



November 9, 2007

SRS-REG-2007-00035

Mr. John M. McCain Jr., Engineer
Bureau of Land and Waste Management
South Carolina Department of Health and
Environmental Control
2600 Bull Street
Columbia, South Carolina 29201-1208

Vault 4 Information (U)

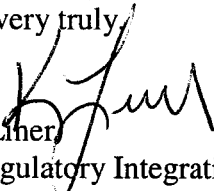
Attached is the information per your request on November 8, 2007.

Attachment 1 Vault 4 Exterior Engineering Evaluations

Attachment 2 Vault 4 Exterior Radiological Surveys

If you have any questions, please contact Keith Liner at (803) 208-6466.

Yours very truly,


Keith Liner
Site Regulatory Integration and Planning
Washington Savannah River Company, LLC

Attachment 1

Vault 4 Exterior Engineering Evaluations



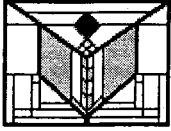
Jason Adams/BSRI/Srs
11/01/2007 11:14 AM

To Sean Heath/WSRC/Srs@srs
cc Scot Beck/WSRC/Srs@srs, Phillip Norris/WSRC/Srs@srs,
Elester Patten/WSRC/Srs@srs, Kevin
Baker/WSRC/Srs@srs, David Sherburne/WSRC/Srs@srs,
bcc

Subject REVISED Saltstone Engineering Response to Vault 4 Cell E
Wall Wet Spots on 10/26/07 and 10/29/07 (U)

Three (3) new wet spots were identified on October 26, 2007 and six (6) new wet spots were identified on October 29, 2007 above the Xypex coating on the wall of Vault 4 Cell E. These spots were 3 to 6 inches in diameter located between 5 to 6 feet high. Grout level in the cell was approximately 6 feet. The wall is coated with Xypex up to a height of 5 feet. Because the leachate layer above the grout has traveled through the cell along the wall to make its way to the leachate collection system, these wet spots were an expected event. Engineering recommends continued operation of the leachate pump whenever the facility permits to ensure that progress is being made to reduce leachate level in the cell below Xypex height along the cell wall. This evaluation will allow exiting SW24.4-AOP-13 and continuing grout production in cell E.

Jason Adams
Bechtel Savannah River Inc.
Saltstone Engineering
Building 704-14Z Rm 8
Aiken, SC 29808
ph (803)208-6765
Pager 19890



Scot Beck/WSRC/Srs
07/26/2007 05:26 PM

To Sean Heath/WSRC/Srs@srs
cc Phillip Norris/WSRC/Srs@srs
bcc

Subject Engineering Evaluation for Wet Spots on Cells J and L
Discovered on 7/26/2007

Sean,

Engineering has evaluated the wet spots on both Cell J and L discovered this morning .

Cell J:

The wet spots discovered on Cell J this morning are not new and are consistent with previous dampness discovered near the leachate line penetration. The one exception is the southern most damp area located at a location where the re-bar was cut. Previous pictures of Cell J in April did not include this location, because the gravel has not been lowered to cut the re-bar. The location of the southern most damp area is consistent with the primary leak site being the leachate line and the damp areas migrating both north and south. Cell J has been holding approximately 2 feet of grout/leachate since the beginning of the January. The NCR on Cell J prevents the pumping of leachate, so no action is necessary until the leachate line in J is properly secured in grout and all the leachate is removed . Once the leachate is removed, the leachate line penetration through the concrete wall can be properly re-sealed and Xypex applied.

Cell L:

The wet spots discovered are consistent with the transfer of water from Cell K into Cell L . RadCon's survey of these spots has not revealed issues. Leachate should be pumped from L as soon as reasonably possible. The wet spots on L should not hinder the transfer of Cell K condensate/water to Cell L. Wet spots located below the 5 ft Xypex coating should be monitored and left alone (allow Xypex time to crystallize). Wet spot located above the Xypex coating should be monitored and addressed by pumping leachate from Cell L as soon as reasonably possible.

Scot Beck



Phillip Norris /WSRC/Srs
05/18/2007 06:25 AM

To Sean Heath/WSRC/Srs@srs
cc Joel Cantrell/WSRC/Srs@Srs, Earl
Mansfield/WSRC/Srs@Srs, Scot Beck/WSRC/Srs@Srs
bcc
Subject Fw: Cell J wetspots

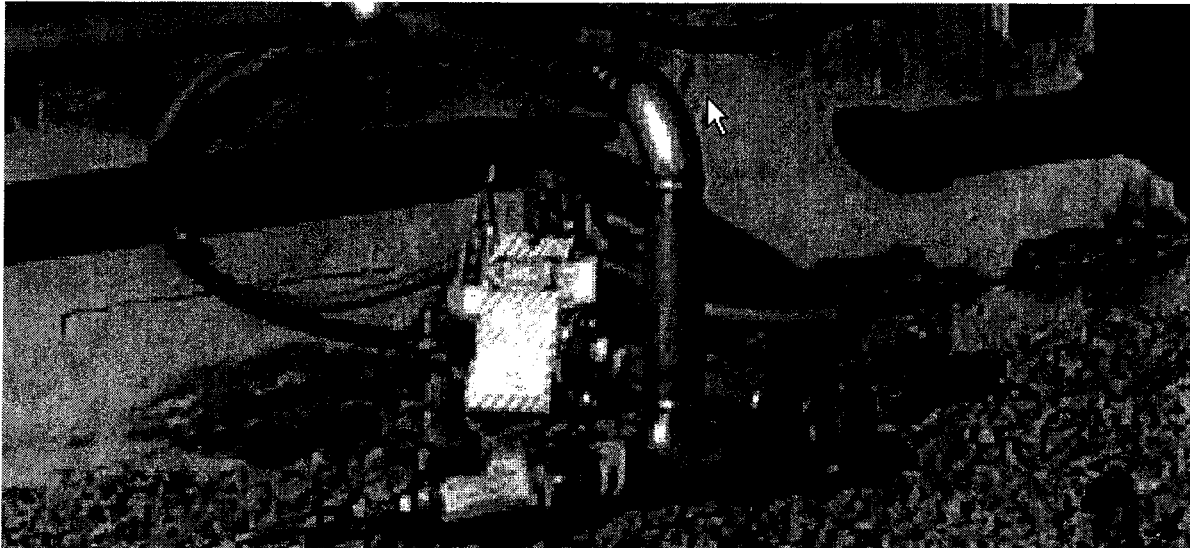
Sean - Below is the evaluation of the Cell J Wetspot. This email will serve as the evaluation to close the open AOP 13.

