Alicia Mullins

From: Xihua He
Sent: Tuesday, May 02, 2006 3:00 PM
To: Paul Bertetti; Vijay Jain
Cc: David Pickett
Attachments: CSPOREH2O1Results.xls

Follow Up Flag: Follow up
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The attached is the pH measurement and ICP analysis results for the carbon steel immersion tests we conducted recently. The outline of the IM on this topic is at S:\Vjain\In Package. I moved the author final due date to June 8, one week earlier than Vijay proposed because I will be on travel during the week of June 18. I have all the test results in Notebook # 706. If you have any question or need to look for data, you can look into that notebook or ask me.

Thanks,
Xihua

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02 May 2006 14:01:24 -0500 (CDT)
Date: Tue, 02 May 2006 13:59:57 -0500
From: Xihua He <xhe@cnwra.swri.edu>
Subject:
To: Paul Bertetti <pbertetti@cnwra.swri.edu>, Vijay Jain <vjain@cnwra.swri.edu>
Cc: David Pickett <dpickett@cnwra.swri.edu>
Reply-to: xhe@cnwra.swri.edu
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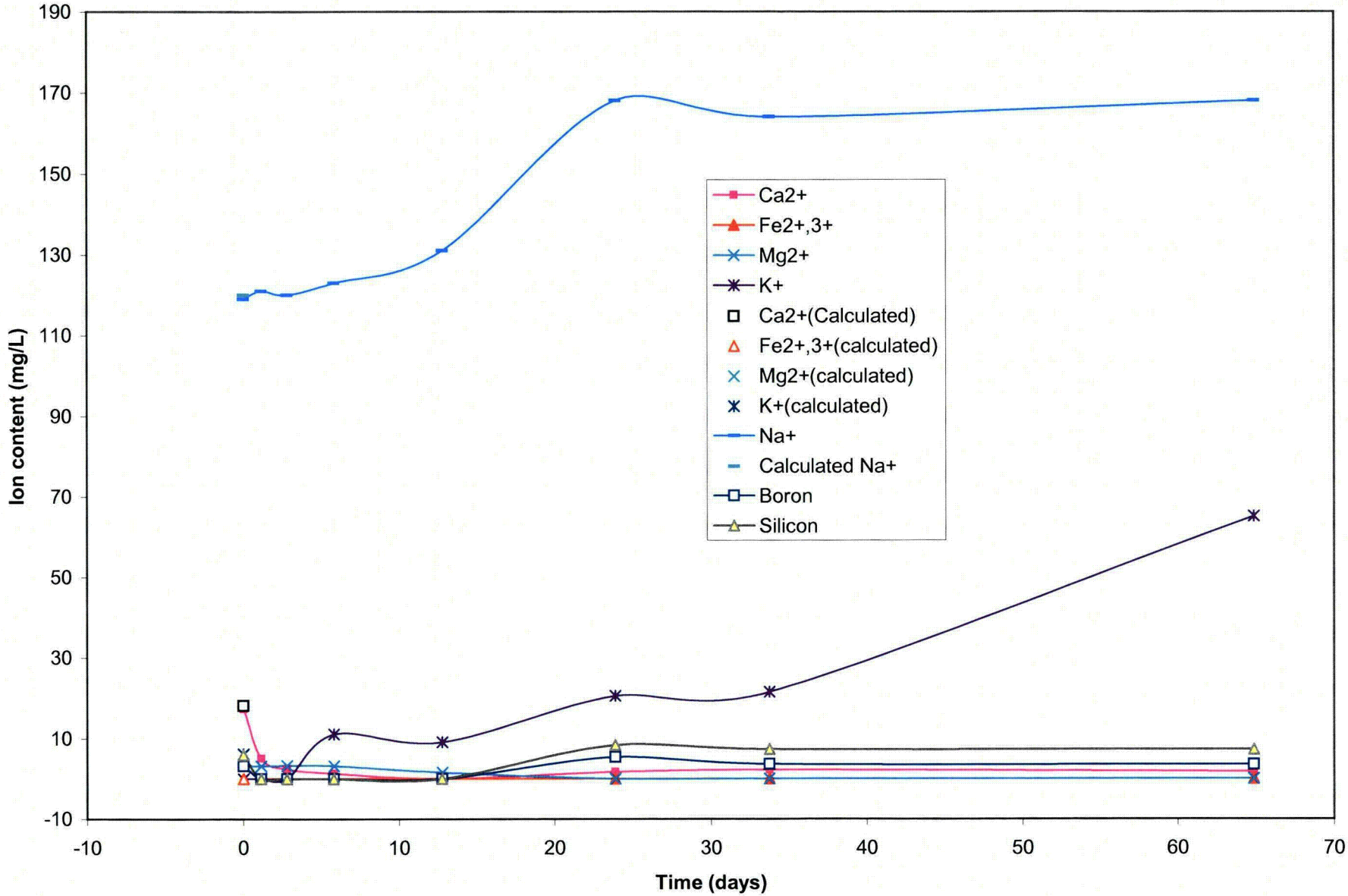
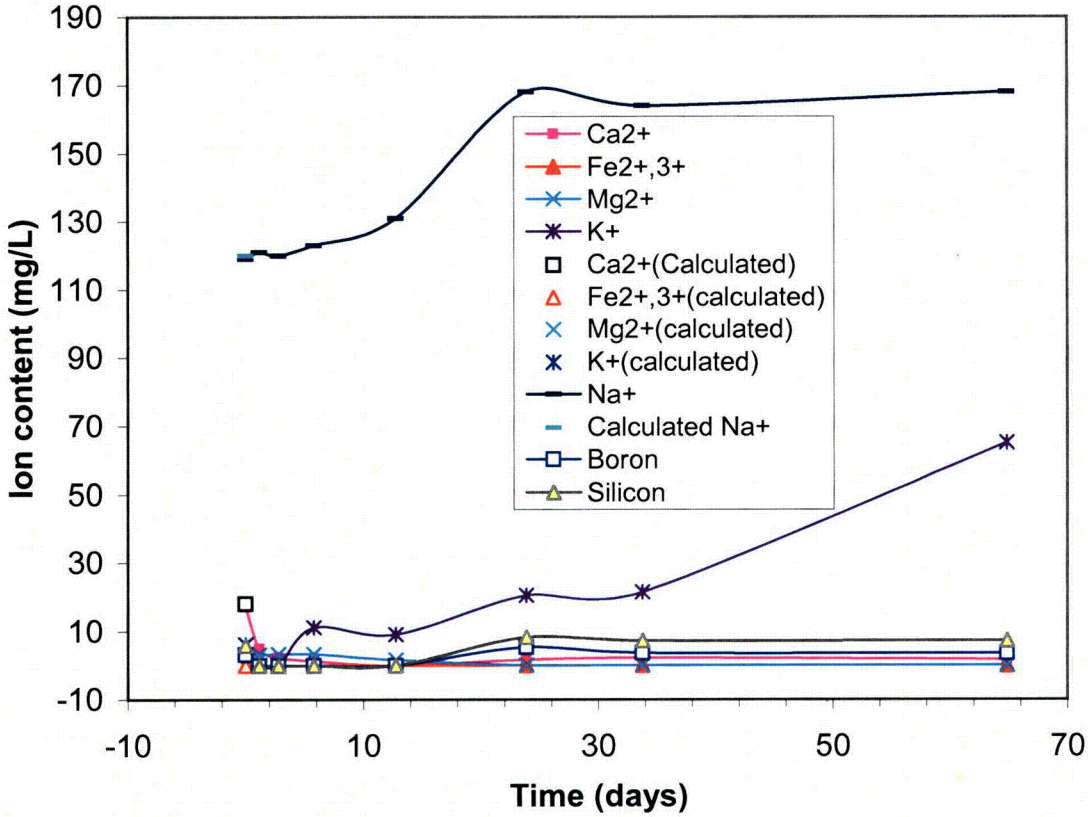
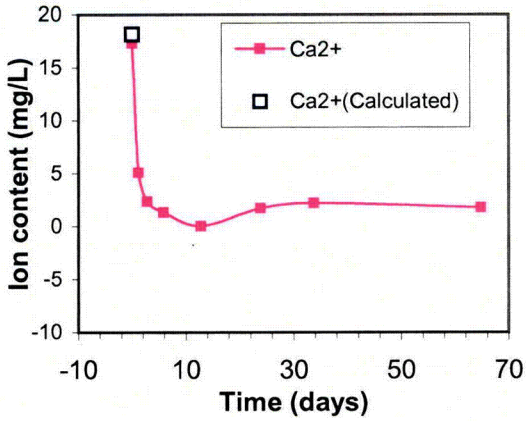
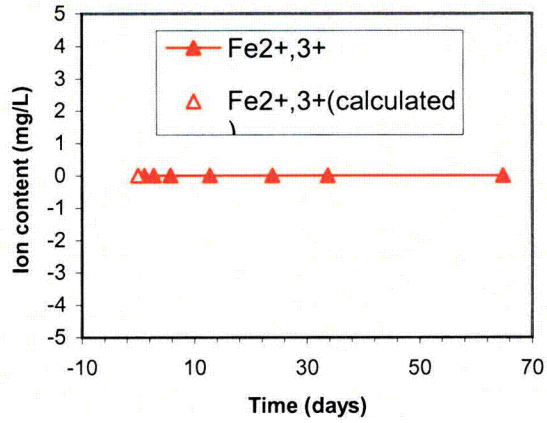
			Content (mg/L)														Content (mg/L)		
	Date	Time	Time (days)	pH	Boron	Ca2+	Iron	Mg2+	K+	Silicon	Na+	Sulfur	DATE	TIME	Time (days)	Cl-	F-	NO3-	SO42-
Calculated from original solution			0		0	18.15	0	3.374	6.2	0	120	10.43333		Calculated from original solution	0	24.19	6.154	0.42	31.3
