

## Assessment of Materials for Release from CDF (MMR #167600)

### History of the Material(s)

The collider detector at Fermilab (CDF) was one of two detector complexes located in the Tevatron ring. After the shutdown of the Tevatron, and the end of collider run II, in September 2011, the laboratory began the process of preparing the CDF building to accommodate future projects. Beginning in 2013, materials that were no longer needed were removed. Some of the materials leaving CDF are intended to be recycled. During the collider run, the CDF collision hall was posted as a Radiation Area for the beam on condition. When the collider run ended, the collision hall was down posted to a Controlled Area/Radioactive Materials Area, the same posting as the pit area. The other areas of CDF are not posted.

This load of materials consisted of ten steel plates (MMR Item #4), and was taken to the Railhead. The Railhead is posted as a Controlled Area/Radioactive Materials Area. These materials are intended to be recycled. All Facility Engineering Services Section (FESS) and Particle Physics Division (PPD) policies and procedures for releasing materials for recycling were followed.

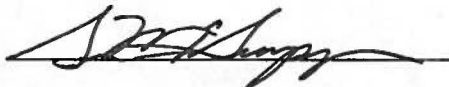
### Radiation Survey Information and Results

PPD surveyed all materials leaving CDF, before being transported to the Railhead, and determined that they were not radioactive. A Material Move Request (MMR #167600), dated 2/12/14 (this material was initially sent to the Railhead for storage), was completed and is included as part of this material evaluation package.

PPD also provided surveys dated 8/14/07, 2/12/09, 4/13/10, 7/18/10, 11/13/10, 12/27/10, 3/7/11, 6/25/11, 6/11/13, 8/27/13, 9/12/13 and 9/20/13. These surveys cover the last few years of the collider run, and after the deconstruction of the building was underway. They all confirm that the CDF building was/is posted appropriately and that no removable contamination is present.

FESS surveyed the materials again upon being placed in the Railhead, and also found that none of the materials on the MMR were radioactive. Another survey of the plates was performed on 10/16/14, by the FESS Radiation Safety Officer, and also confirmed that the material was not radioactive. This survey information, a Railhead area survey map, which indicates the location where the materials were surveyed, and pictures of the materials listed on MMR #167600 are included as part of the material evaluation package. The information contained in this package confirms that these materials can be recycled.

Recycling Package Generated by:



Date:

11/7/14

Susan McGimpsey, ESH&Q Radiation Protection Group

Recycling Package Approved by:



Date:


11/7/14

Don Cossairt, ESH&Q Radiation Protection Group Manager

**Assessment of Materials for Release from CDF (MMR #167600)**

**Survey Information**

Surveyor Name and ID: Susan McGimpsey, FESS Radiation Safety Officer, 12359N

Surveyor Signature: 

Survey Date: 10/16/14

Survey Location: Railhead- Scrap Sorting Area, Southeast Corner

**Instrument Information**

Instrument Name and Number: Bicron #32

Calibration Due Date: 2/2015

Battery Check: Ok

Source Check: Ok

Background Reading: 1600cpm

**Additional Survey Notes/Comments**

All materials were surveyed. No instrument readings above background were found.

Date <b>2/12/2014</b>	Requested By <b>JAMIE GRADO</b>	ID# <b>6576</b>	MS# <b>312</b>	Phone Ext. <b>16618</b>
Exact Location of Materials BLDG. or SITE # <b>CDF WEST DOCK</b>	AREA OF FLOOR # <b>SEE BELOW</b>	Dimensions <b>SEE BELOW</b>	Approx. Weight <b>SEE BELOW</b>	
Project Number <b>40</b>	Task Number <b>40-11.01.100</b>			

**Special Instructions for Requestor/Originator:** This form must be completed for all off-site shipments and for certain on-site material transfers. The requestor must make arrangements with Authorized Personnel to perform any required radiation survey. All requirements for transporting hazardous materials can be found in FESHM, and transporting radioactive materials can be found in the FRCM. Questions concerning the identification of hazards should be referred to your Division/Section/Center ES&H Department or the Shipping Department at x3470.

Contains Radioactive Material?  NO  YES  
 Certified By (PLEASE PRINT) **JAMIE GRADO 6576** ID # **JAMIE GRADO** Certified By (SIGNATURE) **JAMIE GRADO**

If Yes, List Radioactive Nature & Extent:

Contains DOT Hazardous Material?  NO  YES  
 Certified By (PLEASE PRINT) **JAMIE GRADO 6576** ID # **JAMIE GRADO** Certified By (SIGNATURE) **JAMIE GRADO**

If Yes, Check Hazard Type(s) Below & Attach MSD

- Explosive  Oxidizer  Corrosive  Non-Flammable Gas/Cryogen  Poisonous Gas/Cryogen  Poisonous/Infectious  
 Flammable Solid  Flammable Gas  Flammable Liquid  Other (Please describe)

Authorized Surveyor (PLEASE PRINT) **JAMIE GRADO 6576** ID # **JAMIE GRADO** Authorized Surveyor (SIGNATURE) **JAMIE GRADO** Survey Inst. / # **BICRON#T3 2/15** Calib. Due Date  
 BSS Verified Surveyor (PLEASE PRINT) **B.Z. WAGNER 06330** ID # **B.Z. WAGNER** BSS Verified Surveyor (SIGNATURE) **B.Z. WAGNER** Survey Inst. / # **49** Calib. Due Date **12-14**

Background Reading **1800CPM**

Source Check-OK

Battery Check-OK

PO/Line Item #	Quantity	Units	Description	Property Number	Serial Number
1	1	NT04635	WEST ALCOVE Shielding	5800#	72"X30 <sup>13</sup> / <sub>16</sub> "X7 <sup>3</sup> / <sub>4</sub> " 37W
2	1	NT04635	WEST ALCOVE Shielding	5800#	72 <sup>1</sup> / <sub>8</sub> "X30 <sup>5</sup> / <sub>8</sub> "X8 <sup>1</sup> / <sub>16</sub> " 38W
3	1	STORAGE	Bridge (go with what you wish)		ATTENTION!
4	10	STORAGE	SKID OF STEEL PLATES & UNISTRUT (SAVE)		ATTENTION!
		NT04336	12'x4'x1' Group I		

When material is returned to Fermilab, deliver to:  
 Name \_\_\_\_\_ Ext. \_\_\_\_\_ Location: \_\_\_\_\_

Ship to: **RAIL HEAD STORAGE**

Address: \_\_\_\_\_ Order Type: Procure  PO Number  EBAY  Not Applicable

City: \_\_\_\_\_ PO/PRN Number: \_\_\_\_\_ Return Authorization Number: \_\_\_\_\_

State & Zip Code: \_\_\_\_\_ Procurement Approval: \_\_\_\_\_ ID# \_\_\_\_\_  
 (Required for Shipments involving Purchase Orders)

Attention: \_\_\_\_\_ Telephone #: \_\_\_\_\_ Loan or Experiment Number: \_\_\_\_\_

International Shipment? No  Yes  Date Required at Destination: \_\_\_\_/\_\_\_\_/\_\_\_\_

If Yes, Country of Origin: \_\_\_\_\_ Mode of Shipment: Most Economical  Vendor Pickup  Overnight

Value of Items: \$ \_\_\_\_\_ Mode of Payment: Prepaid  Collect

**Reason for Shipment**

In Warranty Repair  Return for Credit  Out of Warranty Repair  & Account Number: \_\_\_\_\_

Return for Replacement  Loan  Return of Loan  Fabrication

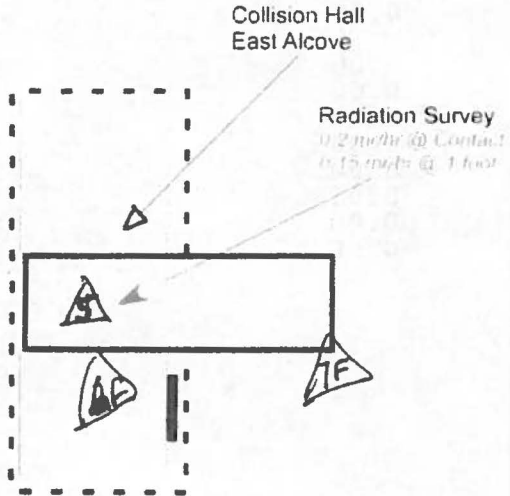
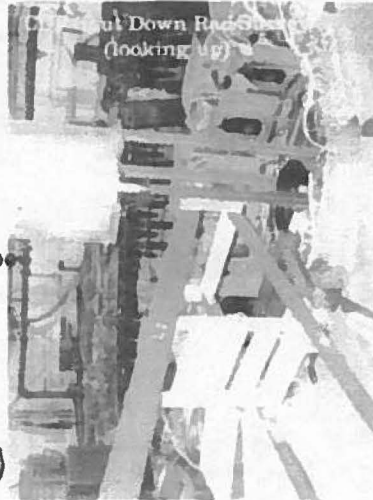
Special Shipping Instructions: **RAIL HEAD STORAGE** **TIP 2/17/14 SB** **Completed in office 3/11/14**



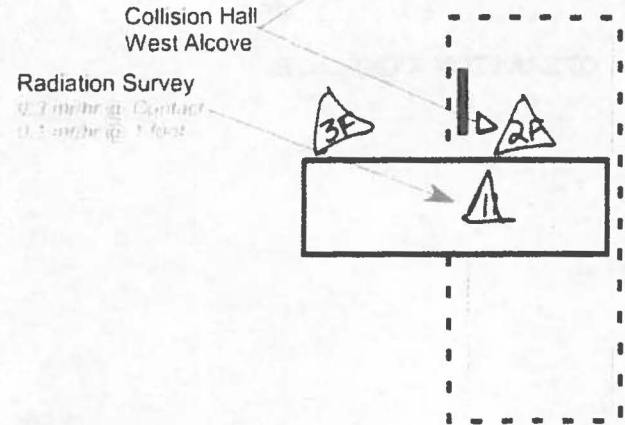


**FERMILAB**  
PARTICLE PHYSICS DIVISION

# CDF Collision Hall (Shut Down Radiation Survey)



Survey on Beam Pipe  
1.0 mR/hr @ Contact  
0.2 mR/hr @ 1 foot



Collision Hall Exits

LOCATION: <u>CDF Collision Hall</u>		DATE: <u>8/4/07</u>		TIME: <u>1315</u>		PURPOSE: <u>RADIATION SURVEY</u>			
Radiation Instruments Used				Bkgd <u>40</u> cpm		Comments:			
Inst Type:	<u>Bicron</u>	<u>Tracor</u>		Wipe #	Reading			Wipe #	Reading
Inst No:	<u>71</u>	<u>#5</u>		1	_____ cpm			7	_____ cpm
Batt/Source Chk:	<u>SAT</u>	<u>SAT</u>		2	_____ cpm			8	_____ cpm
Cal. Due Date:	<u>8/2008</u>	<u>6/2008</u>		3	_____ cpm			9	_____ cpm
				4	_____ cpm			10	_____ cpm
<b>LEGEND</b> Numbers appearing on map are mR/hr @ 1 ft readings unless denoted with symbols below * = mR/hr @ contact △ = Wipe    △* = Floor wipe				5	_____ cpm		_____ cpm		
				6	_____ cpm		_____ cpm		
				Surveyed By: <u>[Signature]</u>		Reviewed By: <u>[Signature]</u>			



THU AUG 16, 2007

GROUP C

Part Phy Div: LOC/TYPE CDF Collision Hall, PER. TAKING J. DeLao, DATE 8/16/07, PER. COUNT. 215, CC. List