Phillip

----- Forwarded by Phillip Norris/WSRC/Srs on 05/18/2007 06:24 AM -----

Matthew Maryak /WSRC/Srs
05/17/2007 04:58 PM
To Phillip Norris/WSRC/Srs@Srs
cc
Subject Cell J wetspots

In preparation for Cell J Xypex coating Radcon identified two wetspots at through wall penetrations. The penetration for the leachate return line and the northern manual drain port are weeping leachate. The leachate collection line in this cell is presently addressed by an NCR and can not be operated until the grout level is above the collection system. The locations identified by Radcon are not new and have been visible for some time. We must proceed with the Xypex coating to abate the weeping at the penetrations. These two areas will be addressed by the new process identified in C-DCF-Z-103. Patch'N Plug with Xycrylic will be placed around all through wall penetrations to seal the area. This material is designed to be used under wet conditions.



Matthew Maryak
208-0961
Pager 12768

Matthew Maryak /WSRC/Srs
04/23/2007 04:06 PM

To Joel Cantrell/WSRC/Srs@Srs
cc Scot Beck/WSRC/Srs@Srs, David
Sherburne/WSRC/Srs@Srs, Phillip Norris/WSRC/Srs@Srs,
Sean Heath/WSRC/Srs@srs

bcc

Subject AOP release

We have reviewed the latest wet spots and find that the previous justification given in letter LWO-WSE-2007-00069 is still valid. You may exit the AOP.

Matthew Maryak
208-0961
Pager 12768



LWO-WSE-2007-00069
Page 1 of 2

April 12, 2007

To: J.R. Cantrell, 704-Z

Tracking #: 10080
Keywords: Vault 4, Cell E

From: Matt E. Maryak, 766-H
Phillip W. Norris, 704-Z *PNW*

Disposal Authority: DOE 14-6.a

Retention: Until Vault 4 is removed from service.

Evaluation of Vault 4 Cell "E" Wet Spots

Summary

Wet spots have been identified through the period of March 12th through April 10th on Vault 4 Cell E. The March 12 and 13th locations are relatively minor and have alternated between dry and moist as the Xypex tries to stop the moisture. Six locations have shown signs of transferable contamination. Four are at the leachate line penetration area. The wet spot at the leachate return line penetration is the most significant. It is approximately 2 feet above the mud mat. This wet spot has migrated and has three distinct locations surrounding the penetration. The penetration evidently is weeping behind the Xypex coating. These new areas are in the vicinity as the wet spots discovered on March 12th and 13th (ref. LWO-WSE-2007-00049). There are several other very small wet spots that have appeared in the last few weeks. Some have just appeared recently and others have appeared and dried up. Once wetted, the crystalline growth of Xypex takes approximately 28 days. The areas on the wall are being monitored and the Xypex coating appears to be working as designed. Engineering recommends continuing inspection of the locations periodically and documenting any changes in appearance into the shift logs. Engineering also recommends that leachate removal continues when allowed. This correspondence satisfies the exit requirements of AOP 13.

Discussion

Additional wet spots have developed from March 12th through April 10th on Vault 4 Cell E. The March 12th and 13th locations are at the central portion of the cell wall. These spots have shown signs of transferable contamination. The wet spot at the leachate return line penetration is the most significant. It is approximately 2 feet above the mud mat. This wet spot has migrated and has three distinct locations surrounding the penetration, approximately 2 feet above the mud mat. There is transferable contamination at this area. When the Xypex coating is wetted, crystalline growth is initiated which should mitigate the moisture. The Xypex coating appears to be working as designed at the wet spots identified during this period based on indications that drying is occurring. The coating is expected to also work as

designed on the new spots identified to date. The sole exception may be the leak at the leachate line through wall penetration. Engineering will continue to monitor the wet spots and evaluate the adequacy of the Xypex coating as the leachate is pumped down.

Vault 4 Cell "E" currently has an NCR on the internal leachate piping due to deflection from its designed position. During the process run on 3/8/07, the final length of exposed leachate piping was covered with grout at approximately 30". Cell "E" currently has greater than 36" of grout/leachate. The NCR conditional release allows for the addition of grout or pumping of the leachate to/from the cell providing the drain line level indication remains above 25". The 25" requirement ensures the leachate piping remains full or nearly full of liquid to be certain the line is not subjected to excessive buoyant forces. Only after the leachate line is submerged below 12" of semi-solid group should the NCR be resolved and the leachate system be returned to normal operations in Cell "E".

The facility has begun processing grout using the leachate pumped from Cell "E". This will provide additional ballast to ensure that the Cell "E" leachate pipe is secured and will allow the facility to remove the hydrostatic head from the Cell "E" wet spots.

Conclusion

Additional wet spots have been discovered on Vault 4 Cell "E". The Xypex coating appears to be working as designed. Inspection of the wet spots will continue and any changes in appearance will be documented in the shift log. Engineering will continue to evaluate the adequacy of the Xypex coating. The processing of grout using leachate pumped from Cell "E" will also continue when allowed to aid in providing ballast to secure the leachate piping and to remove the hydrostatic head from the Cell "E" wet spots.

