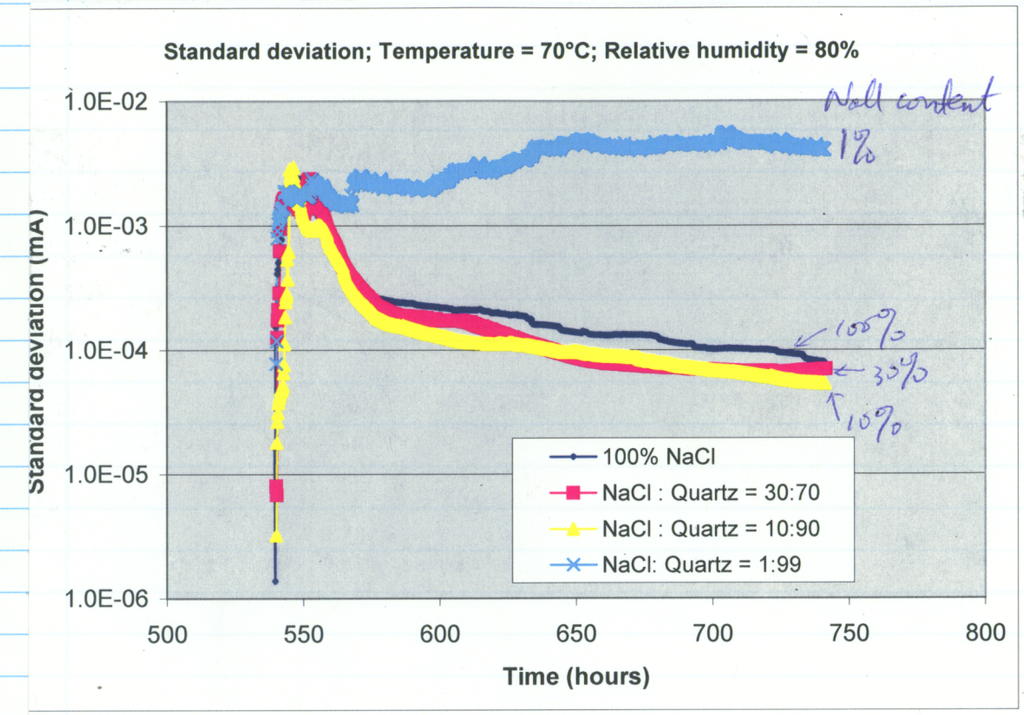

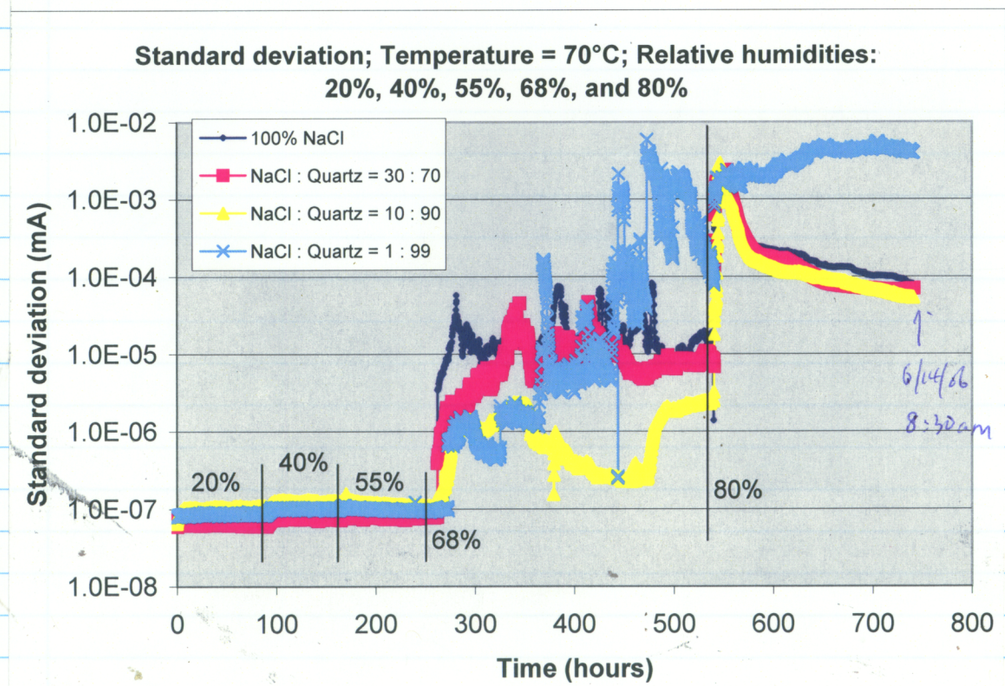