SEQ. NO.	S.N.	COUNT TIME	ALPHA GROSS CPM	BETA-GAMMA GROSS CPM	ALPHA NET DPM	BETA-GAMMA NET DPM	ALPHA NET nCi	BETA-GAMMA NET nCi
0	51	10.00	0	1.7	*BACKGROUND REFERENCE*		BETA-GAMMA Ld = 40.1 DPM	
1	116	1.00	0	3.0	0	7	0	0.00
2	61	1.00	0	1.0	0	0	0	0
3	57	1.00	0	2.0	0	1	0	0.00
4	147	1.00	1.0	4.0	10	12	0.00	0.00
5	21	1.00	0	1.0	0	0	0	0
6	139	1.00	0	2.0	0	1	0	0.00
7	24	1.00	0	2.0	0	1	0	0.00
8	20	1.00	0	2.0	0	1	0	0.00
9	23	1.00	0	3.0	0	7	0	0.00
10	67	1.00	0	5.0	0	18	0	0.00

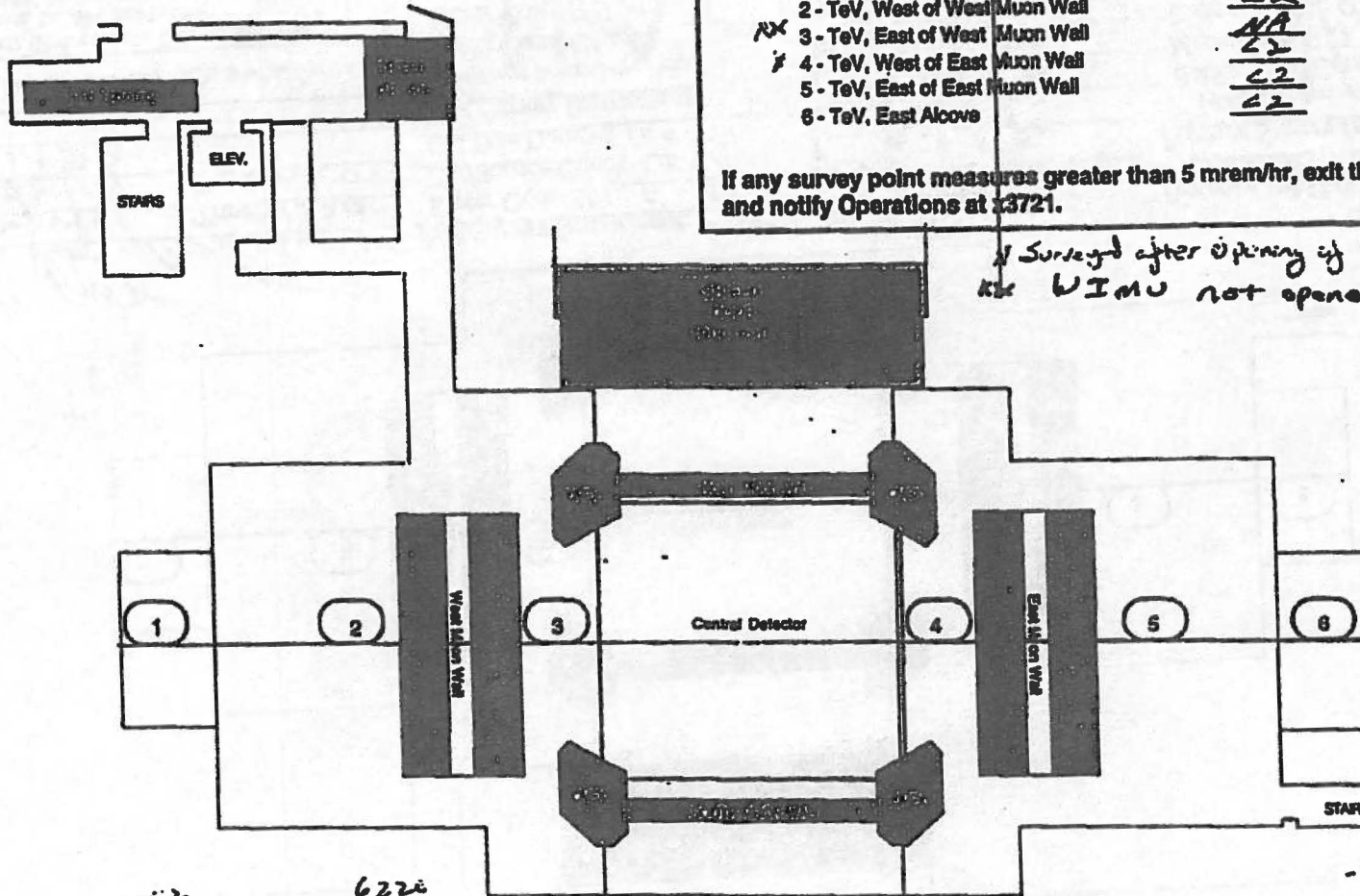
OPERATION COMPLETE

Run #2



# CDF Collision Hall

## Beam-Off Radiation Survey Map



### Survey Locations

- 1 - TeV, West Alcove
- 2 - TeV, West of West Muon Wall
- NX* 3 - TeV, East of West Muon Wall
- X* 4 - TeV, West of East Muon Wall
- 5 - TeV, East of East Muon Wall
- 6 - TeV, East Alcove

### Radiation measured (mrem/hr): At One Foot

C2  
C2  
NA  
C2  
C2  
C2

If any survey point measures greater than 5 mrem/hr, exit the Collision Hall and notify Operations at 33721.

*Surveyed after opening of 2 MU  
KX WIMU not opened*

Surveyors: *Doc <sup>7152</sup>hn* *Dersin Allen* *6222*  
 Survey Date: 4/13/10 Time: 0545  
 Beam Off Date: 4/13/10 Time: 0524  
 Beam Intensity: 10.612

○ = mrem/hr @ 1ft   □ = mrem/hr @ contact   △ = w/No location

Survey Meter Codes: (Rad. example, L-69 = LSM #69)  
 Rad. Meters: E=Elcon, L=LSM, LL=Ludlum  
 Contam. Meters: E=Eberline, L=Ludlum, M=Minimeter

Rad. Survey Instrument: -  
 Meter Code-S/N: L-23  
 Bat/Source Check: OK [✓]  
 Cal. Due Date: 7/10

Wipe Survey Instrument:  
 (if different than prewipe meter)  
 Background Counts: N/A cpm  
 Meter Code-S/N: N/A  
 Battery Check: OK [✓], AC [✓]  
 Cal. Due Date: -

Wipe Results:  
 (in cpm/100cm<sup>2</sup> above bkgd.)

1. 2   2. N/A   3. N/A  
 4. 5   5. N/A  
 7. 8   8. N/A   9. N/A  
 10. 11   11. 12

Reviewed By ARSO/RSO:  
 By: \_\_\_\_\_ On: \_\_\_\_\_

Pancake Probe OK? [✓]  
 Precision Limit: (<10,000 cpm/3sq.ft)

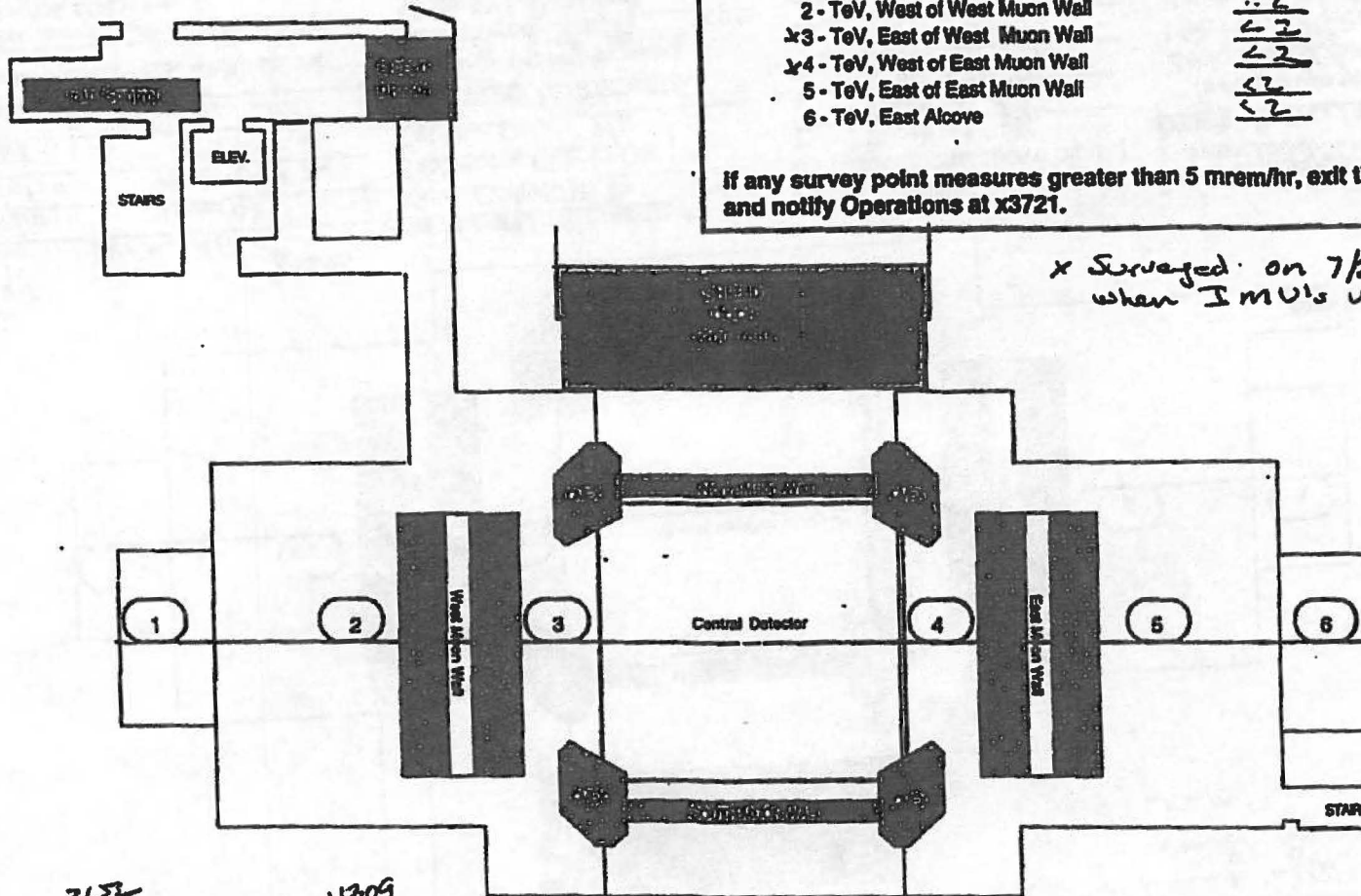
Prewipe Survey Instrument:  
 (if different than wipe meter)  
 Background Counts: N/A cpm  
 Meter Code-S/N: N/A  
 Battery Check: OK [✓], AC [✓]  
 Cal. Due Date: \_\_\_\_\_

Modified: 12MAR01 R. Zimmermann



# CDF Collision Hall

## Beam-Off Radiation Survey Map



Survey Locations	Radiation measured (mrem/hr) At One Foot
1 - TeV, West Alocve	<2
2 - TeV, West of West Muon Wall	<2
3 - TeV, East of West Muon Wall	<2
4 - TeV, West of East Muon Wall	<2
5 - TeV, East of East Muon Wall	<2
6 - TeV, East Alocve	<2

If any survey point measures greater than 5 mrem/hr, exit the Collision Hall and notify Operations at x3721.

x Surveyed on 7/20/10 when 1 MV's were open.