DISTRIBUTION

S. D. Burke, 704-S
D. C. Sherburne, 704-S
S. D. Heath, 704-Z
M. E. Maryak, 766-H
Shift Manager, 210-Z
L. A. Parker, 704-S/File
P. Lewis, 704-Z/file



March 15, 2007

LWO-WSE-2007-00049
RSM Tracking: 10080

TO: J. R. CANTRELL, 704-Z

FROM: S. B. BECK, 704-Z
M. E. MARYAK, 766-H
M. W. LOIBL, 704-Z

SUBJECT: Interim Disposition of Vault 4 Cell E Wet Spots

A wet spot on Vault 4, Cell E appeared Monday morning March 12. The location was immediately reported by Radcon upon discovery. Engineering reviewed the appearance of the location against historical photos of the Xypex application. It was determined that a crack was located behind the baseplate at the location of the wet spot. The Xypex coating was not placed behind the baseplate. The baseplates were sealed with Sikaflex 1A. Engineering believes that the moisture is coming from behind the baseplate and dampening the surface of the Xypex concentrate. The wet area has been monitored twice daily since discovery with no noticeable change in appearance. A second, smaller wet spot was discovered late Tuesday (March 13) on Cell E at a through-wall penetration for a drain line. The spot is very minor; ½ inch crescent shape three inches long. The moisture appears to be coming through the penetration seal material. The Xypex coating on Vault 4 Cell E appears to be intact and is performing as designed. Each location should be given time to allow crystalline growth which should mitigate the moisture.

As of this date, both locations have been monitored during the week and there has been no noticeable change in appearance. The present liquid level in Vault 4 Cell E is approximately 42 inches. The bottom edge of the baseplate is 17 inches above the foundation and the drain line is at the base of the wall.

Vault 4 Cell E currently has an NCR on the internal leachate piping due to deflection from its designed position. During the process run on 3/8/07, the final length of exposed leachate piping was covered with grout at approximately 30". Cell E currently has greater than 36" of grout/leachate level. The NCR disposition requires grout/leachate to be 12" above the highest piping level or 42" of semi-solid grout material must be present before leachate can be pumped. The process runs planned for later this week

and/or early next week will provide this additional ballast to ensure that the Cell E leachate piping is secured and will allow the facility to remove the hydrostatic head from the Cell E wet spot.

Engineering recommends that operations proceed with production of Saltstone to secure the leachate piping as described above. Once the conditions of the NCR are met, then remove the leachate via pumping back to the Salt Feed Tank. Continue to monitor the two wet spots. If the wet spots appear to be growing in size, then notify engineering so that additional evaluation can be initiated. If either, or both, areas maintain their present size, reduce in size and/or dry out completely, then document their condition in the shift log and monitor normally.

Mwl/mwl

C: S. D. Burke, 704-S
D. C. Sherburne, 704-S
M. W. Loibl, 704-Z
Linda Parker, 704-S/File
Pattie Lewis, 704-Z/File

Attachment 2

Vault 4 Exterior Radiological Surveys

VSDS Standard Map RSLs
Survey DWPF-M-20071026-4

General Information

Title: Saltstone survey of new leak spots on Cell E	Lead Inspector: Hicks, Robert (Robby) H
Survey Date/Time: 10/26/2007 10:00	Work Order/Task #: N/A
Survey Type: Verification	KCN: w8955
Counted By: Facility Inspector	
RWP #: N/A	
Facility: ZZZ	
Status: Approved by: Hunter, Carol M, 10/29/2007	Ready For Review by: Hicks, Robert (Robby) H, 10/26/2007

Dose Rate (DR) Object Prefixes/Suffixes

<u>Dose Rates with Prefixes:</u> E = Extrem GA = GA WB S = Skin	<u>Dose Rates with No Prefixes:</u>	<u>Default Prefixes:</u> HS = Hot Spot	<u>Default Suffixes:</u> "n" = Neutron "b" = Beta "c" = Corrected
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Postings Legend

CA=Contamination Area

Instruments Used

#	Instrument Model	Instrument Serial #
1	12-110	CMC004187
2	12-Alpha	CMC006924
3	RO-20	CMC007957

VSDS Standard Map RSLs

Comments:

Performed direct probe, and 100cm² survey of new leak spots found on Cell E as requested by Operations.

