The chemistry for the shims poured from heat 29198 has been analyzed and is added to the spreadsheet attached. It shows similar readings for Mn.

The chemistry for the C-6 coil is also added to the spreadsheet. We aimed for higher Mn at the furnace to assure the higher Mn levels. The results indicate the effort was successful.

Update as to action steps:

Create a type standard that closely matches the Mn in CF8MNMNMOD.

Completed at WC and has been sent to another laboratory.

Request a revision to the chemistry range for Mn. (propose widening of Manganese since it has been proven to be effective at much lower concentrations than previously thought).

Pending.

Have each heat of CF8MNMNMOD verified independently for balance of program.

Complete for all coils to date.

A handwritten signature in black ink, appearing to read "C. Ruud".

C. Ruud

CC: Jim Galaske, Barry Craig, Joe Edwards, E.J. Kubick

Chemistry Check with WISCO			Revised 9-30-05			Information in blue added 9-30-05						
Lab	I.D.	Sample	C	Si	Mn	Cr	Ni	Mo	N	P	S	
Heat #29198 for 5 C and 6 A shims												
CAF	29198	Reported 9/24/05	0.07	0.7	2.97	18.1	13.12	2.45	0.255	0.013**	0.01**	
CAF	29198	Separate Test bar	*	0.8	2.7	18.2	13.2	2.4	*	0.025	0.011	re-run after PM
Lab	I.D.	Sample	C	Si	Mn	Cr	Ni	Mo	N	P	S	
CAF	C-6,I-1	Button #1	0.04	0.3	2.5	18.2	13.5	2.4	0.25	0.028	0.010	run after PM
CAF	C-6,I-1	Button #2	*	0.2	2.4	18.1	13.6	2.4	*	0.03	0.012	run after PM
WC	C-6,I-1	Button #2	0.03	0.2	2.4	17.9	13.7	2.5	0.26	0.028	0.010	
Lab	I.D.	Sample	C	Si	Mn	Cr	Ni	Mo	N	P	S	
CAF	C-6,I-3	Button #1	0.04	0.4	2.4	18.2	13.4	2.3	0.25	0.034	0.011	run after PM
CAF	C-6,I-3	Button #2	*	0.4	2.4	18.2	13.7	2.3	*	0.033	0.012	run after PM
WC	C-6,I-3	Button #2	0.03	0.4	2.2	17.9	13.6	2.4	0.25	0.028	0.013	
Lab	I.D.	Sample	C	Si	Mn	Cr	Ni	Mo	N	P	S	
CAF	C-6,I-6	Button #1	0.04	0.4	2.6	18.3	13.4	2.4	0.26	0.031	0.010	run after PM
CAF	C-6,I-6	Button #2	*	0.4	2.5	18.2	13.7	2.4	*	0.031	0.013	run after PM
WC	C-6,I-6	Button #2	0.04	0.4	2.4	18.2	13.7	2.4	0.26	0.030	0.014	
Lab	I.D.	Sample	C	Si	Mn	Cr	Ni	Mo	N	P	S	
CAF	C-6,Z-3	Cast on sample	*	0.6	1.7	18.1	13.6	2.4	*	0.031	0.012	run after PM
WC	C-6,Z-3	Cast on sample	0.04	0.6	1.7	17.8	13.8	2.4	0.26	0.025	0.011	
Lab	I.D.	Sample	C	Si	Mn	Cr	Ni	Mo	N	P	S	
CAF	C-5,I-1	Button #1	0.05	0.3	2.6	18.1	13.4	2.4	0.26	0.023	0.011	
CAF	C-5,I-1	Button #2	0.05	0.4	2.6	18.0	13.4	2.6	0.26	0.025	0.013	
WC	C-5,I-1	Button #2	0.02	0.3	2.2	18.2	13.5	2.4	0.25	0.025	0.010	
STL Wet	C-5,I-1	Button #1			2.2							
CAF	C-5,I-1	Button #1	*	0.3	2.3	18.3	13.4	2.4	*	0.029	0.012	re-run after PM
Lab	I.D.	Sample	C	Si	Mn	Cr	Ni	Mo	N	P	S	