7152 11309  
 Surveyors: Dee Hahn Phil Schobert  
 Survey Date: 7/18/10 Time: 10:12  
 Beam Off Date: 7/18/10 Time: 00:06  
 Beam Intensity: 9.93E12

**Rad. Survey Instrument:**  
 Meter Code-S/N: L-66  
 Bat/Source Check: OK  
 Cal. Due Date: 10/10  
**Wipe Survey Instrument:**  
 (if different than prev wipe meter)  
 Backg. and Counts: N/A cpm  
 Meter Code S/N: N/A  
 Battery Check: OK [ ] AC [ ]  
 Cal. Due Date: \_\_\_\_\_

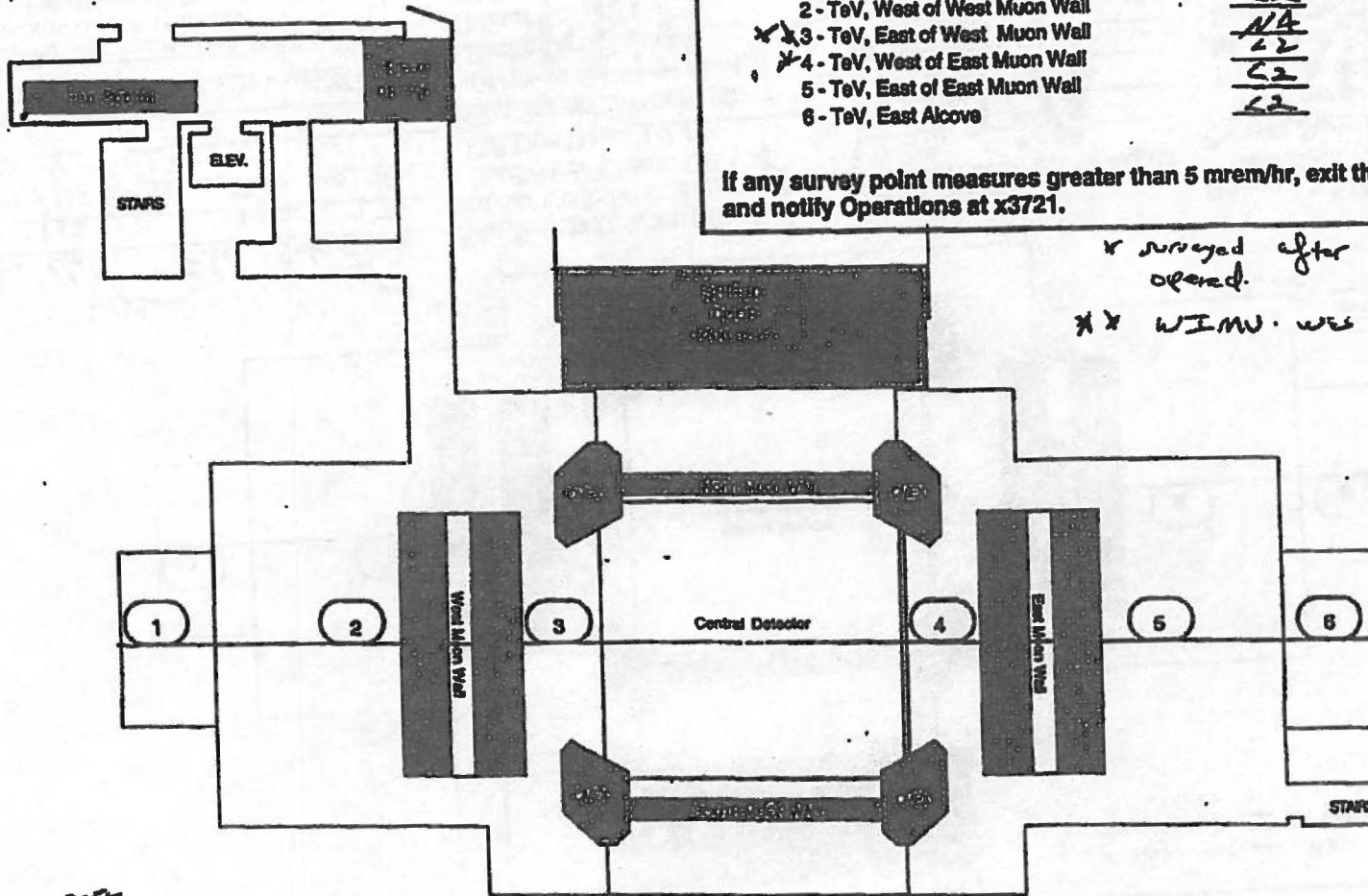
**Wipe Results:**  
 (in cpm/100cm<sup>2</sup> above bkgd.)  
 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_  
 4. N/A 5. N/A  
 7. \_\_\_\_\_ 8. \_\_\_\_\_ 9. \_\_\_\_\_  
 10. \_\_\_\_\_ 11. \_\_\_\_\_ 12. \_\_\_\_\_  
 Reviewed By ARSO/RSO:  
 By: \_\_\_\_\_ On: \_\_\_\_\_

**Pancake Probe OK?** 1/1  
 (Exceeds Limit: (<10,000 cpm/3sq.ft))  
**Prewipe Survey Instrument:**  
 (if different than wipe meter)  
 Backg. and Counts: N/A cpm  
 Meter Code S/N: N/A  
 Battery Check: OK [ ] AC [ ]  
 Cal. Due Date: \_\_\_\_\_  
 Modified: 12MAR01 R. Zimmerman

○ = mrem @ 1ft □ = mrem @ contact △ = w/ location  
**Survey Meter Codes:** (Rad. example, L-69 = LSM #69)  
**Rad. Meters:** E=Eltron, L=LSM, LL=Ludlum  
**Contam. Meters:** E=Eberline, L=Ludlum, M=Minimeter

# CDF Collision Hall

## Beam-Off Radiation Survey Map



Survey Locations	Radiation measured (mrem/hr) At One Foot
1 - TeV, West Alcove	<2
2 - TeV, West of West Muon Wall	<2
* 3 - TeV, East of West Muon Wall	N/A
* 4 - TeV, West of East Muon Wall	<2
5 - TeV, East of East Muon Wall	<2
6 - TeV, East Alcove	<2

If any survey point measures greater than 5 mrem/hr, exit the Collision Hall and notify Operations at x3721.

\* surveyed after wall was opened.  
 \*\* WIMW. was not opened.

Surveyors: <sup>7152</sup> Dee Hahn <sup>6220</sup> Derin Allen  
 Survey Date: 11/12/10 Time: 0616  
 Beam Off Date: 11/19/10 Time: 0602  
 Beam Intensity: 10.98 E12

○ = m/hr@1ft □ = m/hr@contact △ = wiper station

Survey Meter Codes: (Rad. example, L-69 = LSM #69)  
 Rad. Meters: E=Elcom, L=LSM, LL=Ludlum  
 Contam. Meters: E=Eberline, L=Ludlum, M=Minimeter

Rad. Survey Instrument: -  
 Meter Code-S/N: E-84  
 Bat/Source Check: OK [x]  
 Cal. Due Date: 8/11  
 Wipe Survey Instrument:  
 (if different than prewipe meter)  
 Background Counts: N/A cpm  
 Meter Code-S/N: N/A  
 Battery Check: OK [ ], AC [ ]  
 Cal. Due Date: \_\_\_\_\_

Wipe Results:  
 (in cpm/100cm<sup>2</sup> above bkgd.)  
 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_  
 4. \_\_\_\_\_ 5. \_\_\_\_\_ 6. \_\_\_\_\_  
 7. \_\_\_\_\_ 8. \_\_\_\_\_ 9. \_\_\_\_\_  
 10. \_\_\_\_\_ 11. \_\_\_\_\_ 12. \_\_\_\_\_

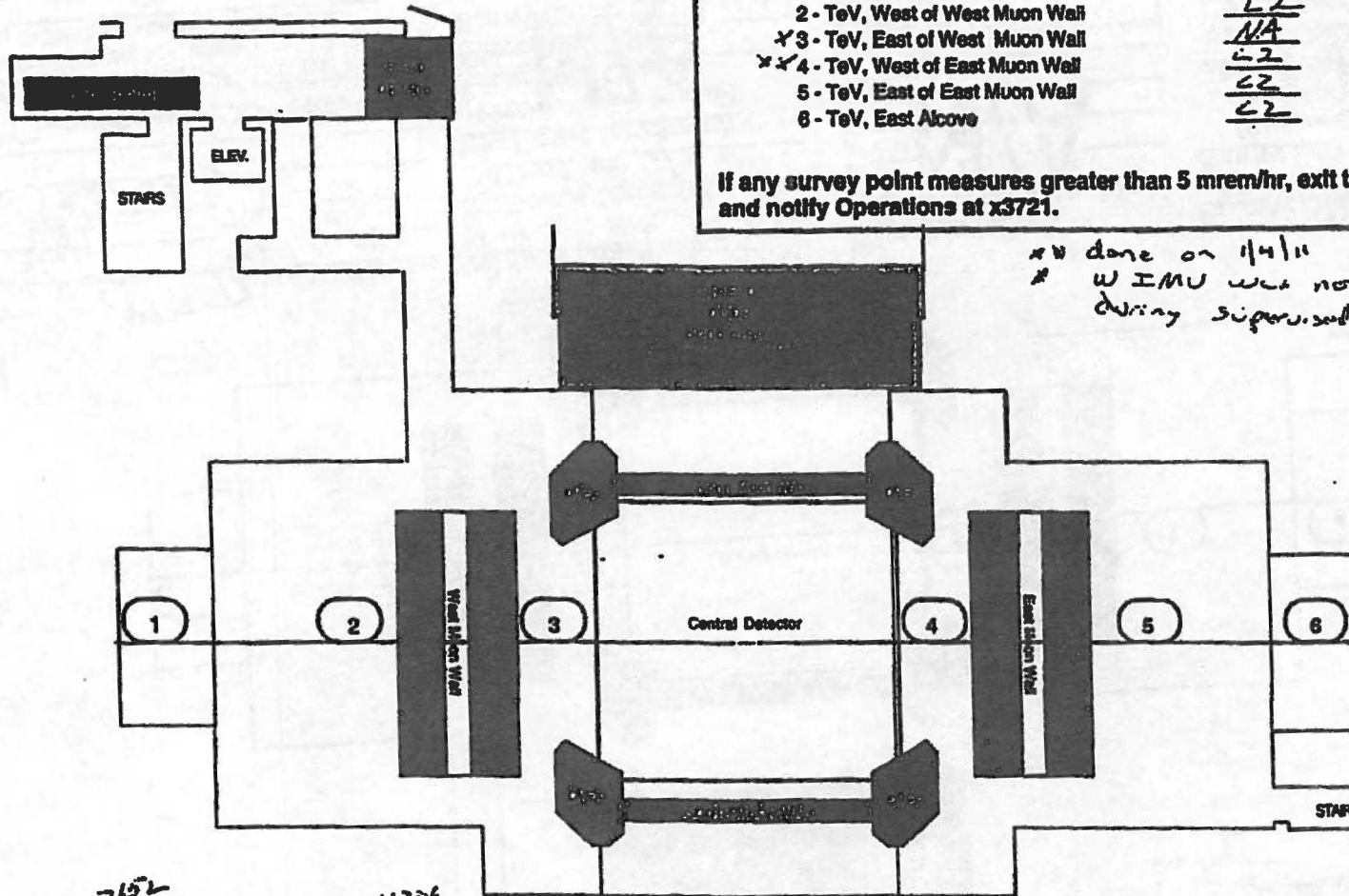
Reviewed By ARSO/RSO:  
 By: \_\_\_\_\_ On: \_\_\_\_\_

Pancake Prewipe OK? [ ]  
 Prewipe Limit: (<10,000 cpm/3sq.ft)  
 Prewipe Survey Instrument:  
 (if different than wipe meter)  
 Background Counts: N/A cpm  
 Meter Code-S/N: N/A  
 Battery Check: OK [ ], AC [ ]  
 Cal. Due Date: \_\_\_\_\_

Modified: 12MAR01 R. Zimmermann

# CDF Collision Hall

## Beam-Off Radiation Survey Map



### Survey Locations

- 1 - TeV, West Alcove
- 2 - TeV, West of West Muon Wall
- 3 - TeV, East of West Muon Wall
- 4 - TeV, West of East Muon Wall
- 5 - TeV, East of East Muon Wall
- 6 - TeV, East Alcove

### Radiation measured (mrem/hr) At One Foot

L2  
L2  
NA  
L2  
L2  
L2

If any survey point measures greater than 5 mrem/hr, exit the Collision Hall and notify Operations at x3721.