Max. Dose Rate: ND-GA

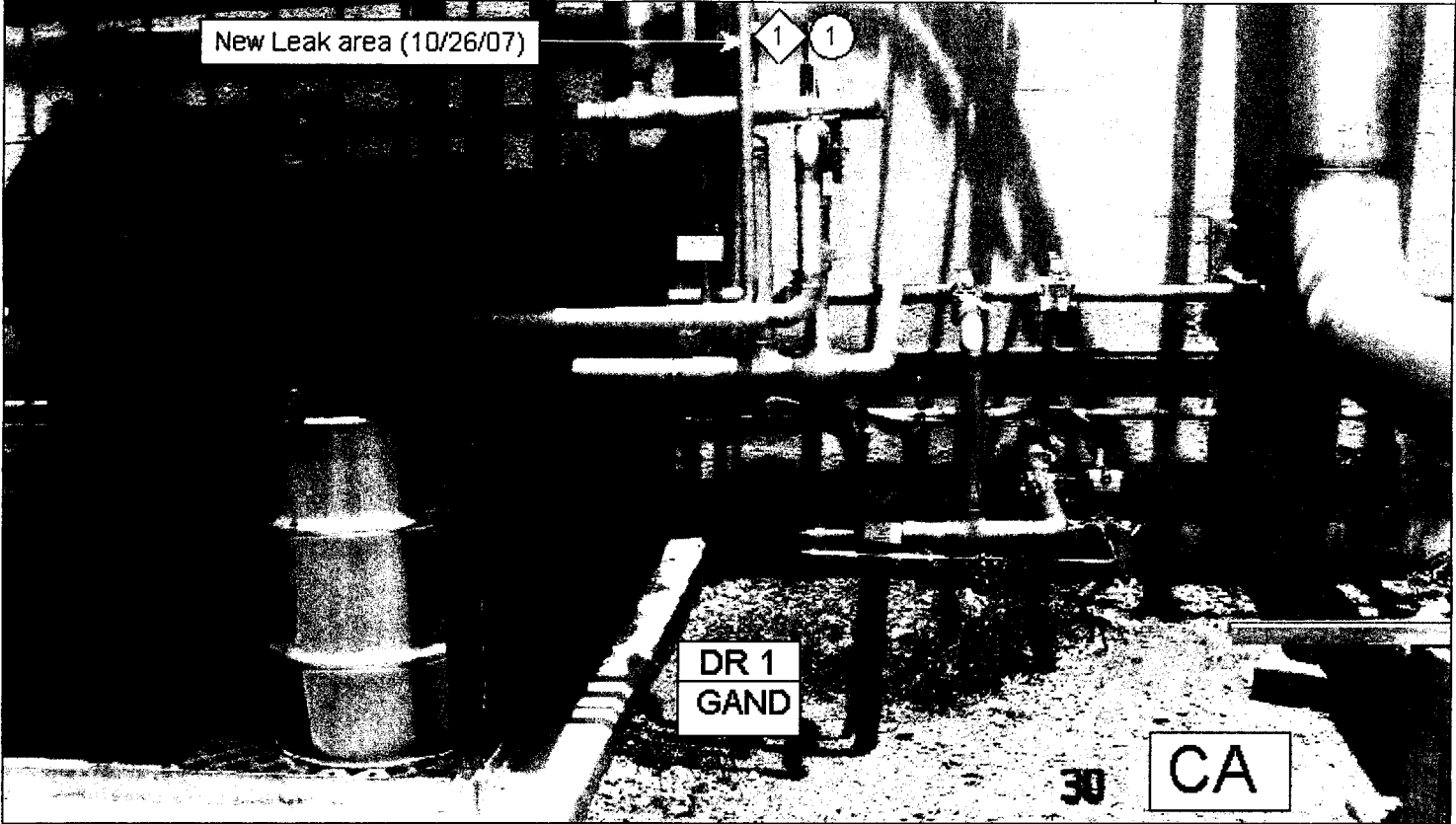
Max. Direct Probe: ND alpha, 1,000,000 dpm beta-gamma/ 100cm²(T)

Max. Transferable contamination: <200 dpm alpha, 40,000 dpm beta-gamma/ 100cm²

RCO and Shift Operations management was notified of survey results.

VSDS Standard Map RSLs

Map: 1 WEST LEACHATE PUMP-CELL E Survey #: DWPF-M-20071026-4 Date/Time: 10/26/2007 10:00



Comments:

Summary of Highest Readings (All available values may not be listed)	
Smears	Air Samples & Wipes
1) <200 DPM/100 cm ² α 1) 8,000 DPM/100 cm ² β/γ	

Type: Verification

Symbol Legend (for example only) RWP #: N/A

(15) Smear (16) Large Area (15) Air Sample	(15) Direct Probe DR Dose Rate
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Unless otherwise noted, dose rates in mrem/hr.