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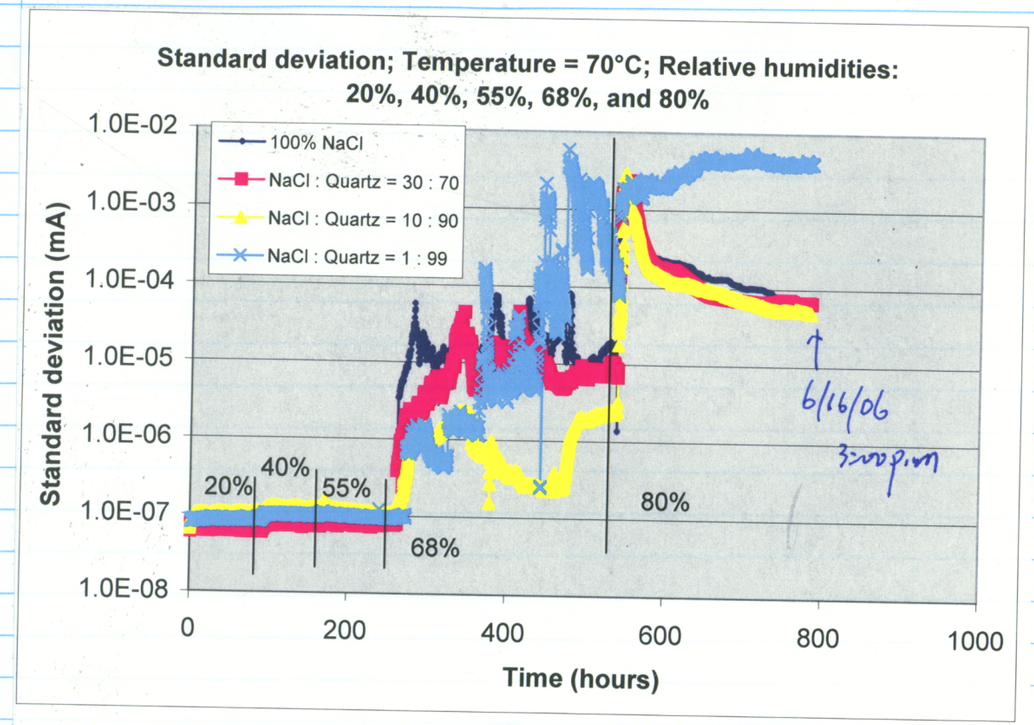