*rw done on 11/11  
\* WIMU was not opened  
during supervised access*

Surveyors: Dee Fuhr <sup>7152</sup> Phil Schlebach <sup>11309</sup>  
 Survey Date: 4/27/10 Time: 11:20  
 Beam Off Date: 12/25/10 Time: 0924  
 Beam Intensity: 109.77

**Rad Survey Instrument:**  
 Meter Code-S/N: L-38  
 Bat/Source Check: OK [X]  
 Cal. Due Date: 8/11

**Wipe Survey Instrument:**  
 (if different than prev wipe meter)  
 Background Counts: NA cpm  
 Meter Code S/N: NA  
 Battery Check: OK [ ], AC [ ]  
 Cal. Due Date: \_\_\_\_\_

**Wipe Results:**  
 (in cpm/100cm<sup>2</sup> above bkgd.)  
 1. 2 2. 3  
 3. NA 4. 5  
 5. NA 6. 6  
 7. NA 8. 7  
 9. NA 10. 8  
 11. NA 12. 9

**Pancake PMA OK?** 1 / 1  
 Precision Limit: (<10,000 cpm/3sq.ft)  
**Prev wipe Survey Instrument:**  
 (if different than wipe meter)  
 Background Counts: NA cpm  
 Meter Code S/N: NA  
 Battery Check: OK [ ], AC [ ]  
 Cal. Due Date: \_\_\_\_\_

Reviewed By ARSO/RSO:  
 By: \_\_\_\_\_ On: \_\_\_\_\_

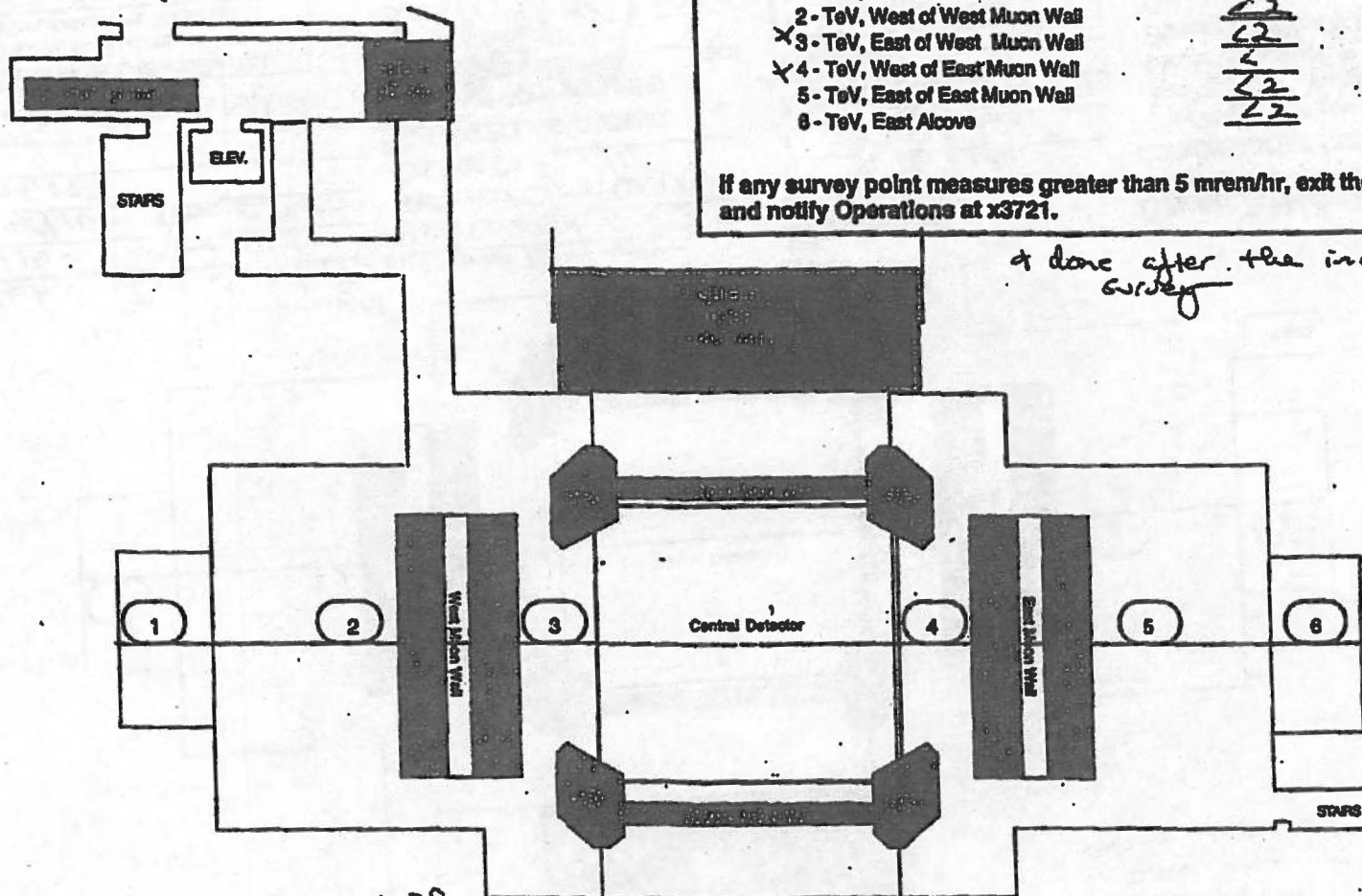
Modified: 12MAR01 R. Zimmermann

○ = mrem/hr @ 1ft □ = mrem/hr @ contact △ = wipe location  
**Survey Meter Codes:** (Rad. example, L-69 = LSM #69)  
**Rad Meters:** E=Eltron, L=LSM, LL=Ludlum  
**Contact Meters:** E=Eberline, L=Ludlum, M=Minimeter



# CDF Collision Hall

## Beam-Off Radiation Survey Map



**Survey Locations**

Survey Locations	Radiation measured (mrem/hr) At One Foot
1 - TeV, West Alcove	<u>2</u>
2 - TeV, West of West Muon Wall	<u>2</u>
X 3 - TeV, East of West Muon Wall	<u>2</u>
X 4 - TeV, West of East Muon Wall	<u>2</u>
5 - TeV, East of East Muon Wall	<u>2</u>
6 - TeV, East Alcove	<u>2</u>

If any survey point measures greater than 5 mrem/hr, exit the Collision Hall and notify Operations at x3721.

*done after the initial survey*

Surveyors: Dee Hahn <sup>752</sup> Dervin Allen <sup>6220</sup>  
 Survey Date: 3/2/11 Time: 0650  
 Beam Off Date: 3/6/11 Time: 1820  
 Beam Intensity: 1.22E73

**Rad. Survey Instrument:**  
 Meter Code-S/N: L-38  
 Bat/Source Check:  OK  
 Cal. Due Date: 8/1

**Wipe Results:**  
 (in cpm/100cm<sup>2</sup> above bkgd.)  
 1. N/A 2. N/A 3. N/A  
 4. N/A 5. N/A  
 7. N/A 8. N/A 9. N/A  
 10. N/A 11. N/A 12. N/A

**Pancake Probe OK?** 1/1  
 Prewipe Limit: (<10,000 cpm/3sq.ft)  
**Prewipe Survey Instrument:**  
 (if different than wipe meter)  
 Background Counts: N/A cpm  
 Meter Code, S/N: N/A  
 Battery Check:  OK,  AC  
 Cal. Due Date: \_\_\_\_\_

○ = mrem@1ft □ = mrem@contact △ = wipe location  
**Survey Meter Codes:** (Rad. example, L-69 = LSM #69)  
**Rad. Meters:** E=Elron, L=LSM, LL=Ludlum  
**Contam. Meters:** E=Eberline, L=Ludlum, M=Minimeter

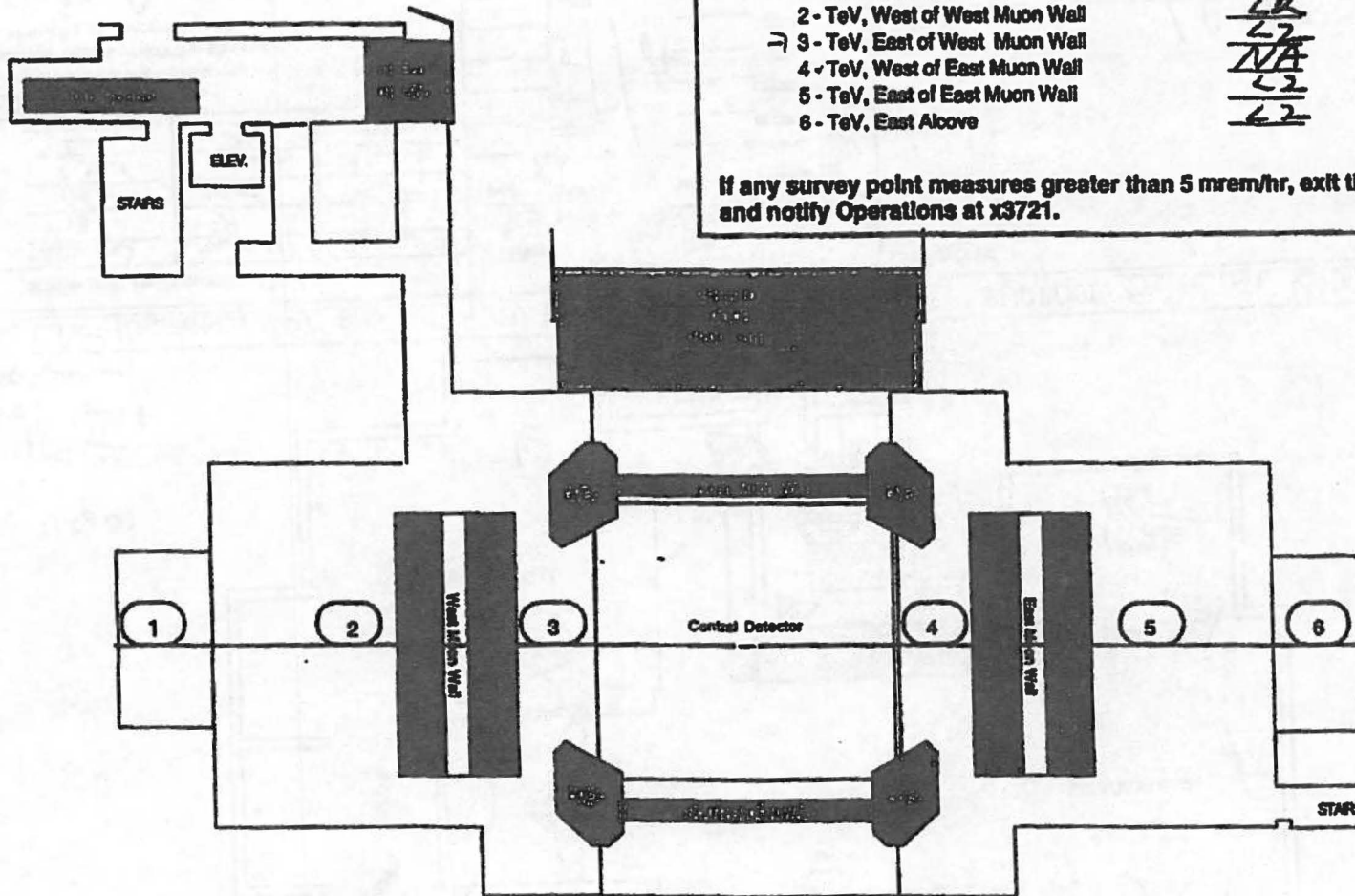
**Wipe Survey Instrument:**  
 (if different than prewipe meter)  
 Background Counts: N/A cpm  
 Meter Code, S/N: N/A  
 Battery Check:  OK,  AC  
 Cal. Due Date: \_\_\_\_\_