NB#706, pg#84	original solution from ICP analysis		0		3.17	17.3	<1.25	3.32	<7.5	5.9	119	10	original solution		0				
NB#706, pg#87	**01/18/2006**	17:00	1.14583	8.3	<0.5	5.05	<1.25	3.11	<7.5	<0.5	121	10.1	NB#706, pg#112 original stock after 2 months		0	22.9	5.68	<1	31
NB#706, pg#88	**01/20/2006**	8:30	2.79167	8.6	<0.5	2.33	<1.25	3.26	<7.5	<0.5	120	10.4	**01/18/2006**	17:00	1.145833				
NB#706, pg#89	**01/23/2006**	8:30	5.79167	9	<0.5	1.3	<1.25	3.23	11	<0.5	123	10.8	**01/20/2006**	8:30	2.791667				
NB#706, pg#90	**01/30/2006**	8:05	12.7604	9.5	<0.5	<1.25	<1.25	1.59	9.1	<0.5	131	11.4	**01/23/2006**	8:30	5.791667				
NB#706, pg#121	**02/10/2006**	10:20	23.8542	9.3	5.35	1.69	<2.50	<2.5	21	8.35	168	14	**01/30/2006**	8:05	12.76042				
NB#706, pg#122	**02/20/2006**	8:00	33.7569	8.9	3.65	2.18	<2.50	<2.5	22	7.33	164	12.9	**02/10/2006**	10:20	23.85417	48.5	6.73	<1	34
NB#706, pg#125	**03/22/2006**	9:00	64.8507	9.2	3.51	1.76	<2.50	<2.50	65	7.28	168	11.5	**02/20/2006**	8:00	33.75694	45.1	6.55	8.6	32.3
	Turn off heater for Cells #1, 2, and 3, pH measurement at room temperature												**03/10/2006**	7:30	51.73611	57.6	6.86	20.9	28.4
NB#706, pg#126	**03/22/2006**	10:44	64.9229	9.5	5.87	1.59	<2.50	<2.50	50	9.84	180	11.7	**03/22/2006**	9:00	64.85069	80.2	6.24	21.9	23.1
													Turn off heater for Cells #1, 2, and 3, pH measurement at room temperatu						
													03/22/2006	10:44	64.92292	67.3	6.38	22.1	23.8