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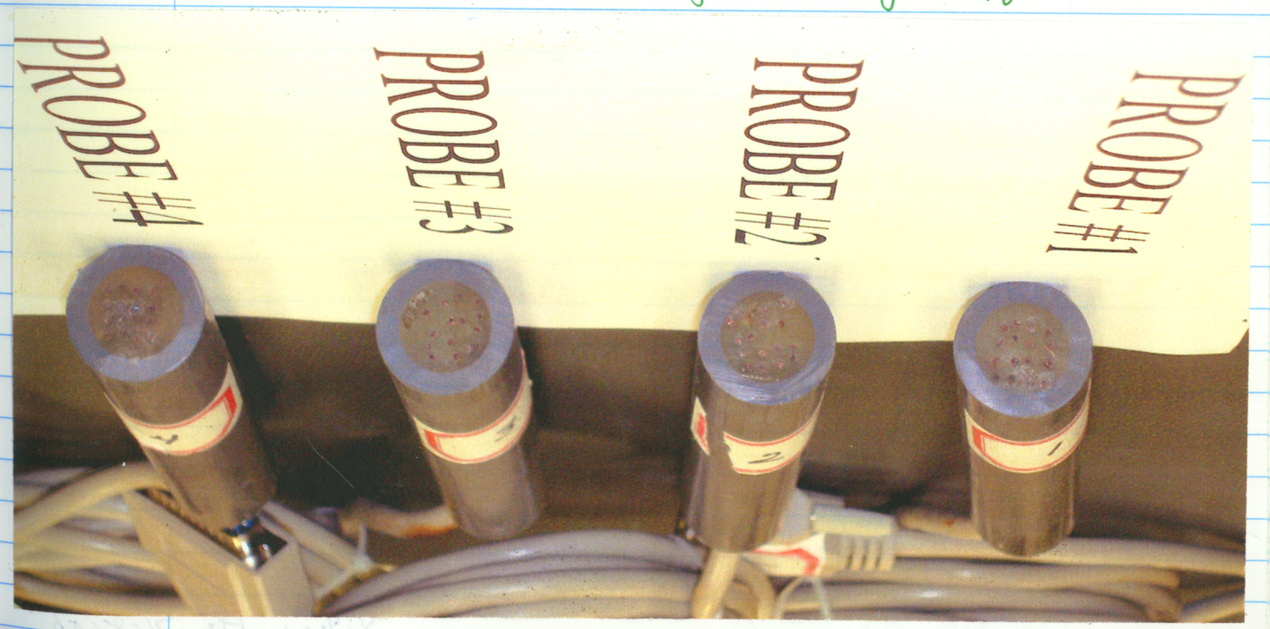
Sensors #1, #2, #3, & #4 after removing salt/quartz mixture.



Documentation of Dust used in the Tests:

SAMPLE CUSTODY ENTRY FORM

SAMPLE IDENTIFICATION (Mandatory)
Topopah Spring Tuff (TSw2)

SAMPLE DESIGNATOR

DESCRIPTION OF SAMPLE (Mandatory)
Topopah Spring Tuff lower lithophysal zone
Procured from SMF

REFERENCE TOP or SCIENTIFIC NOTEBOOK ENTRY
382/2

AMOUNT of SAMPLE 6 55 gallon drums **SIZE**

DATE of SAMPLE RECEIPT (Mandatory) 12/21/99

DATE of LOG ENTRY (Mandatory) 12/21/99 **by** James D. Pyl

SAMPLE STORAGE LOCATION (Mandatory)
Bldg 51

Collection Site:

Supplier:

Other:

CNWRA FORM TOP-004

CNWRA Form TOP-2

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Scientific Notebook # 382, page #2

YMP-101-R3
06/06/94

YUCCA MOUNTAIN SITE CHARACTERIZATION PROJECT
SAMPLE COLLECTION REPORT

Page 1 of 1

Date Collected: 12-7-99
Collector Name: DICK KOVACH
Organization: LANL Phone: (702) 295-6180
Address: ESF PAD
M/S 735

Recipient Name: RON GREEN
Organization: SOUTHWEST RESEARCH Phone: (210) 522-5305
Address: SOUTHWEST RESEARCH Study Plan No.: NA
BUILDING 51 Title: NA
6220 CULEBRA ROAD
SAN ANTONIO, TX 78238

Type of Sample: (circle one) rock soil alluvium caliche (muck) liquid gas other
Number of Samples Collected: 6 BARRELS/DRUMS

Site Type: (circle one) Trench Outcrop Surface Spring (Tunnel) Borehole
Other

Describe Sample: ☐ Q ☒ Non-Q
MUCK TRANSPORTED FROM NICHE #5, ECRB TO MUCK PILE VIA CONVEYOR BELT. TSw2 (Topopah Spring lower lithophysal zone) TSw2

Describe Site:
MUCK PILE AT END OF CONVEYOR BELT, ESF PAD.