Reviewed By ARSO/RSO:  
 By: \_\_\_\_\_ On: \_\_\_\_\_

Modified: 12MAR01 R. Zimmermann

# CDF Collision Hall

## Beam-Off Radiation Survey Map



Survey Locations	Radiation measured (mrem / hr) At One Foot
1 - TeV, West Alcove	<u>2.2</u>
2 - TeV, West of West Muon Wall	<u>2.2</u>
3 - TeV, East of West Muon Wall	<u>2.2</u>
4 - TeV, West of East Muon Wall	<u>N/A</u>
5 - TeV, East of East Muon Wall	<u>2.2</u>
6 - TeV, East Alcove	<u>2.2</u>

If any survey point measures greater than 5 mrem/hr, exit the Collision Hall and notify Operations at x3721.

Surveyors: Doc Hahn Devin Allen  
 Survey Date: 6/25/11 Time: 10:35  
 Beam Off Date: 6/25/11 Time: 10:08  
 Beam Intensity: 9.8 E 12

Rad. Survey Instrument: -  
 Meter Code-S/N: L-35  
 Bat/Source Check: OK [✓]  
 Cal. Due Date: 10/2011

Wipe Survey Instrument:  
 (if different than prewipe meter)  
 Background Counts: N/A cpm  
 Meter Code/S/N: N/A  
 Battery Check: OK [✓], AC [ ]  
 Cal. Due Date: \_\_\_\_\_

Wipe Results:  
 (in cpm/100cm<sup>2</sup> above bkgd.)  
 1. \_\_\_\_\_ 2. N/A 3. \_\_\_\_\_  
 4. \_\_\_\_\_ 5. N/A 6. \_\_\_\_\_  
 7. \_\_\_\_\_ 8. N/A 9. \_\_\_\_\_  
 10. \_\_\_\_\_ 11. \_\_\_\_\_ 12. \_\_\_\_\_

Reviewed By ARSO/RSO:  
 By: \_\_\_\_\_ On: \_\_\_\_\_

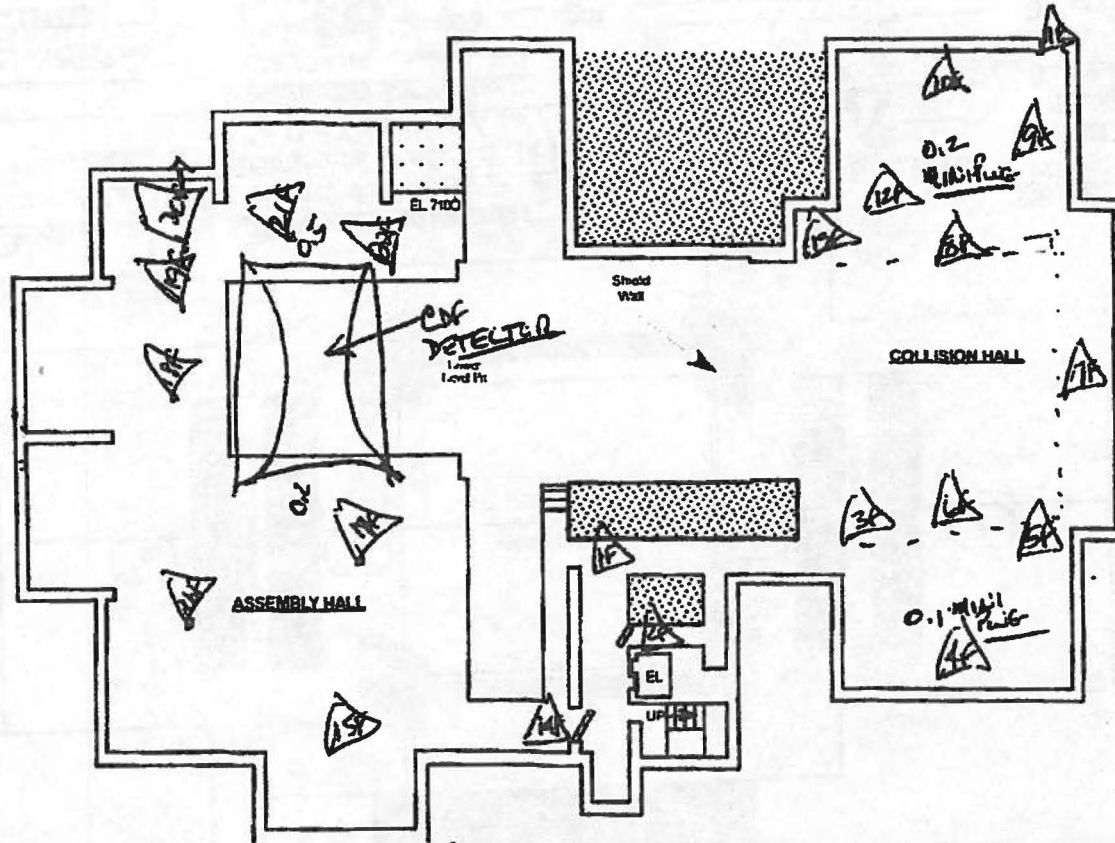
Pancake Probe OK? 1 1  
 Precision Limit: (<10,000 cpm/32q.ft)  
 Prewipe Survey Instrument:  
 (if different than wipe meter)  
 Background Counts: N/A cpm  
 Meter Code/S/N: N/A  
 Battery Check: OK [✓], AC [ ]  
 Cal. Due Date: \_\_\_\_\_

Modified: 12MAR01 R. Zimmermann

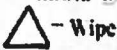
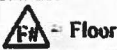
○ = mrem/hr @ 1ft □ = mrem/hr @ contact △ = wipe location

Survey Meter Codes: (Rad. example, L-69 = LSM #69)  
 Rad. Meters: E=Elron, L=LSM, LL=Ludlum  
 Contam. Meters: E=Eberline, L=Ludlum, M=Minimeter

# CDF Assembly Hall-Lower Level



OTHER INST. USED:  
BIGNON # 14  
BATT/SOURCE CHECK: SAT  
CAL DUE DATE: 3/2014  
BKG - 1400cpm

LOCATION: <u>CDF Assembly Hall and PIT</u>			DATE: <u>6/11/2013</u>	TIME: <u>1000</u>	PURPOSE: <u>SPECIAL RADIATION SURV</u>
Radiation Instruments Used			Bkgd <u>40</u> cpm		Comments:
Inst Type:	<u>SPEDON</u>	<u>LOWNA 177-4</u>	<u>LOWNA 177-4</u>	<u>WIPES 1-22 ALL READ BKG.</u>	
Inst No:	<u>13</u>	<u>59</u>	<u>31</u>		
Batt/Source Chk:	<u>SAT</u>	<u>SAT</u>	<u>SAT</u>		
Cal. Due Date:	<u>3/2014</u>	<u>12/2013</u>	<u>1/2013</u>		
Background:	<u>40</u>	<u>40</u>	<u>40</u>		
<b>LEGEND</b> Numbers appearing on map are mR/hr @ 1 ft readings unless denoted with symbols below * = mR/hr @ contact  - Wipe  - Floor wipe			Wipe #    Reading    Wipe #    Reading _____ cpm    _____ cpm _____ ccpm    _____ ccpm _____ ccpm    _____ ccpm _____ ccpm    _____ ccpm _____ ccpm    _____ ccpm _____ ccpm    _____ ccpm _____ ccpm    _____ ccpm		
			Surveyed By: <u>[Signature]</u> Reviewed By: _____		





Fermilab  
E-111 Software V1

### Particle Physics Div. Wipe Report

Tuesday, June 11, 2013

Location: CDF Collision Hall - Pit Area

Taken By: J. DeLo

Date: 6/11/13

Counted By: MF

CC: DeLo

Batch ID: Wipes - PPD - 201306111031

Count Time: 1.0 min.

Count Mode: Simultaneous

Operating Volts: 1440

Count Date: 6/11/2013

Daily Bkgd Count Time: 10 min.

Geometry: Swipe/Smear

Plateau Set: 20

FNAL Alpha Eff: 11.43

Alpha Bkgd Rate: 0.00 ± 0.00 CPM

Alpha Count Ld = 2.72 CPM

Device: S5-XLB

FNAL Beta Eff: 15.43

Beta Bkgd Rate: 1.90 ± 0.44 CPM

Beta-Gamma Count Ld = 7.49 CPM

Beta-Gamma Ld = 48.57 DPM

Wipe #	Carrier #	Alpha Gross CPM	Beta-Gamma Gross CPM	Alpha Net CPM	Beta-Gamma Net CPM	Alpha Net DPM	Beta-Gamma Net DPM	Alpha Net nCi	Beta-Gamma Net nCi	Flags
1	57	0.0	6.0	0.0	4.1	0.0	26.6	0.00	0.01	
2	18	0.0	4.0	0.0	2.1	0.0	13.6	0.00	0.01	
3	132	0.0	6.0	0.0	4.1	0.0	26.6	0.00	0.01	
4	66	0.0	3.0	0.0	1.1	0.0	7.1	0.00	0.00	
5	69	0.0	2.0	0.0	0.1	0.0	0.6	0.00	0.00	
6	16	1.0	3.0	1.0	1.1	8.7	7.1	0.00	0.00	
7	72	0.0	3.0	0.0	1.1	0.0	7.1	0.00	0.00	
8	8	0.0	2.0	0.0	0.1	0.0	0.6	0.00	0.00	
9	41	0.0	3.0	0.0	1.1	0.0	7.1	0.00	0.00	
10	21	1.0	1.0	1.0	0.0	8.7	0.0	0.00	0.00	
11	52	0.0	4.0	0.0	2.1	0.0	13.6	0.00	0.01	
12	3	0.0	2.0	0.0	0.1	0.0	0.6	0.00	0.00	
13	60	1.0	3.0	1.0	1.1	8.7	7.1	0.00	0.00	
14	49	0.0	1.0	0.0	0.0	0.0	0.0	0.00	0.00	
15	43	0.0	1.0	0.0	0.0	0.0	0.0	0.00	0.00	
16	86	0.0	5.0	0.0	3.1	0.0	20.1	0.00	0.01	
17	10	0.0	2.0	0.0	0.1	0.0	0.6	0.00	0.00	
18	29	0.0	1.0	0.0	0.0	0.0	0.0	0.00	0.00	
19	77	0.0	2.0	0.0	0.1	0.0	0.6	0.00	0.00	
20	45	0.0	2.0	0.0	0.1	0.0	0.6	0.00	0.00	
21	87	1.0	1.0	1.0	0.0	8.7	0.0	0.00	0.00	
22	51	0.0	3.0	0.0	1.1	0.0	7.1	0.00	0.00	