190
170
150
130
110
90
70
50
30
10
-10
Ion content (mg/L)
-10
0
10
20
30
40
50
60
70
Time (days)
Ca2+
Fe2+,3+
Mg2+
K+
Ca2+(Calculated)
Fe2+,3+(calculated)
Mg2+(calculated)
K+(calculated)
Na+
Calculated Na+
Boron
Silicon


Ion content (mg/L)
Time (days)
Ca2+
Fe2+,3+
Mg2+
K+
Ca2+(Calculated)
Fe2+,3+(calculated)
Mg2+(calculated)
K+(calculated)
Na+
Calculated Na+
Boron
Silicon


Ion content (mg/L)
Time (days)
Ca2+
Ca2+(Calculated)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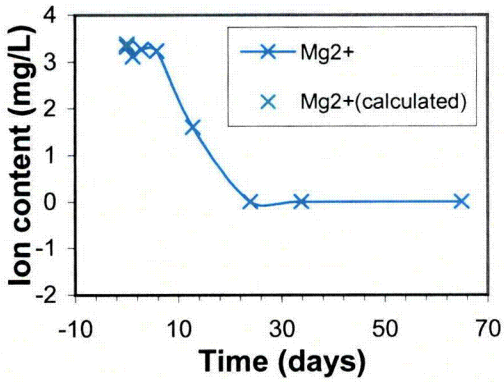
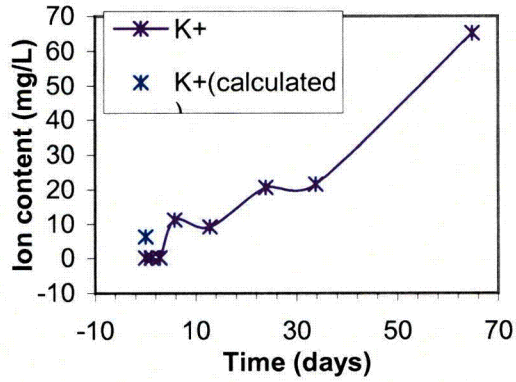
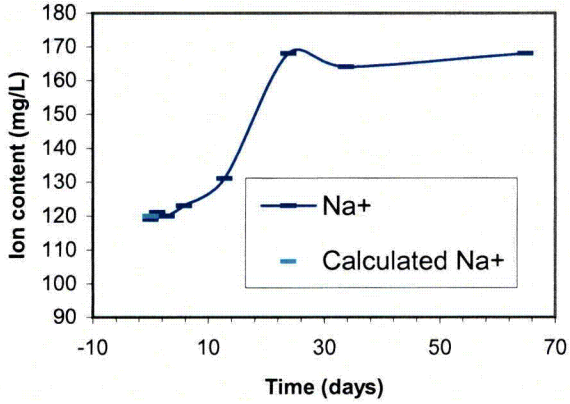
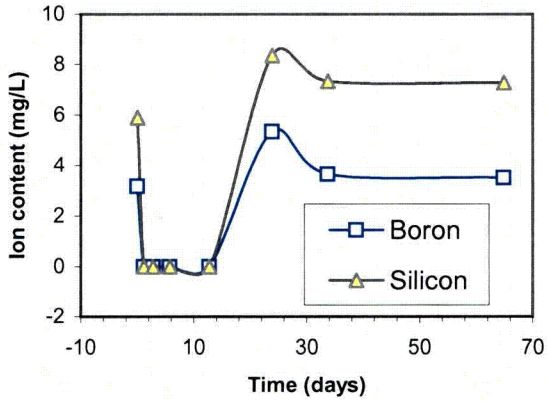
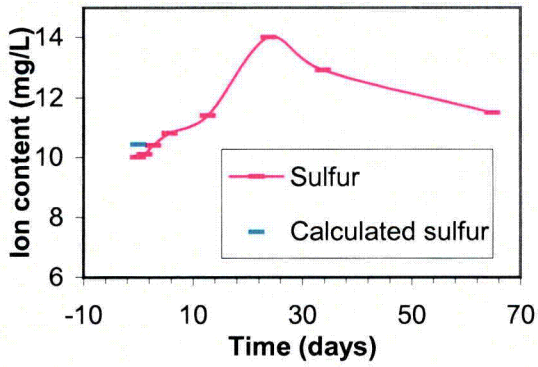
Time (days)
Fe2+,3+
Fe2+,3+(calculated

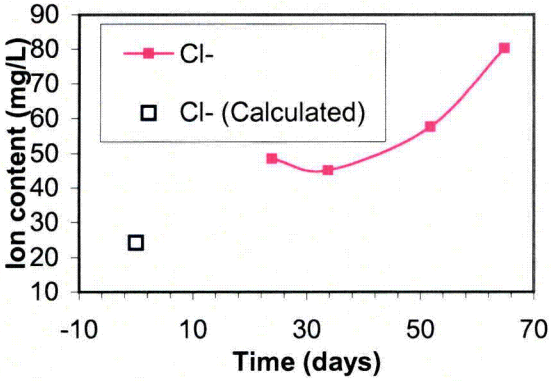

Ion content (mg/L)
Time (days)
Mg2+
Mg2+(calculated)