Lead Inspector: Hicks, Robert (Robby) H

Location Code: Z451004

Location Description: WEST LEACHATE PUMP-CELL E

Status: Approved by: Hunter, Carol M, 10/29/2007

Bldg/Area Name: VAULT 4

VSDS Standard Map RSLs

Data Point Details

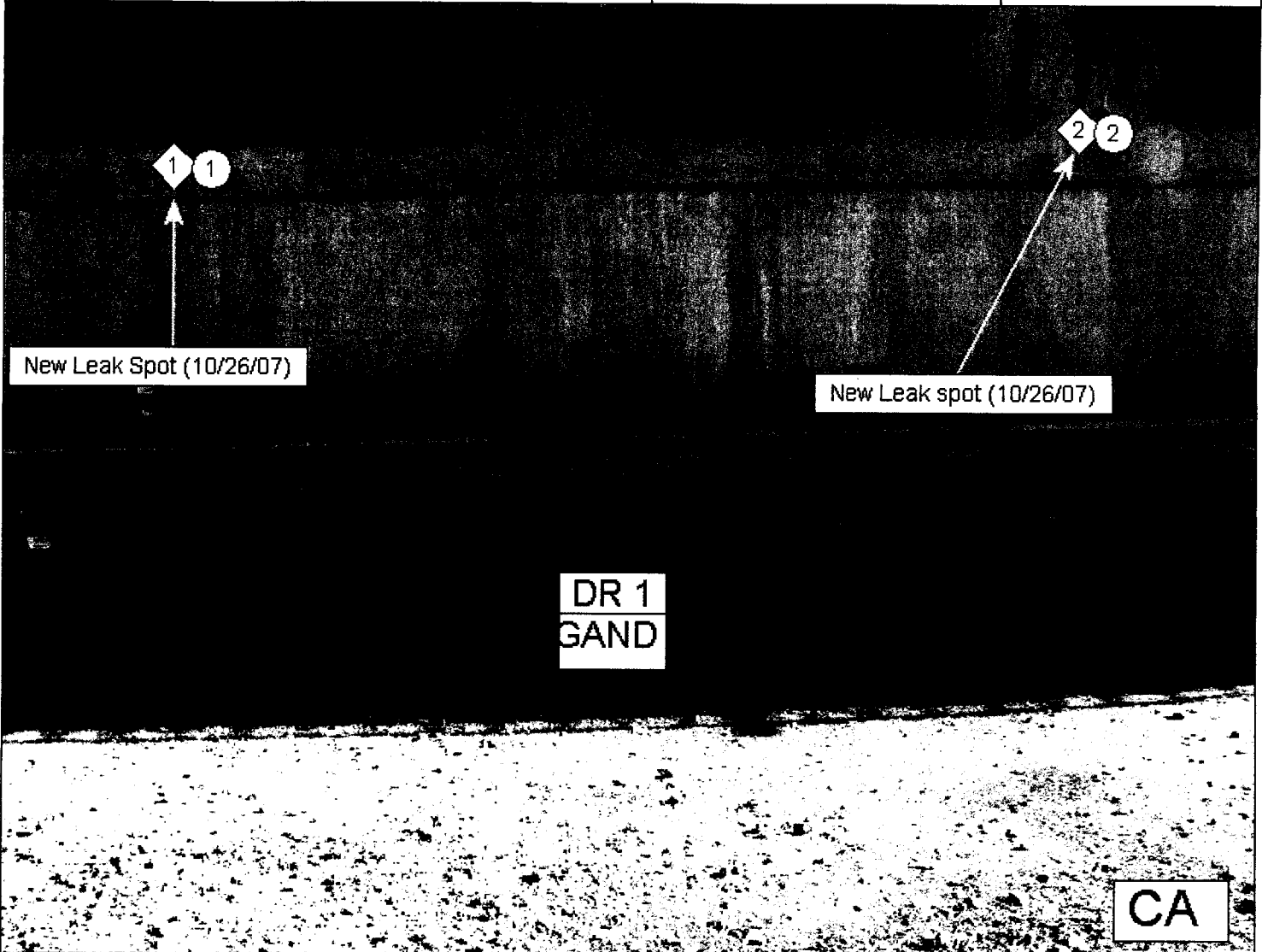
Survey #: DWPF-M-20071026-4






Map: 1 - ZZZ\VAULT 4\WEST LEACHATE PUMP-CELL E

#	Type	Inst.	Value	Units	Position	Notes
1	DR γ	N/A	GA ND	mrem/hr		
1	Smear	N/A	α <200	DPM/100 cm ²	South of Leachate pump above piping 6' high	
		N/A	β/γ 8,000	DPM/100 cm ²		
1	Direct	N/A	α ND	DPM/100 cm ² (T)	South of leachate pump above piping 6' above groun	
		N/A	β/γ 180,000	DPM/100 cm ² (T)		
	Text		New Leak area (10/26/07)		South of Pump above piping around 6' above ground	
	Posting		CA			

VSDS Standard Map RSLs

Map: 2 CELL E-006 Survey #: DWPF-M-20071026-4 Date/Time: 10/26/2007 10:00



Comments:	Summary of Highest Readings (All available values may not be listed)	
	Smears	Air Samples & Wipes
	2) <200 DPM/100 cm ² α 2) 40,000 DPM/100 cm ² β/γ	
Type: Verification Symbol Legend (for example only) RWP #: N/A <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  Smear  Large Area  Air Sample </div> <div style="text-align: center;">  Direct Probe  Dose Rate </div> </div> Unless otherwise noted, dose rates in mrem/hr.	Status: Approved by: Hunter, Carol M, 10/29/2007 Bldg/Area Name: VAULT 4	
Lead Inspector: Hicks, Robert (Robby) H Location Code: Z451004 Location Description: CELL E-006		

VSDS Standard Map RSLs

Data Point Details

Survey #: DWPF-M-20071026-4

Map: 2 - ZZZ\VAULT 4\CELL E-006

#	Type	Inst.	Value	Units	Position	Notes
1	DR γ	N/A	GA ND	mrem/hr		
1	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	South of leachate 6' above ground	
		N/A	$\beta/\gamma < 1000$	DPM/100 cm ²		
2	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	South of leachate 6' above ground	
		N/A	$\beta/\gamma 40,000$	DPM/100 cm ²		
1	Direct	N/A	α ND	DPM/100 cm ² (T)	South of leachate 6' above ground	
		N/A	$\beta/\gamma 10,000$	DPM/100 cm ² (T)		
2	Direct	N/A	α ND	DPM/100 cm ² (T)	South of leachate 6' above ground	
		N/A	$\beta/\gamma 1,000,000$	DPM/100 cm ² (T)		
	Text		New Leak Spot (10/26/07)		South of new ventilation piping 6' above ground	
	Text		New Leak spot (10/26/07)		South of new ventilation piping 6' above ground	
	Posting		CA			

VSDS Standard Map RSLs
Survey DWPF-M-20071029-10

General Information

Title: Saltstone survey of Vault 4 Cell E	Lead Inspector: Hicks, Robert (Robby) H
Survey Date/Time: 10/29/2007 08:00	Work Order/Task #: N/A
Survey Type: Verification	KCN: w8955
Counted By: Facility Inspector	
RWP #: N/A	
Facility: ZZZ	
Status: Approved by: Lyons, Lynne, 11/02/2007	Ready For Review by: Hicks, Robert (Robby) H, 11/02/2007

Dose Rate (DR) Object Prefixes/Suffixes

<u>Dose Rates with Prefixes:</u> E = Extrem S = Skin	<u>Dose Rates with No Prefixes:</u> W Body	<u>Default Prefixes:</u> HS = Hot Spot	<u>Default Suffixes:</u> "n" = Neutron "b" = Beta "c" = Corrected
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Postings Legend

There are no postings in this survey.

Instruments Used

#	Instrument Model	Instrument Serial #
1	12-110	CMC004187
2	12-Alpha	CMC006924
3	RO-20	CMC007957

VSDS Standard Map RSLs

Comments:

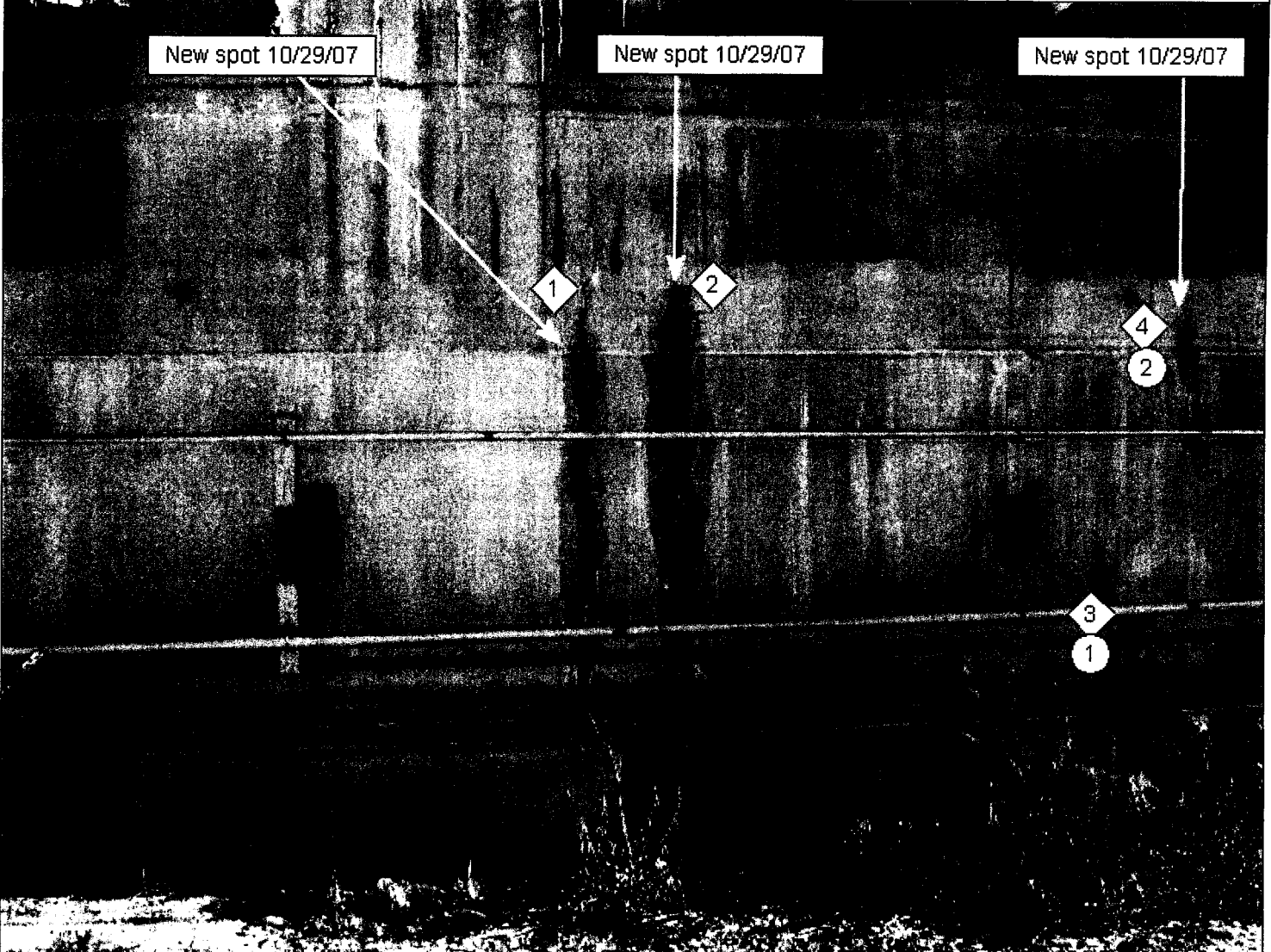
Performed direct probe and 100cm² survey of leaching area's on wall of Cell E.

Max. Direct Probe: ND-alpha, 2,000,000 dpm beta-gamma/100cm²(T)

Max. Transferable contamination: <200 dpm alpha, 180,000 dpm beta-gamma/ 100cm²

VSDS Standard Map RSLs

Map: 1 CELL E WALL-1 Survey #: DWPF-M-20071029-10 Date/Time: 10/29/2007 08:00



Comments:

Summary of Highest Readings
(All available values may not be listed)

Smears	Air Samples & Wipes
2) <200 DPM/100 cm ² α	
2) 40,000 DPM/100 cm ² β/γ	

Type: Verification

Symbol Legend (for example only) RWP #: N/A

Smear Direct Probe
 Large Area Dose Rate
 Air Sample Rate

Unless otherwise noted, dose rates in mrem/hr.

Lead Inspector: Hicks, Robert (Robby) H

Status: Approved by: Lyons, Lynne, 11/02/2007

Location Code: Z451004

Bldg/Area Name: VAULT 4

Location Description: CELL E WALL-1

VSDS Standard Map RSLs

Data Point Details

Survey #: DWPF-M-20071029-10

Map: 1 - ZZZ\VAULT 4\CELL E WALL-1

#	Type	Inst.	Value	Units	Position	Notes
1	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching area on wall	
		N/A	$\beta/\gamma 20,000$	DPM/100 cm ²		
2	Smear	N/A	$\alpha < 200$	DPM/100 cm ²		
		N/A	$\beta/\gamma 40,000$	DPM/100 cm ²		
1	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	$\beta/\gamma 2,000,000$	DPM/100 cm ² (T)		
2	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	$\beta/\gamma 1,800,000$	DPM/100 cm ² (T)		
3	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	$\beta/\gamma 1,400,000$	DPM/100 cm ² (T)		
4	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	$\beta/\gamma 1,000,000$	DPM/100 cm ² (T)		
	Text		New spot 10/29/07			
	Text		New spot 10/29/07			
	Text		New spot 10/29/07			

VSDS Standard Map RSLs

Map: 2 CELL E WALL-2	Survey #: DWPF-M-20071029-10	Date/Time: 10/29/2007 08:00
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Comments:

Summary of Highest Readings
(All available values may not be listed)

Smears	Air Samples & Wipes
2) <200 DPM/100 cm ² α	
1) 30,000 DPM/100 cm ² β/γ	

Type: Verification

Symbol Legend (for example only) RWP #: N/A

Smear	Direct Probe
Large Area	Dose Rate
Air Sample	

Unless otherwise noted, dose rates in mrem/hr.