Reviewed by:

Rev. 1/13/10,kjb

C:\Users\RAF-AD~1\AppData\Local\Temp\Sample Report - PPD (68E82780-4C

Batch Key #: 2,859 Group Plate: A

Printed: 6/11/2013 1:02:15PM

Page 1 of 1





### RAF Wipe Count Request Form

Date Submitted 8/28/2013

General Location of Wipes CDF "Spot Checked Items" Wipes

Who Took Wipes Jose De la O Ext. 2557

Number of Wipes 8 Date Wipes Taken 8/27/2013

Count Comments or Requests Accelerator Produced Isotopes

Results To: (Full Name)

Jose De La O delao@fnal.gov

- Place all wipes in numerical order in a ziplock bag.
- Attach Count Request Form to outside of bag.
- DO NOT use staples.
- Include no more than 80 wipes per Count Request.

<b>RAF USE ONLY</b>		
Received By <u>Melen?</u>	Quantity <u>8</u>	Date/Time <u>8/28/13 9:40</u>

PPD-1  
A-2)



## Particle Physics Div. Wipe Report

Wednesday, August 28, 2013

Location: *CDF "Spot Checked Items"*

Taken By: *J. DeLaO*

Date: *9/27/13*

Counted By: *MF*

CC: *DeLaO*

Batch ID: Wipes - PPD - 201308281119

Count Time: 1.0 min.

Count Mode: Simultaneous

Operating Volts: 1440

Count Date: 8/28/2013

Daily Bkgd Count Time: 10 min.

Geometry: Swipe/Smear

Plateau Set: 20

FNAL Alpha Eff: 11.43

Alpha Bkgd Rate:  $0.20 \pm 0.14$  CPM

Alpha Count Ld = 4.27 CPM

Device: S5-XLB

FNAL Beta Eff: 15.43

Beta Bkgd Rate:  $1.80 \pm 0.42$  CPM

Beta-Gamma Count Ld = 7.37 CPM

Beta-Gamma Ld = 47.75 DPM

Wipe #	Carrier #	Alpha Gross CPM	Beta-Gamma Gross CPM	Alpha Net CPM	Beta-Gamma Net CPM	Alpha Net DPM	Beta-Gamma Net DPM	Alpha Net nCi	Beta-Gamma Net nCi	Flags
1	21	1.0	2.0	0.8	0.2	7.0	1.3	0.00	0.00	
2	36	0.0	2.0	0.0	0.2	0.0	1.3	0.00	0.00	
3	79	0.0	2.0	0.0	0.2	0.0	1.3	0.00	0.00	
4	32	1.0	0.0	0.8	0.0	7.0	0.0	0.00	0.00	
5	103	1.0	2.0	0.8	0.2	7.0	1.3	0.00	0.00	
6	108	0.0	4.0	0.0	2.2	0.0	14.3	0.00	0.01	
7	28	0.0	4.0	0.0	2.2	0.0	14.3	0.00	0.01	
8	31	0.0	2.0	0.0	0.2	0.0	1.3	0.00	0.00	

Reviewed by: \_\_\_\_\_

Rev. 1/13/10 skb

C:\Users\RAF-AD-1\AppData\Local\Temp\Sample Report - PPD (D008F0FA-C:

Batch Key #: 3,014 Group Plate: A

Printed: 8/28/2013 11:30:49AM

Page 1 of 1



# CDF Assembly Hall

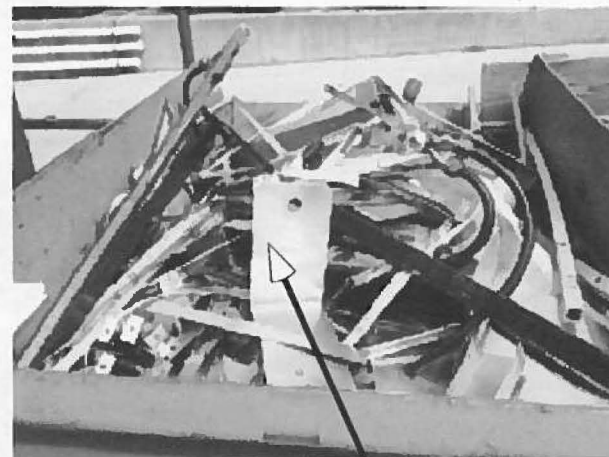


6F

1F



7F



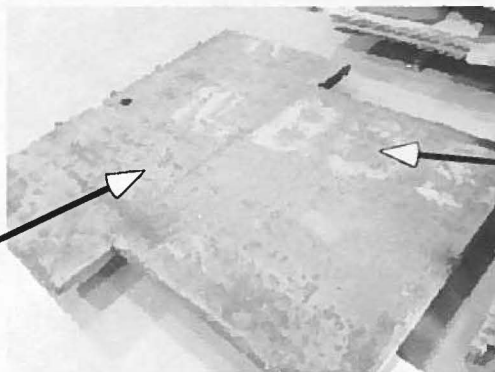
8F



5F

4F

2F



3F

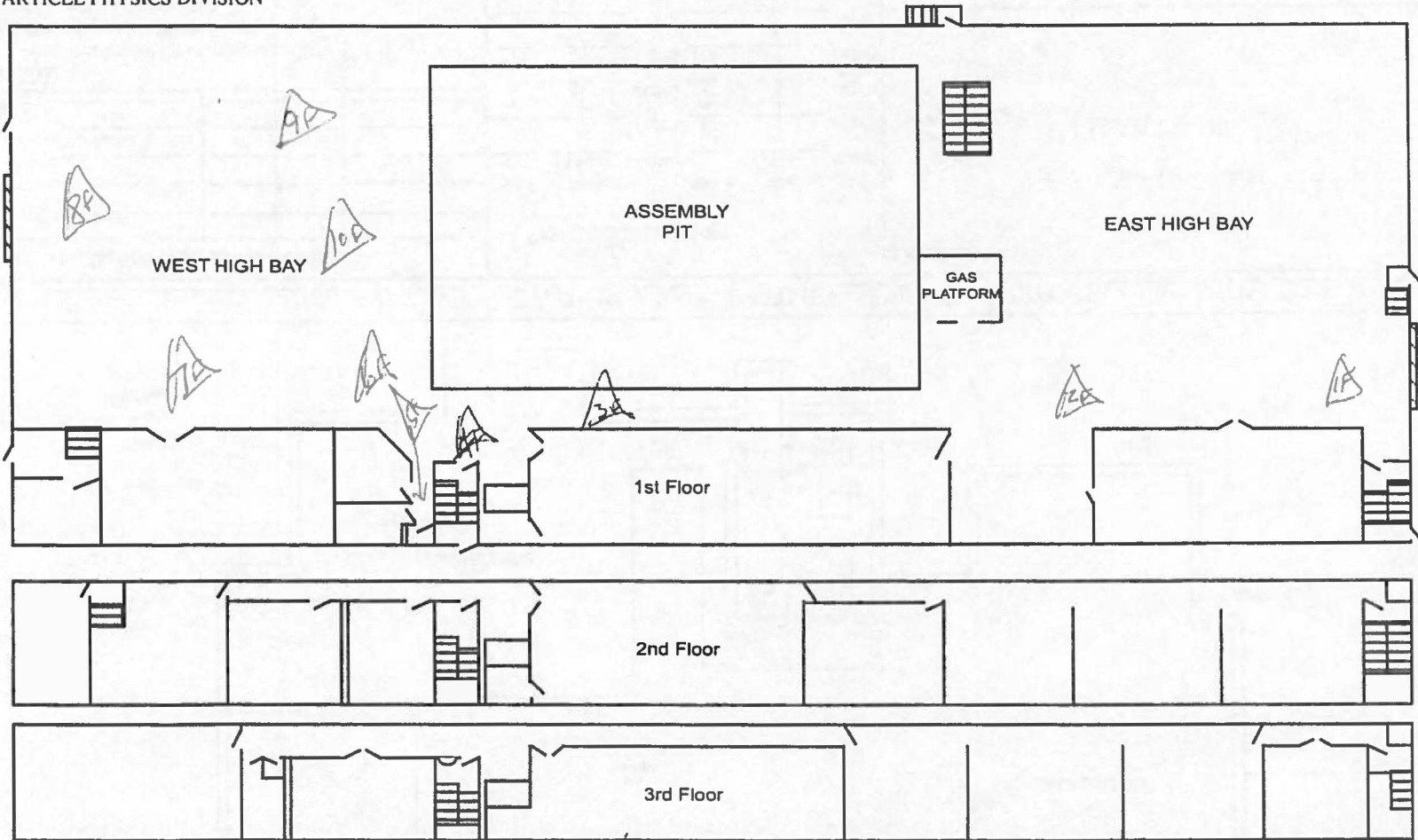
LOCATION: <u>CDF Collision Hall</u>		DATE: <u>8/27/2013</u>	TIME: <u>1330</u>	PURPOSE: <u>Spot check survey wipes</u>
<b>Radiation Instruments Used</b>		Bkgd <u>40</u> cpm		Comments: Wipes randomly taken on items destined to be recycled. All items located in the East and West area of Central Detector facility.  Wipes were counted on the spot, no activity found.
Inst Type: <u>Ludlum 177</u>	<u>Bicron</u>	Wipe #	Reading	
Inst No: <u>36</u>	<u>14</u>	<u>1</u>	<u>Bkgd</u> ccpm	
Batt/Source Chk: <u>Sat</u>	<u>Sat</u>	<u>2</u>	<u>Bkgd</u> ccpm	
Cal. Due Date: <u>9/2013</u>	<u>11/2013</u>	<u>3</u>	<u>Bkgd</u> ccpm	
Background: <u>40 cpm</u>	<u>1400 cpm</u>	<u>4</u>	<u>Bkgd</u> ccpm	
1.6 <b>LEGEND</b> Numbers appearing on map are mR/hr @ 1 ft readings unless denoted with symbols below * = mR/hr @ contact △ = Wipe    △F# = Floor wipe		<u>5</u>	<u>Bkgd</u> ccpm	
		<u>6</u>	<u>Bkgd</u> ccpm	
		<u>7</u>	<u>Bkgd</u> ccpm	
		<u>8</u>	<u>Bkgd</u> ccpm	
		Surveyed By: <u>Jose De La O</u>		Reviewed By: _____