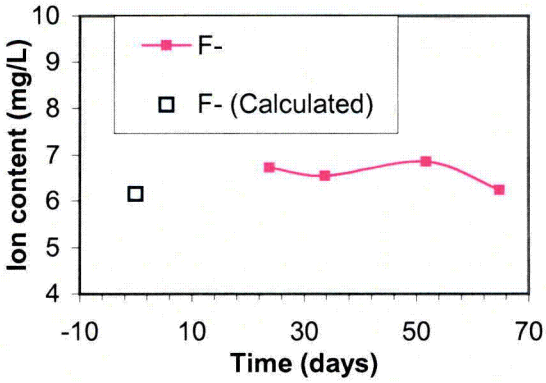

Ion content (mg/L)
Time (days)
K+
K+(calculated

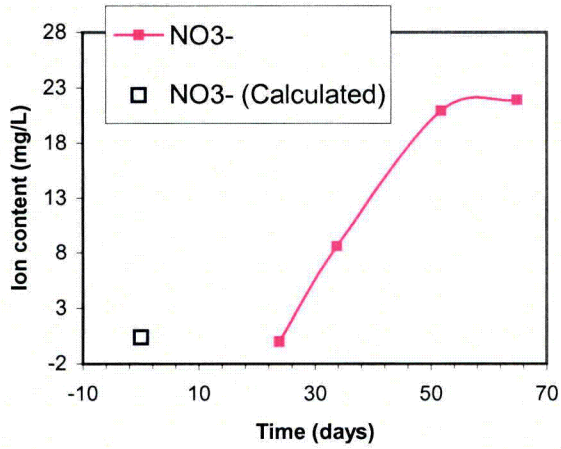

Ion content (mg/L)
Time (days)
Na+
Calculated Na+

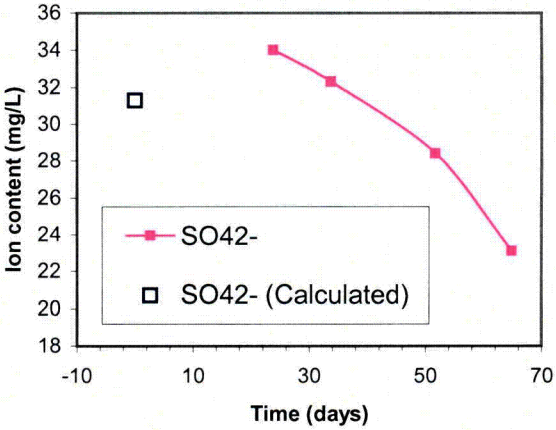

Ion content (mg/L)
Time (days)
Boron
Silicon


Ion content (mg/L)
Time (days)
Sulfur
Calculated sulfur


Ion content (mg/L)
Time (days)
Cl-
Cl- (Calculated)

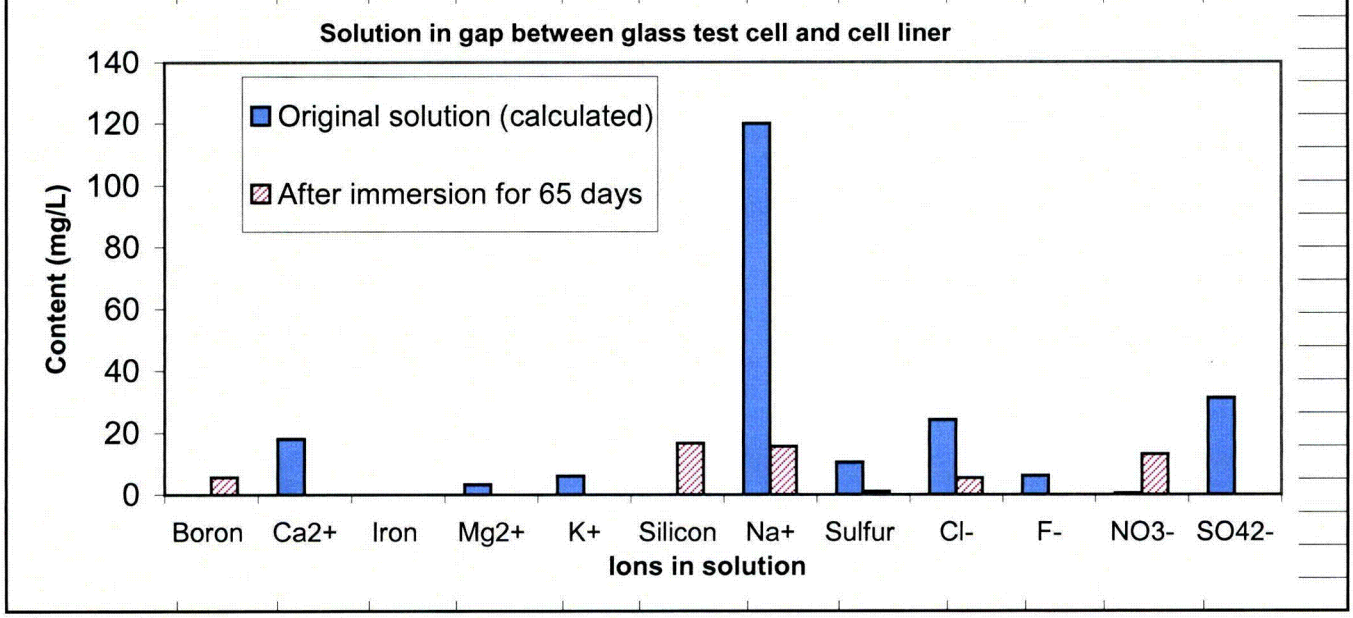

Ion content (mg/L)
Time (days)
F-
F- (Calculated)