Other Documentation (Field photos, maps, reports, etc.):
SIX (6), 55 GALLON DRUMS/BARRELS

Remarks:
SPC 00552582

For SMF Use Only
Record Verified By: Chris J. Hermes SMF TS Date: 12-7-99

Exhibit YAP-SIL.4Q.1

12/21/99

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Chemical Composition of Dust (from Scientific Notebook 282, p.21)

Chemistry of Topapah Spring lower lithophysal unit and USGS standards
Analyses were conducted by ICP at Texas Tech Department of Geosciences

	SiO2	TiO2	Al2O3	Fe2O3	MnO	MgO	CaO	Na2O	K2O	P2O5	LOI	Total	Sr	Ba	Zr	Y	Sc	V	Cr	Ni	Cu	Zn	Nb	Be
TS-101	75.15	0.09	12.67	0.91	0.06	0.18	0.56	3.75	4.76	0.01	0.87	99.01	24	49	126	32.0	2.5	0	1	1	-1	54	19	3.0
TS-102	76.07	0.09	12.70	1.10	0.08	0.15	0.51	3.51	5.02	0.01	0.59	99.82	21	52	122	22.0	2.6	4	1	0	0	62	18	3.1
TS-103	76.84	0.09	12.56	0.91	0.06	0.15	0.52	3.79	4.76	0.01	0.71	100.40	22	46	126	28.8	2.5	2	1	7	0	41	18	2.8
TS-104	75.61	0.09	12.78	0.86	0.07	0.14	0.47	3.76	4.98	0.01	0.64	99.42	21	77	129	17.5	2.5	0	1	6	-3	34	18	2.7
TS-105	76.58	0.09	12.47	0.85	0.06	0.15	0.50	3.64	4.83	0.01	0.60	99.78	23	50	123	21.4	2.5	0	-1	3	-4	38	17	2.7
TS-106	75.85	0.09	12.51	0.84	0.06	0.16	0.48	3.78	4.88	0.01	0.58	99.24	21	50	122	30.2	2.5	1	3	2	-2	42	17	2.9
TS-107	76.23	0.09	12.61	0.89	0.06	0.17	0.50	3.56	4.99	0.01	1.60	100.70	23	47	123	25.1	2.6	-1	1	0	-2	46	17	2.8
TS-108	65.76	0.63	16.71	4.20	0.09	1.07	3.35	4.52	3.57	0.27	0.63	100.80	360	1365	190	22.1	8.6	45	1	2	29	66	11	1.6
TS-109	72.22	0.27	14.13	1.84	0.03	0.32	1.19	4.12	4.36	0.05	1.11	99.64	105	800	231	21.9	4.4	13	7	3	10	35	9	1.9
TS-110	59.13	0.13	18.65	5.12	0.21	0.15	1.15	8.96	4.31	0.16	1.55	99.52	705	570	1347	42.4	0.7	0	2	4	3	246	246	9.7

Major oxides are in wt %
Minor elements are in ppm
Negative values are below detection limits

Samples TS-108, TS-109, and TS-110 are analyses of USGS standards

Main mineral phases: SiO_2, $NaAlSi_3O_8$, $KAlSi_3O_8$

X. Chen 7/18/06

New Test: Carbon Steel Probe And Dust

Composition weight Percent for Each Probe

10% NaCl / 90% Dust — Probe #1
1.003g Dust Is 200 mesh + NaCl Lot# 052761
9.004g

1% NaCl / 99% Dust — Probe #2
0.106g NaCl Lot# 052761
9.903g Dust Is 200 mesh

0.4% NaCl / 99.6% Dust — Probe #3
* 0.0463g NaCl Lot# 052761
9.963g Dust Is 200 mesh