Lead Inspector: Hicks, Robert (Robby) H

Location Code: Z451004

Location Description: CELL E WALL-2

Status: Approved by: Lyons, Lynne, 11/02/2007

Bldg/Area Name: VAULT 4

VSDS Standard Map RSLs

Data Point Details

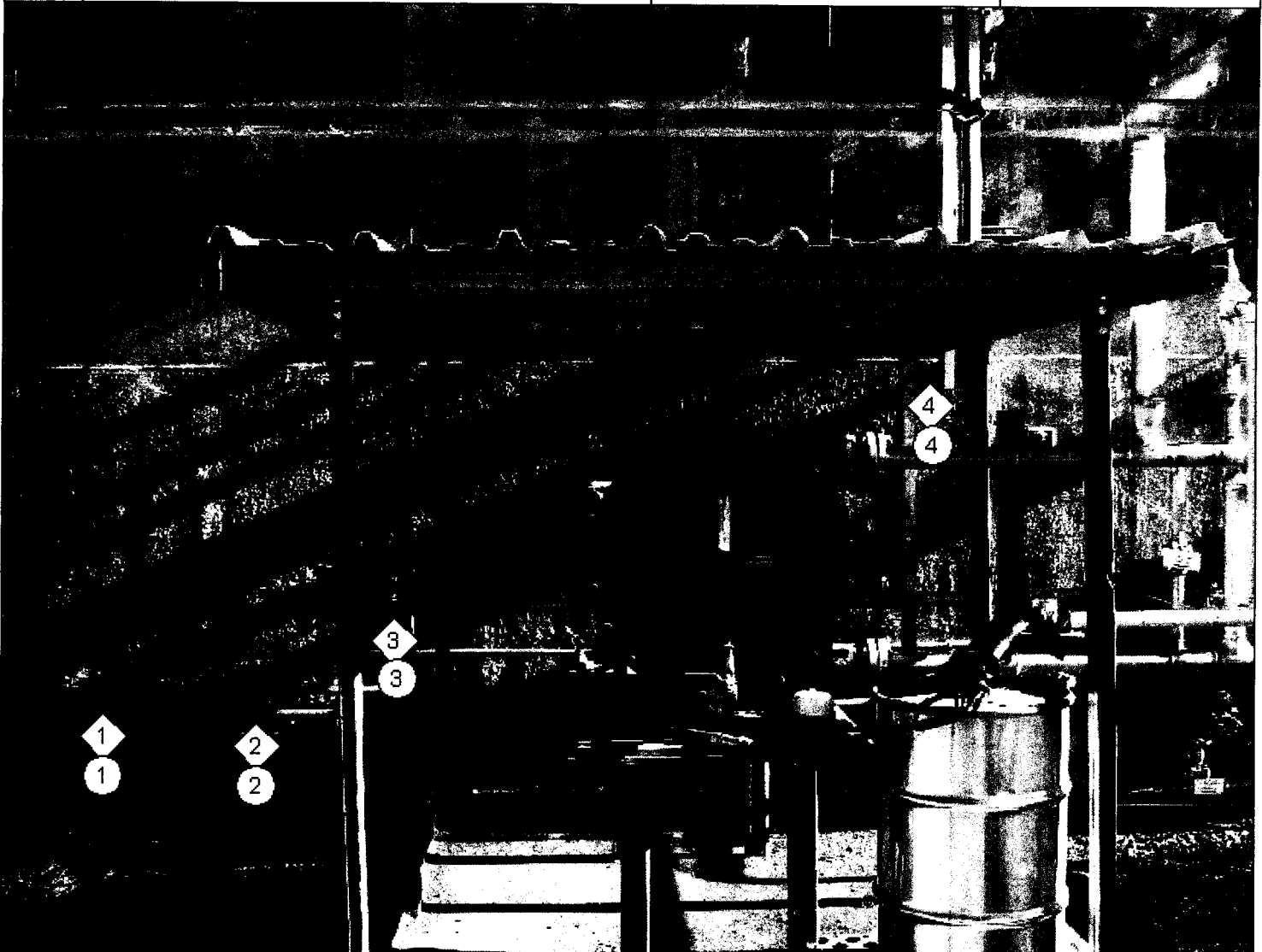
Survey #: DWPF-M-20071029-10

Map: 2 - ZZZVAULT 4\CELL E WALL-2

#	Type	Inst.	Value	Units	Position	Notes
1	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching area on wall	
		N/A	$\beta/\gamma 30,000$	DPM/100 cm ²		
2	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching area on wall	
		N/A	$\beta/\gamma 10,000$	DPM/100 cm ²		
1	Direct	N/A	α ND	DPM/100 cm ² (T)	Leaching area on wall	
		N/A	$\beta/\gamma 1,600,000$	DPM/100 cm ² (T)		
2	Direct	N/A	α ND	DPM/100 cm ² (T)	Leaching area on wall	
		N/A	$\beta/\gamma 800,000$	DPM/100 cm ² (T)		
3	Direct	N/A	α ND	DPM/100 cm ² (T)	Leaching area on wall	
		N/A	$\beta/\gamma 10,000$	DPM/100 cm ² (T)		
	Text		New Spot 10/29/07			

VSDS Standard Map RSLs

Map: 3 CELL E WALL-3 Survey #: DWPF-M-20071029-10 Date/Time: 10/29/2007 08:00








Comments:

Summary of Highest Readings
(All available values may not be listed)

Smears	Air Samples & Wipes
4) <200 DPM/100 cm ² α 4) 80,000 DPM/100 cm ² β/γ	

Type: Verification

Symbol Legend (for example only) RWP #: N/A

 Smear	 Direct Probe
 Large Area	 Dose Rate
 Air Sample	

Unless otherwise noted, dose rates in mrem/hr.