Ion content (mg/L)
Time (days)
NO3-
NO3- (Calculated)

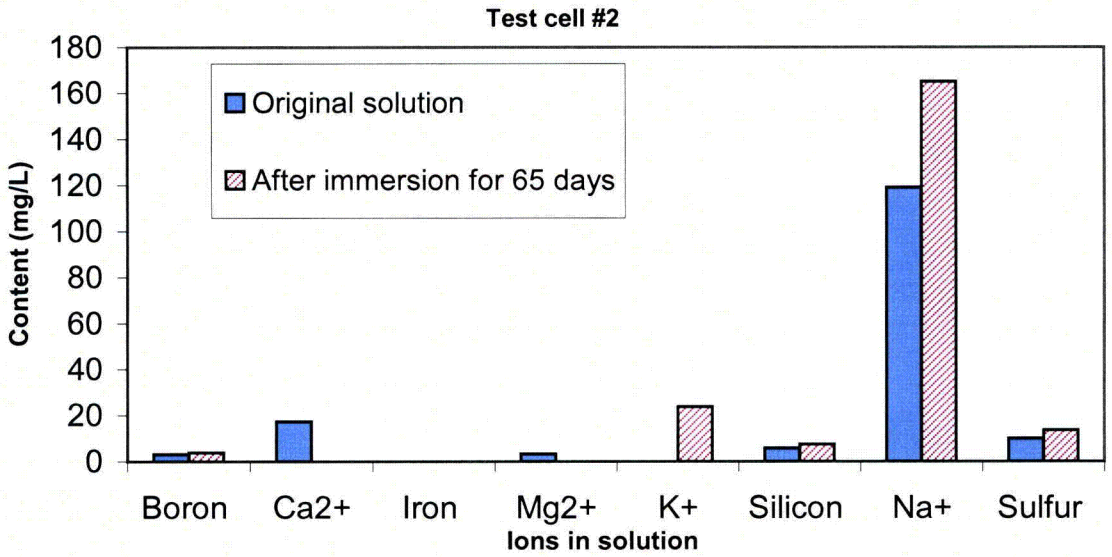

Ion content (mg/L)
Time (days)
SO42-
SO42- (Calculated)

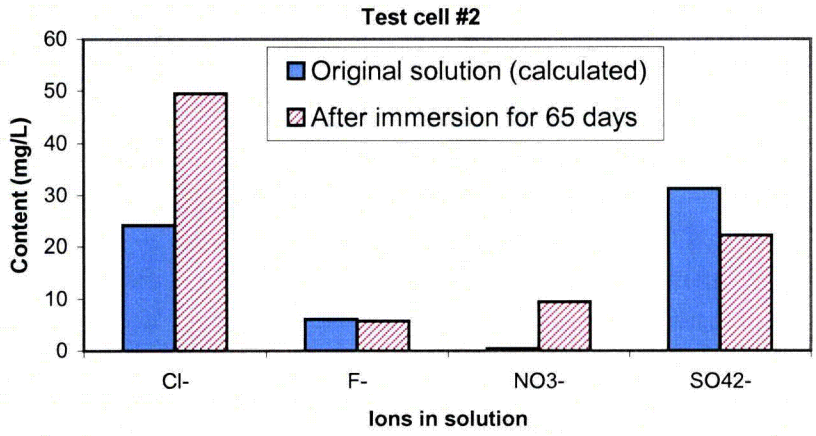
Solution in gap between test cell and liner

	Boron	Ca^{2+}	Iron	Mg^{2+}	K+	Silicon	Na+	Sulfur	Cl-	F-	NO3-	SO42-
Calculated original	0	18.15	0	3.374	6.16	0	120	10.433	24.2	6.15	0.42	31.3
NB#706, pg#127	5.7	<1.25	<2.50	<2.50	<5.00	16.6	15.6	1.03	5.46	<1	13	<1