0% NaCl / 100% Dust — Probe #4
10.001g Dust Is 200 mesh

All Dust used In Testing Sifted To 200 mesh Prior To Test And kept In Desicant

All Dust And NaCl Mixed for 5 min In Ball Mill shaker without grinding Balls - Same As Previous Test (p.9)

Scale Used In Measurements of Dust And NaCl

Ohaus SN# 2883 Cal: 7/5/06 Due: 1/5/07

* Sartorious Genius SN# 12809099 Cal: 5/9/06 Due: 11/9/06

Test started @ 3:30 pm on 7/10/06

7/11/06

Data files:

Relative humidity 20%

CSDust 7110000
CSDust 7110001
CSDust 7110002
CSDust 7110003
CSDust 7110004
CSDust 7110005
CSDust 7110006
CSDust 7110007
CSDust 7110008
CSDust 7110009
CSDust 7110010

7/14/06 3:00 pm Relative humidity 40%

CSDust 7140000 (at cycle 78, change relative humidity)

7/19/06 8:40 am Adjust relative humidity to 55%

CSDust 71401

at cycle 1695, adjust relative humidity

7/25/06 1:08 p.m change relative humidity to 68%

CSDust 71402

7/27/06 3:20 p.m The humidity chamber stopped functioning

The humidity dropped to 5-6%

The humidity chamber has been out of order during this period

8/01/06 2:20 p.m back to service

set humidity to 68%

file: CSDust 82100

X-H 8/24/06

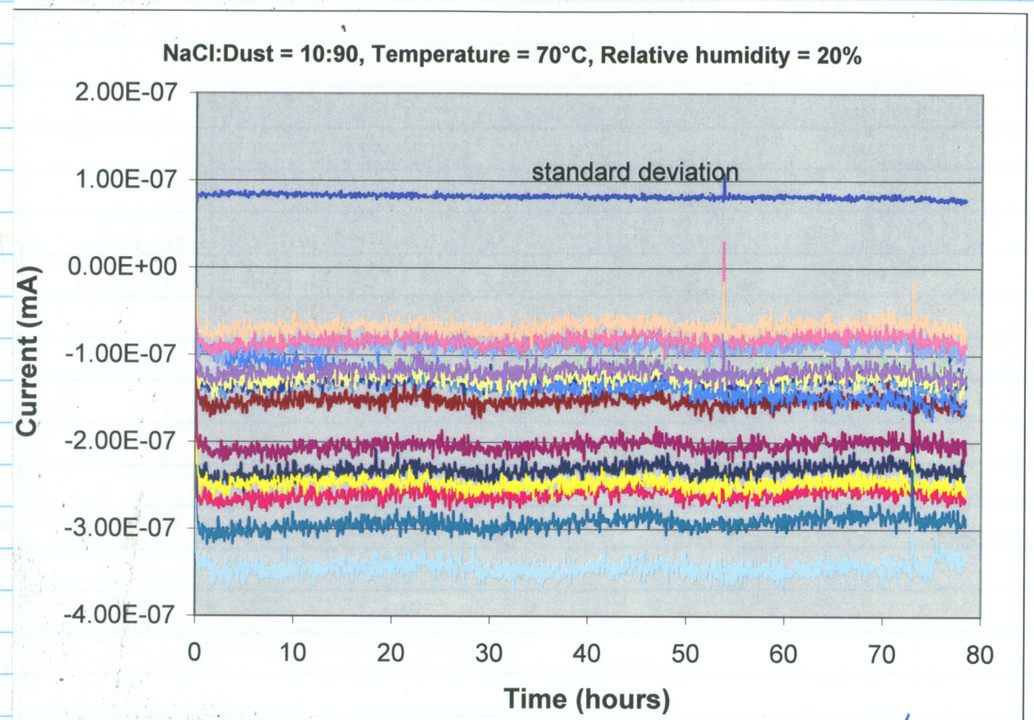
8/24/06 observation: mixture in probe #1 is wet, others ~~are~~ still appear dry