CAF	C-5,I-3	Button #1	0.05	0.4	2.2	17.9	13.4	2.5	0.24	0.033	0.012	
CAF	C-5,I-3	Button #2	0.05	0.4	2.2	17.9	13.2	2.4	0.24	0.033	0.012	
WC	C-5,I-3	Button #2	0.05	0.4	1.8	18.2	13.4	2.5	0.23	0.034	0.018	
STL Wet	C-5,I-3	Button #1			1.8							
CAF	C-5,I-3	Button #1	*	0.4	1.8	18.3	13.3	2.5	*	0.034	0.012	re-run after PM
Lab	I.D.	Sample	C	Si	Mn	Cr	Ni	Mo	N	P	S	
CAF	C-5,I-6	Button #1	0.05	0.3	2.4	18.1	13.2	2.4	0.25	0.030	0.012	
CAF	C-5,I-6	Button #2	0.05	0.3	2.4	18.1	13.2	2.4	0.25	0.029	0.011	
WC	C-5,I-6	Button #2	0.04	0.3	2	18.3	13.3	2.4	0.24	0.031	0.018	
STL Wet	C-5,I-6	Button #1			1.9							
CAF	C-5,I-6	Button #1	*	0.3	2.0	18.4	13.3	2.4	*	0.033	0.012	re-run after PM
Lab	I.D.	Sample	C	Si	Mn	Cr	Ni	Mo	N	P	S	
CAF	A-1	Reported	0.04	0.4	2.4	18.2	13.3	2.4	0.26	*	*	
CAF	A-1	Cast on sample	*	0.5	2.1	18.0	13.4	2.4	*	0.034	0.009	
WC	A-1	Cast on sample	0.06	0.6	1.6	18.1	13.7	2.4	0.25	0.027	0.009	
CAF	A-1	Cast on sample	*	0.6	1.6	18.2	13.5	2.4	*	0.028	0.009	re-run after PM
Lab	I.D.	Sample	C	Si	Mn	Cr	Ni	Mo	N	P	S	
CAF	C-4	Reported	0.04	0.4	2.5	18.2	13.2	2.2	0.26	0.030**	0.014**	
CAF	C-4	Cast on sample	*	0.6	1.9	17.9	13.5	2.3	*	0.037	0.013	
WC	C-4	Cast on sample	0.04	0.6	1.5	17.8	13.6	2.4	0.25	0.030	0.012	
CAF	C-4	Cast on sample	*	0.6	1.4	18.2	13.6	2.4	*	0.031	0.009	re-run after PM
Lab	I.D.	Sample	C	Si	Mn	Cr	Ni	Mo	N	P	S	
CAF	C-1	Reported	0.06	0.5	2.7	18.1	13.1	2.2	0.27	0.013**	0.014**	
CAF	C-1	Cast on sample	*	0.7	2.2	18.1	13.1	2.2	*	0.021	0.010	
WC	C-1	Cast on sample	0.06	0.7	1.8	18.3	13.4	2.4	0.24	0.021	0.014	
CAF	C-1	Cast on sample	*	0.7	1.9	18.3	13.2	2.4	*	0.024	0.013	re-run after PM
Lab	I.D.	Sample	C	Si	Mn	Cr	Ni	Mo	N	P	S	
CAF	C-2	Reported	0.06	0.5	2.8	18.0	13.2	2.3	0.26	0.023**	0.018**	
CAF	C-2	Cast on sample	*	0.8	2.2	18.1	13.4	2.2	*	0.030	0.012	
WC	C-2	Cast on sample	0.07	0.9	1.6	18.2	13.7	2.2	0.23	0.023	0.014	
CAF	C-2	Cast on sample	*	0.8	1.6	18.2	13.5	2.3	*	0.024	0.012	re-run after PM

Lab	I.D.	Sample	C	Si	Mn	Cr	Ni	Mo	N	P	S	
CAF	C-3	Reported	0.04	0.4	2.5	18.2	13.3	2.3	0.25	0.023**	0.013**	
CAF	C-3	Cast on sample	*	0.6	1.9	18.0	13.3	2.4	*	0.027	0.010	
WC	C-3	Cast on sample	0.06	0.6	1.6	18.3	13.7	2.4	0.24	0.023	0.009	
CAF	C-3	Cast on sample	*	0.6	1.6	18.1	13.5	2.4	*	0.023	0.011	re-run after PM
Test Heat poured 1/14/04												
Lab	I.D.	Sample	C	Si	Mn	Cr	Ni	Mo	N	P	S	
CAF	24424	Reported	0.054	0.4	2.8	18.1	12.94	2.21	0.27	0.023	0.010	
CAF	24424	Keel bar	*	0.4	2.2	18.2	13.2	2.2	*	0.013	0.010	re-run after PM
* not analyzed by spectrometer.												
** analyzed by wet chemistry.												
For C-5 and C-6 - C and N were analyzed at CAF and at WC by Leco Analyzer, P+S analyzed on spectrometer.												