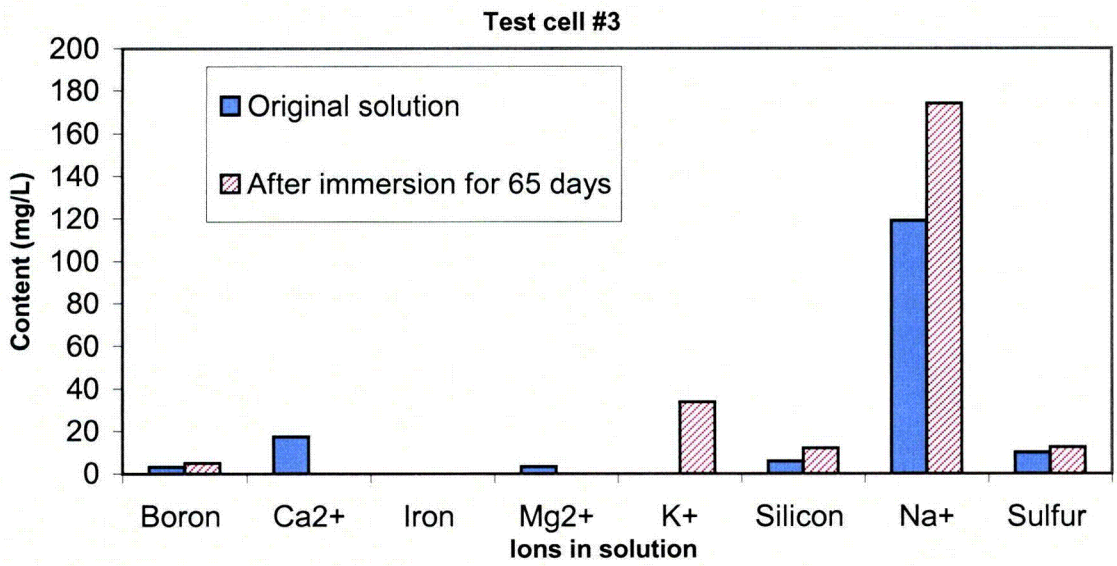


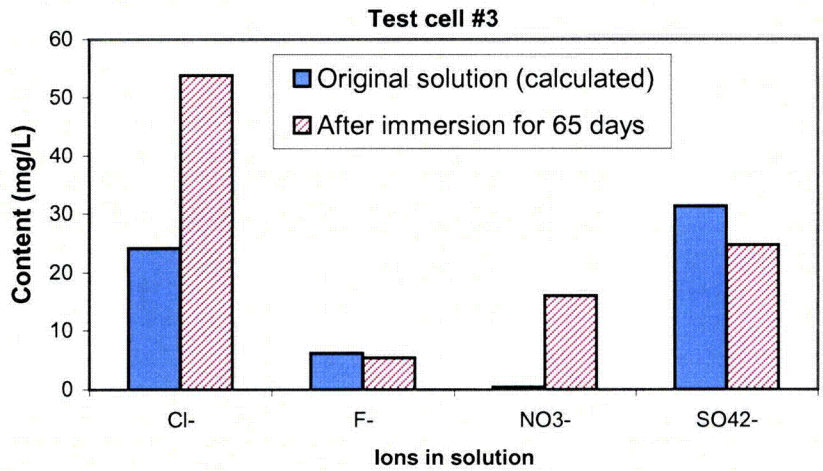
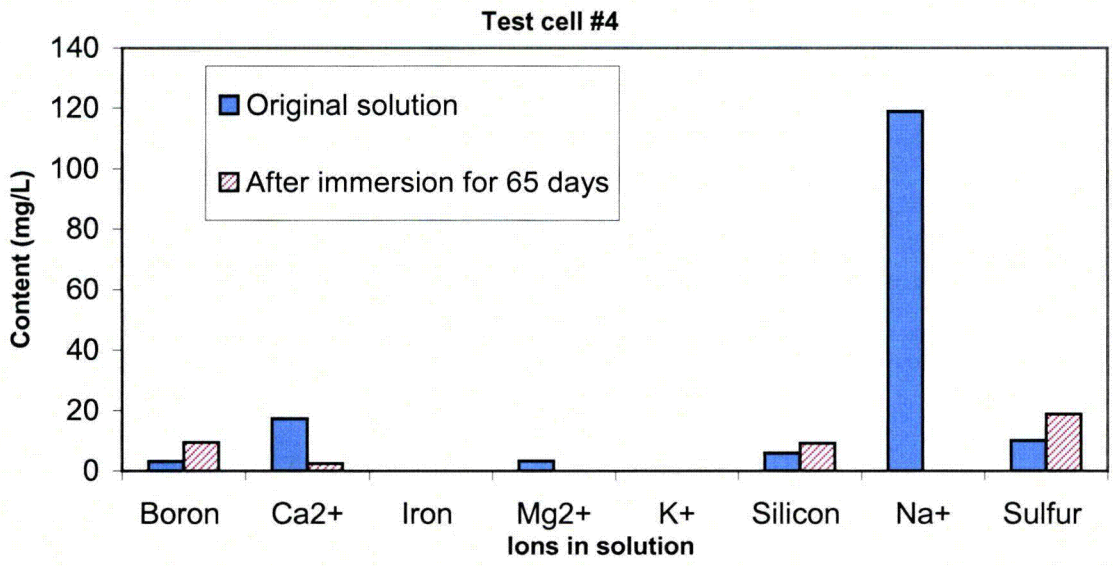
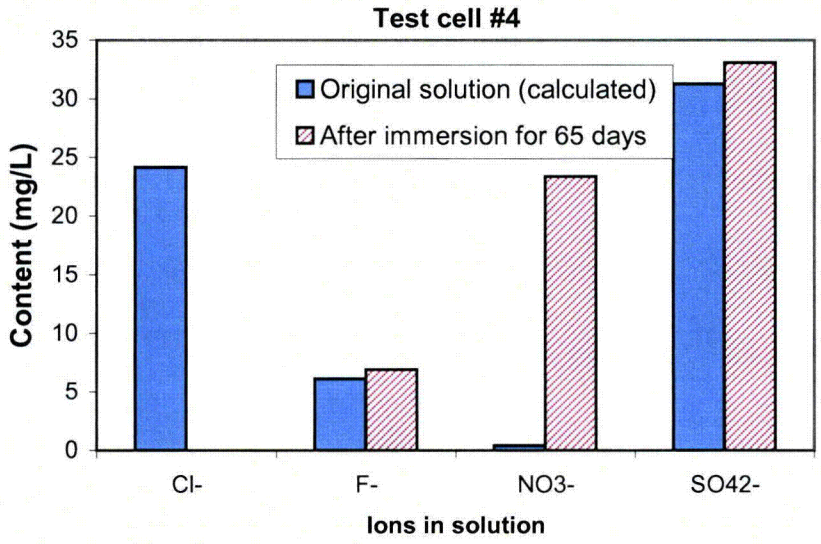
		Cell #2												
	Time (days)	pH	Content (mg/L)											
			Boron	Ca^{2+}	Iron	Mg^{2+}	K+	Silicon	Na+	Sulfur	Cl-	F-	NO3-	SO42-
Calculated			0	18.15	0	3.37	6.2	0	120	10.433	24.2	6.15	0.42	31.3
NB#706, pg#112	original stock after 2 months		2.8	8.58	<2.50	2.88	6.5	6.05	130	11.9	22.9	5.68	<1	31
Original solution	0	8.29	3.17	17.3	<1.25	3.32	<7.5	5.9	119	10				
NB#706, pg#114&116	64.851	9.47	3.95	<1.25	<2.50	<2.50	24	7.55	165	13.6	49.5	5.77	9.5	22.2
After solution cool down														
NB#706, pg#111	64.923	9.83	9.34	1.31	<2.50	<2.50	25	13.6	111	12.1	48.6	5.72	9.39	22.2