3:40 p.m set humidity to 80%

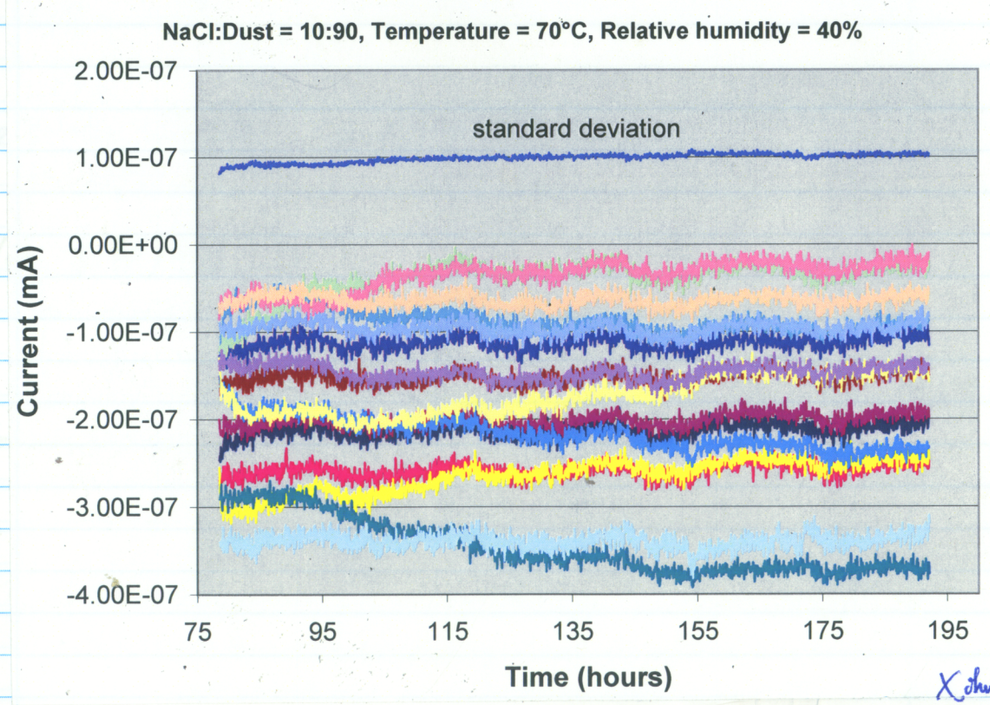
file: CSDust 82100
CSDust 82101
CSDust 82102
CSDust 82103