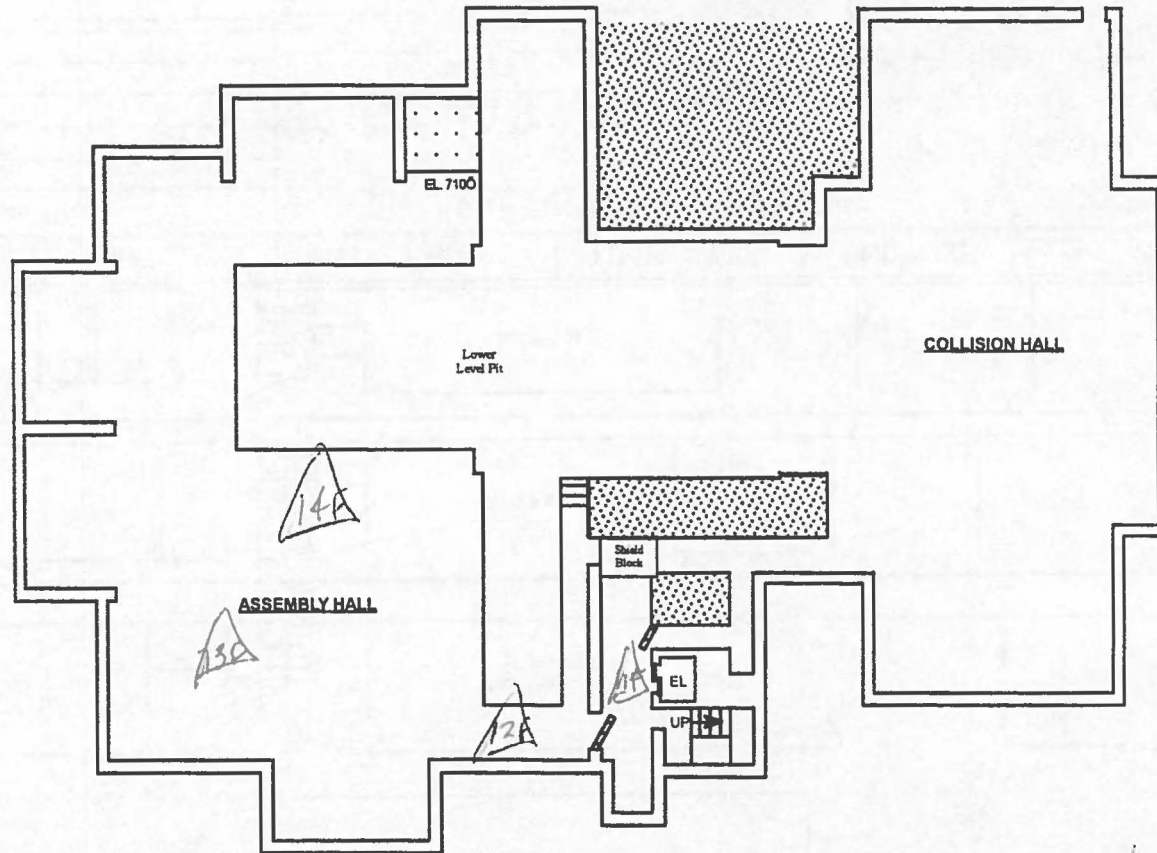
# CDF Assembly Hall



LOCATION: <u>CDF ASSEMBLY HALL</u>		DATE: <u>9/2/03</u>	TIME: <u>0930</u>	PURPOSE: <u>ALSO SNOOP OF FOOTPRINT AREAS</u>
<b>Radiation Instruments Used</b>		Bkgd <u>40</u> cpm		Comments: <u>ALL WIPEs TAKEN IN UPPER EAST AND WEST HIGH BAY AREAS AND ASSEMBLY HALL LOWER LEVEL. ALL WIPEs TAKEN RANDOMLY.</u>
Inst Type: <u>1714</u>	<u>N/A</u>	Wipe # <u>1</u>	Reading <u>BKG</u> ccpm	
Inst No: <u>25</u>	<u>N/A</u>	Wipe # <u>2</u>	Reading <u>↓</u> ccpm	
Bat/Source Chk: <u>507</u>	<u>N/A</u>	Wipe # <u>3</u>	Reading <u>↓</u> ccpm	
Cal. Due Date: <u>6/2014</u>	<u>N/A</u>	Wipe # <u>4</u>	Reading <u>↓</u> ccpm	
Background: <u>40</u>	<u>N/A</u>	Wipe # <u>5</u>	Reading <u>↓</u> ccpm	
<b>LEGEND</b> Numbers appearing on map are mR/hr @ 1 ft readings unless denoted with symbols below * = mR/hr @ contact △ = Wipe    △# = Floor wipe		Wipe # <u>6</u>	Reading <u>↓</u> ccpm	Surveyed By: <u>[Signature]</u> Reviewed By: _____
		Wipe # <u>13 &amp; 14</u>	Reading <u>BKG</u> ccpm	



# CDF Assembly Hall-Lower Level



LOCATION: <u>CDF Lower Level Pit</u>		DATE: <u>9/12/2013</u>		TIME: <u>0930</u>		PURPOSE: <u>SWIPE Survey</u>			
<b>Radiation Instruments Used</b>				Bkgd <u>40</u> cpm		Comments:  <u>ALL WIRES TAKEN ON THE FLOOR (RANDOMLY)</u>			
Inst Type:	<u>117-A</u>			Wipe #	Reading			Wipe #	Reading
Inst No:	<u>85</u>	<u>N/A</u>	<u>N/A</u>	<u>1</u>	<u>BKG</u> ccpm			<u>7</u>	<u>BKG</u> ccpm
Batt/Source Chk:	<u>SAT</u>			<u>2</u>	<u> </u> ccpm			<u>8</u>	<u> </u> ccpm
Cal. Due Date:	<u>6/2014</u>			<u>3</u>	<u> </u> ccpm			<u>9</u>	<u> </u> ccpm
Background:	<u>40</u>			<u>4</u>	<u> </u> ccpm			<u>10</u>	<u> </u> ccpm
<b>LEGEND</b>				<u>5</u>	<u> </u> ccpm	<u>11</u>	<u> </u> ccpm		
Numbers appearing on map are mR/hr @ 1 ft readings unless denoted with symbols below				<u>6</u>	<u>↓</u> ccpm	<u>12</u>	<u>↓</u> ccpm		
* = mR/hr @ contact				<u>13 &amp; 14 → BKG</u>					
△ = Wipe    △# = Floor wipe				Surveyed By: <u>[Signature]</u>		Reviewed By: _____			



# Particle Physics Div. Wipe Report

Friday, September 20, 2013

Location: *CDF Footprint Areas*

Taken By: *J. DeLaO*

Date: *9/12/13*

Counted By: *MF*

CC: *DeLaO*

Batch ID: Wipes - PPD - 201309201019

Count Time: 1.0 min.

Count Mode: Simultaneous

Operating Volts: 1440

Count Date: 9/20/2013

Daily Bkgd Count Time: 10 min.

Geometry: Swipe/Smear

Plateau Set: 20

FNAL Alpha Eff: 11.43

Alpha Bkgd Rate:  $0.10 \pm 0.10$  CPM

Alpha Count Ld = 3.82 CPM

Device: S5-XLB

FNAL Beta Eff: 15.43

Beta Bkgd Rate:  $2.00 \pm 0.45$  CPM

Beta-Gamma Count Ld = 7.62 CPM

Beta-Gamma Ld = 49.38 DPM

Wipe #	Carrier #	Alpha Gross CPM	Beta-Gamma Gross CPM	Alpha Net CPM	Beta-Gamma Net CPM	Alpha Net DPM	Beta-Gamma Net DPM	Alpha Net nCi	Beta-Gamma Net nCi	Flags
1	3	0.0	4.0	0.0	2.0	0.0	13.0	0.00	0.01	
2	14	0.0	3.0	0.0	1.0	0.0	6.5	0.00	0.00	
3	90	0.0	3.0	0.0	1.0	0.0	6.5	0.00	0.00	
4	104	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	
5	74	1.0	3.0	0.9	1.0	7.9	6.5	0.00	0.00	
6	61	0.0	1.0	0.0	0.0	0.0	0.0	0.00	0.00	
7	88	0.0	1.0	0.0	0.0	0.0	0.0	0.00	0.00	
8	115	0.0	3.0	0.0	1.0	0.0	6.5	0.00	0.00	
9	117	0.0	1.0	0.0	0.0	0.0	0.0	0.00	0.00	
10	71	0.0	2.0	0.0	0.0	0.0	0.0	0.00	0.00	
11	118	0.0	1.0	0.0	0.0	0.0	0.0	0.00	0.00	
12	105	1.0	5.0	0.9	3.0	7.9	19.4	0.00	0.01	
13	65	0.0	3.0	0.0	1.0	0.0	6.5	0.00	0.00	
14	93	0.0	3.0	0.0	1.0	0.0	6.5	0.00	0.00	

Reviewed by:

Rev. 1/13/10 skb

C:\Users\RAF\AD-1\AppData\Local\Temp\Sample Report - PPD (81A9059E-62)