		Cell #3												
	Time (days)	pH	Content (mg/L)											
			Boron	Ca^{2+}	Iron	Mg^{2+}	K+	Silicon	Na+	Sulfur	Cl-	F-	NO3-	SO42-
Calculated			0	18.2	0	3.374	6	0	120	10.43	24	6	0.42	31.3
NB#706, pg#112	original stock after 2		2.8	8.58	<2.50	2.88	7	6.05	130	11.9	23	6	<1	31
Original solution	0	8.3	3.17	17.3	<1.25	3.32	<7.5	5.9	119	10				
NB#706, pg#118	64.85069	9.5	4.99	<1.25	<2.50	<2.50	34	12	174	12.4	54	5	16	24.7
After solution cool down														
NB#706, pg#117	64.92292	9.9	6.44	<1.25	<2.50	<2.50	36	13.4	177	12.1	53	6	16	24.7





		Cell #4												
	Time (days)	pH	Content (mg/L)											
			Boron	Ca^{2+}	Iron	Mg^{2+}	K+	Silicon	Na+	Sulfur	Cl-	F-	NO3-	SO42-
Calculated			0	18.2	0	3.37	6.16	0	120	10.43	24.2	6.15	0.42	31.3
NB#706, pg#112	original stock after 2 months		2.8	8.58	<2.50	2.88	6.52	6.05	130	11.9	22.9	5.68	<1	31
Original solution	0	8.29	3.17	17.3	<1.25	3.32	<7.50	5.9	119	10				
NB#706, pg#119	64.851	9.06	9.43	2.38	<2.50	<2.50		9.09		18.8		6.94	23.4	33.1
							1360		2120		4000