9/11/2006

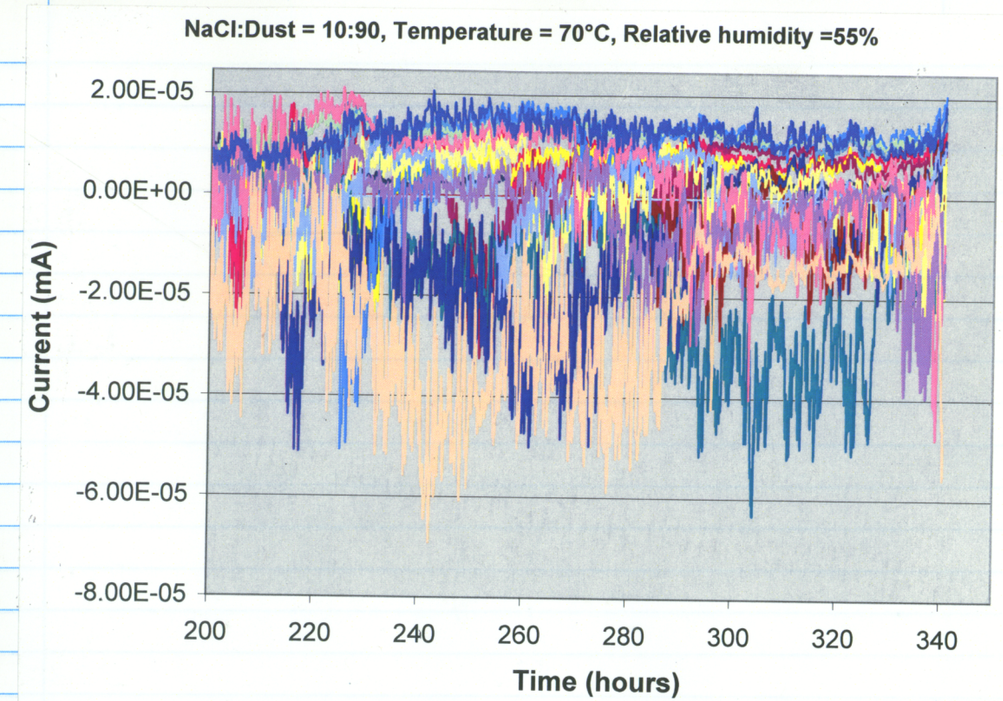
At 9/11/06 10:42 am, turn off humidity chamber, stop on-going tests.



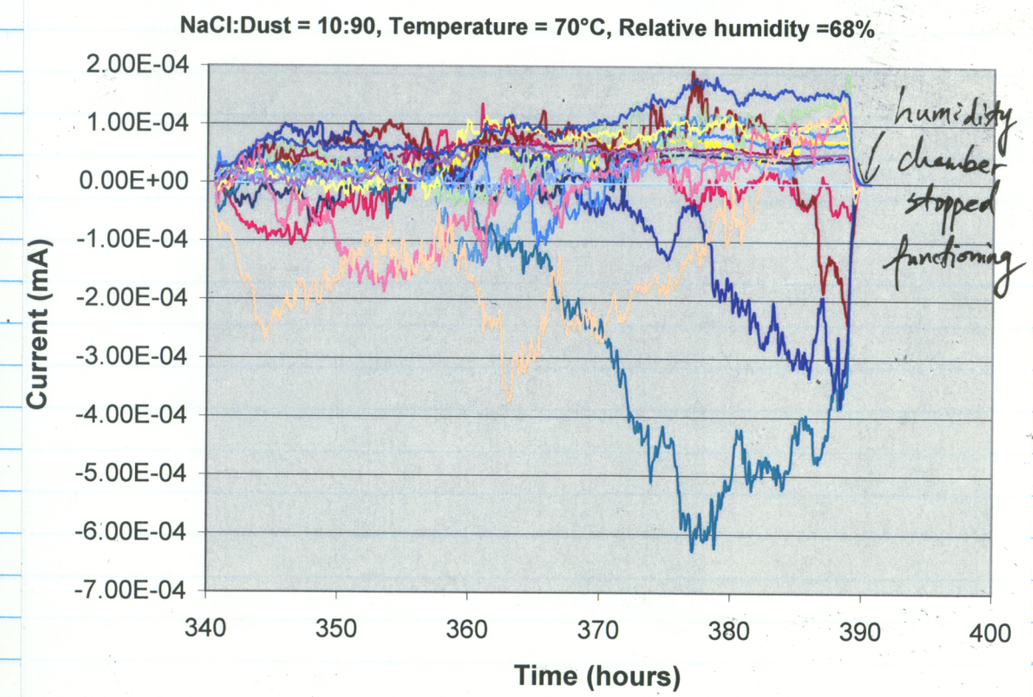
Xihua He 7/17/06



7/24/06
Xihua He



Xihua He 7/27/06



Xihua He
8/2/06