Batch Key #: 3,057 Group Plate: B

Printed: 9/20/2013 11:19:17AM

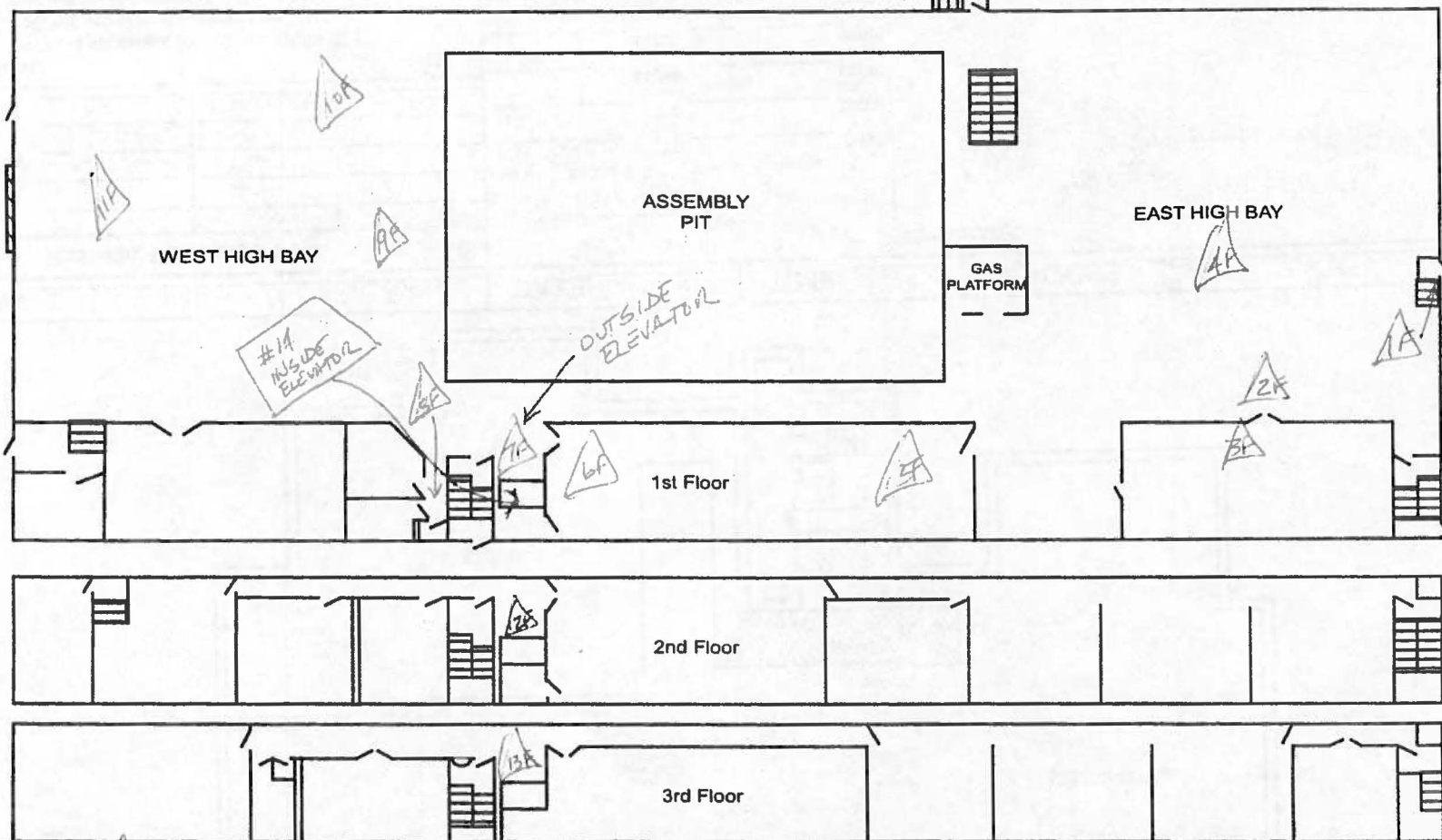
Page 1 of 1







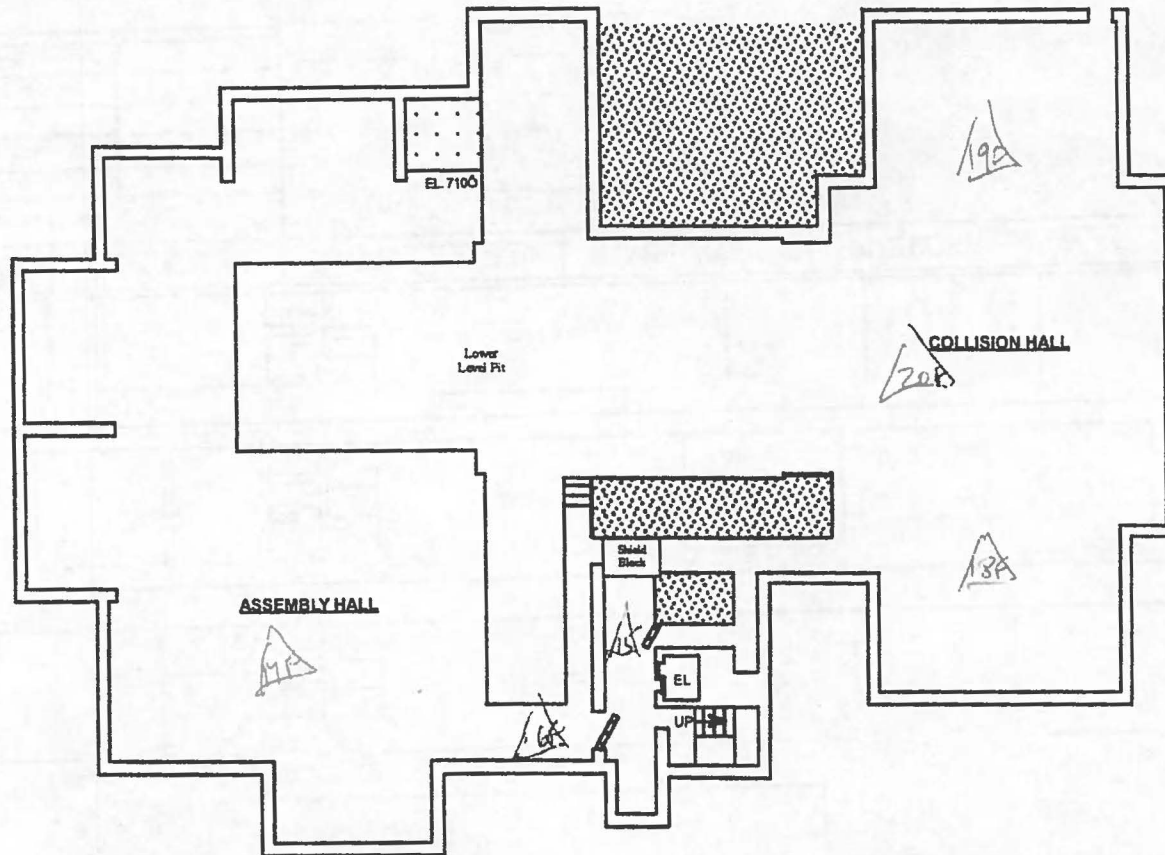
# CDF Assembly Hall



LOCATION: <u>CDF Assembly Hall</u>			DATE: <u>9/24/13</u>		TIME: <u>0940</u>		PURPOSE: <u>SWOOL Survey</u>				
<b>Radiation Instruments Used</b>			Bkgd <u>40</u> cpm				Comments: <u>FOOTPRINT AREAS WIPE SURVEY OF GENERAL AREAS.</u> <u>ALL WIPES RANDOMLY TAKEN.</u>				
Inst Type:	<u>177-4</u>	<u>50cpm</u>	Wipe #	Reading	ccpm	Wipe #				Reading	ccpm
Inst No:	<u>55</u>	<u>42</u>	<u>1</u>	<u>BKG</u>	<u>ccpm</u>	<u>7</u>				<u>BKG</u>	<u>ccpm</u>
Bat/Source Chk:	<u>SAT</u>	<u>SAT</u>	<u>2</u>	<u>ccpm</u>	<u>ccpm</u>	<u>8</u>				<u>ccpm</u>	<u>ccpm</u>
Cal. Due Date:	<u>6/21/7</u>	<u>10/20/4</u>	<u>3</u>	<u>ccpm</u>	<u>ccpm</u>	<u>9</u>				<u>ccpm</u>	<u>ccpm</u>
Background:	<u>40</u>	<u>1600cpm</u>	<u>4</u>	<u>ccpm</u>	<u>ccpm</u>	<u>10</u>				<u>ccpm</u>	<u>ccpm</u>
<b>LEGEND</b> Numbers appearing on map are mR/hr @ 1 ft readings unless denoted with symbols below * = mR/hr @ contact ▲ = Wipe    ▲# = Floor wipe			<u>5</u>	<u>ccpm</u>	<u>ccpm</u>	<u>11</u>	<u>ccpm</u>	<u>ccpm</u>			
			<u>6</u>	<u>ccpm</u>	<u>ccpm</u>	<u>12</u>	<u>ccpm</u>	<u>ccpm</u>			
			<u>13-20 BKG</u>		Surveyed By: <u>[Signature]</u> Reviewed By: _____						



# CDF Assembly Hall-Lower Level



LOCATION: <u>CDF Assembly Lower Level</u>		DATE: <u>9/20/2013</u>		TIME: <u>0940</u>		PURPOSE: <u>SWEEP SURVEY</u>			
<b>Radiation Instruments Used</b>				Bkgd <u>40</u> cpm		Comments: <u>WIPES TAKEN IN LOWER LEVEL PIT AND COLLISION HALL.</u>			
Inst Type:	<u>17-A</u>	<u>14000</u>		Wipe #	Reading			Wipe #	Reading
Inst No:	<u>35</u>	<u>44</u>		<u>15</u>	<u>BK</u>				ccpm
Batt/Source Chk:	<u>SAT</u>	<u>SAT</u>		<u>16</u>					ccpm
Cal. Due Date:	<u>6/2017</u>	<u>10/2014</u>		<u>17</u>					ccpm
Background:	<u>140</u>	<u>11000 cpm</u>		<u>18</u>					ccpm
<b>LEGEND</b>				<u>19</u>		<u>ccpm</u>			
Numbers appearing on map are mR/hr @ 1 ft readings unless denoted with symbols below				<u>20</u>		<u>ccpm</u>			
* = mR/hr @ contact									
△ = Wipe    △ <sub>FH</sub> = Floor wipe									
Surveyed By: <u>[Signature]</u>						Reviewed By: _____			



# Particle Physics Div. Wipe Report

Friday, September 20, 2013

<b>Location:</b> CDF Footprint Areas	<b>Taken By:</b> J. De La O	<b>Date:</b> 9/20/13	<b>Counted By:</b> MF	<b>CC:</b> DeLa O
<b>Batch ID:</b> Wipes - PPD - 201309201152	<b>Count Time:</b> 1.0 min.	<b>Count Mode:</b> Simultaneous	<b>Operating Volts:</b> 1440	
<b>Count Date:</b> 9/20/2013	<b>Daily Bkgd Count Time:</b> 10 min.	<b>Geometry:</b> Swipe/Smear	<b>Plateau Set:</b> 20	
<b>FNAL Alpha Eff:</b> 11.43	<b>Alpha Bkgd Rate:</b> 0.10 ± 0.10 CPM	<b>Alpha Count Ld =</b> 3.82 CPM	<b>Device:</b> S5-XLB	
<b>FNAL Beta Eff:</b> 15.43	<b>Beta Bkgd Rate:</b> 2.00 ± 0.45 CPM	<b>Beta-Gamma Count Ld =</b> 7.62 CPM	<b>Beta-Gamma Ld =</b> 49.38 DPM	

Wipe #	Carrier #	Alpha Gross CPM	Beta-Gamma Gross CPM	Alpha Net CPM	Beta-Gamma Net CPM	Alpha Net DPM	Beta-Gamma Net DPM	Alpha Net nCi	Beta-Gamma Net nCi	Flags
1	3	1.0	3.0	0.9	1.0	7.9	6.5	0.00	0.00	
2	117	1.0	0.0	0.9	0.0	7.9	0.0	0.00	0.00	
3	115	0.0	3.0	0.0	1.0	0.0	6.5	0.00	0.00	
4	96	0.0	2.0	0.0	0.0	0.0	0.0	0.00	0.00	
5	107	0.0	2.0	0.0	0.0	0.0	0.0	0.00	0.00	
6	97	0.0	2.0	0.0	0.0	0.0	0.0	0.00	0.00	
7	76	0.0	2.0	0.0	0.0	0.0	0.0	0.00	0.00	
8	63	0.0	3.0	0.0	1.0	0.0	6.5	0.00	0.00	
9	68	1.0	2.0	0.9	0.0	7.9	0.0	0.00	0.00	
10	120	0.0	3.0	0.0	1.0	0.0	6.5	0.00	0.00	
11	58	0.0	3.0	0.0	1.0	0.0	6.5	0.00	0.00	
12	109	0.0	2.0	0.0	0.0	0.0	0.0	0.00	0.00	
13	44	0.0	5.0	0.0	3.0	0.0	19.4	0.00	0.01	
14	83	0.0	1.0	0.0	0.0	0.0	0.0	0.00	0.00	
15	101	0.0	5.0	0.0	3.0	0.0	19.4	0.00	0.01	
16	27	0.0	4.0	0.0	2.0	0.0	13.0	0.00	0.01	
17	113	1.0	0.0	0.9	0.0	7.9	0.0	0.00	0.00	
18	72	0.0	2.0	0.0	0.0	0.0	0.0	0.00	0.00	
19	90	0.0	6.0	0.0	4.0	0.0	25.9	0.00	0.01	
20	14	0.0	4.0	0.0	2.0	0.0	13.0	0.00	0.01	

Reviewed by: \_\_\_\_\_  
Rev. 1/13/10 skb

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Batch Key #: 3,058 Group Plate: A  
Printed: 9/20/2013 12:19:01PM Page 1 of 1