Lead Inspector: Hicks, Robert (Robby) H

Status: Approved by: Lyons, Lynne, 11/02/2007

Location Code: Z451004

Bldg/Area Name: VAULT 4

Location Description: CELL E WALL-3

VSDS Standard Map RSLs

Data Point Details

Survey #: DWPF-M-20071029-10

Map: 3 - ZZZVAULT 4CELL E WALL-3

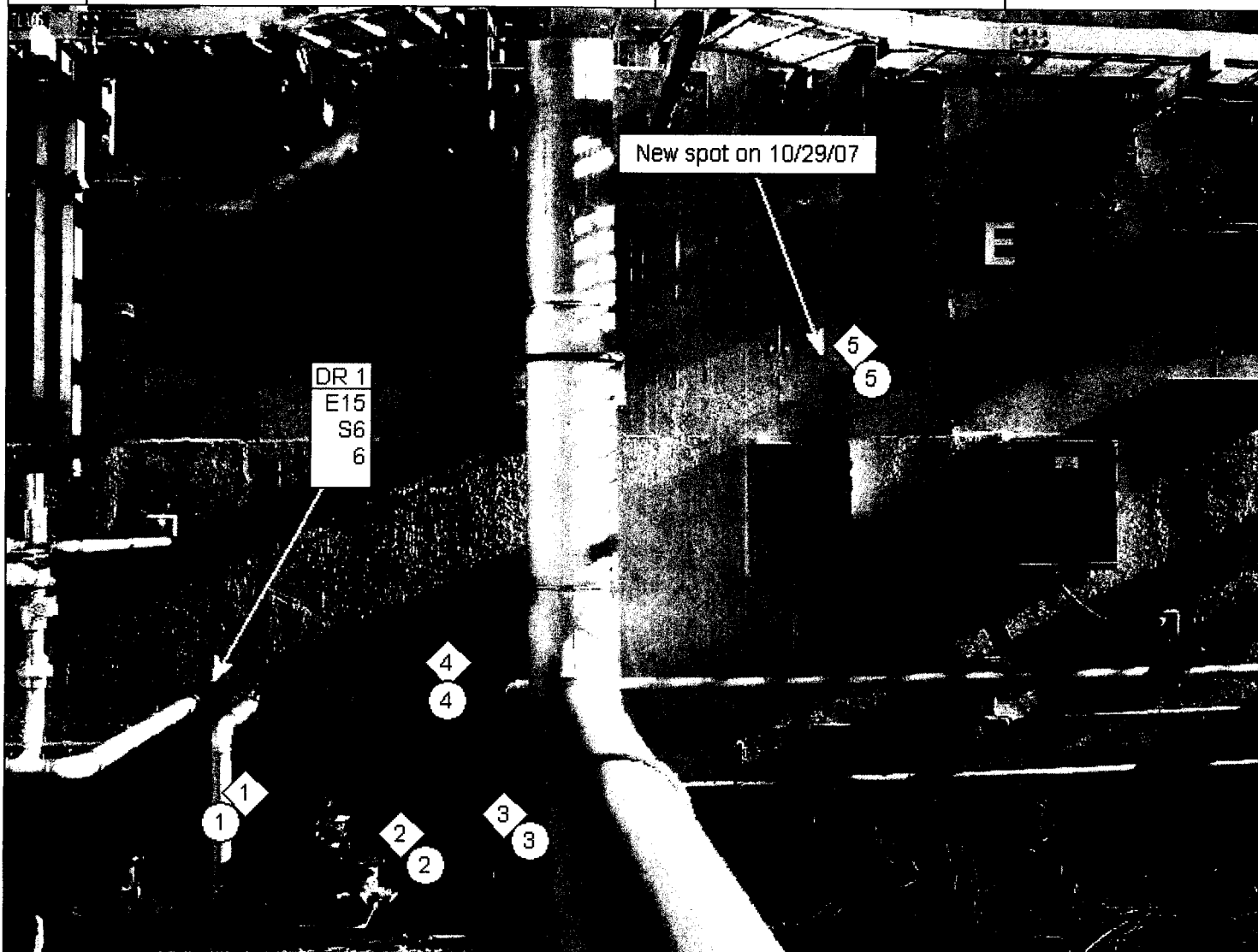
#	Type	Inst.	Value	Units	Position	Notes
1	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching Area on wall	
		N/A	$\beta/\gamma 10,000$	DPM/100 cm ²		
2	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching Area on wall	
		N/A	$\beta/\gamma 6,000$	DPM/100 cm ²		
3	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching Area on wall	
		N/A	$\beta/\gamma 18,000$	DPM/100 cm ²		
4	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching Area on wall	
		N/A	$\beta/\gamma 80,000$	DPM/100 cm ²		
1	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	$\beta/\gamma 400,000$	DPM/100 cm ² (T)		
2	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	$\beta/\gamma 1,200,000$	DPM/100 cm ² (T)		
3	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	$\beta/\gamma 1,500,000$	DPM/100 cm ² (T)		
4	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	$\beta/\gamma 1,200,000$	DPM/100 cm ² (T)		

VSDS Standard Map RSLs

Map: 4 CELL E WALL-4

Survey #: DWPF-M-20071029-10

Date/Time: 10/29/2007 08:00



Comments:

Summary of Highest Readings
(All available values may not be listed)

Smears	Air Samples & Wipes
5) <200 DPM/100 cm ² α	
5) 80,000 DPM/100 cm ² β/γ	

Type: Verification

Symbol Legend (for example only) RWP #: N/A

- Smear
- Large Area
- Air Sample
- Direct Probe
- Dose Rate

Unless otherwise noted, dose rates in mrem/hr.

Lead Inspector: Hicks, Robert (Robby) H

Status: Approved by: Lyons, Lynne, 11/02/2007

Location Code: Z451004

Bldg/Area Name: VAULT 4

Location Description: CELL E WALL-4

Document #: N/A

Image File: ZZZ\VAULT 4\CELL E WALL-4

Survey #: DWPF-M-20071029-10 - Printed On: 11/09/2007 08:15

Page 9 of 16

VSDS Standard Map RSLs

Data Point Details

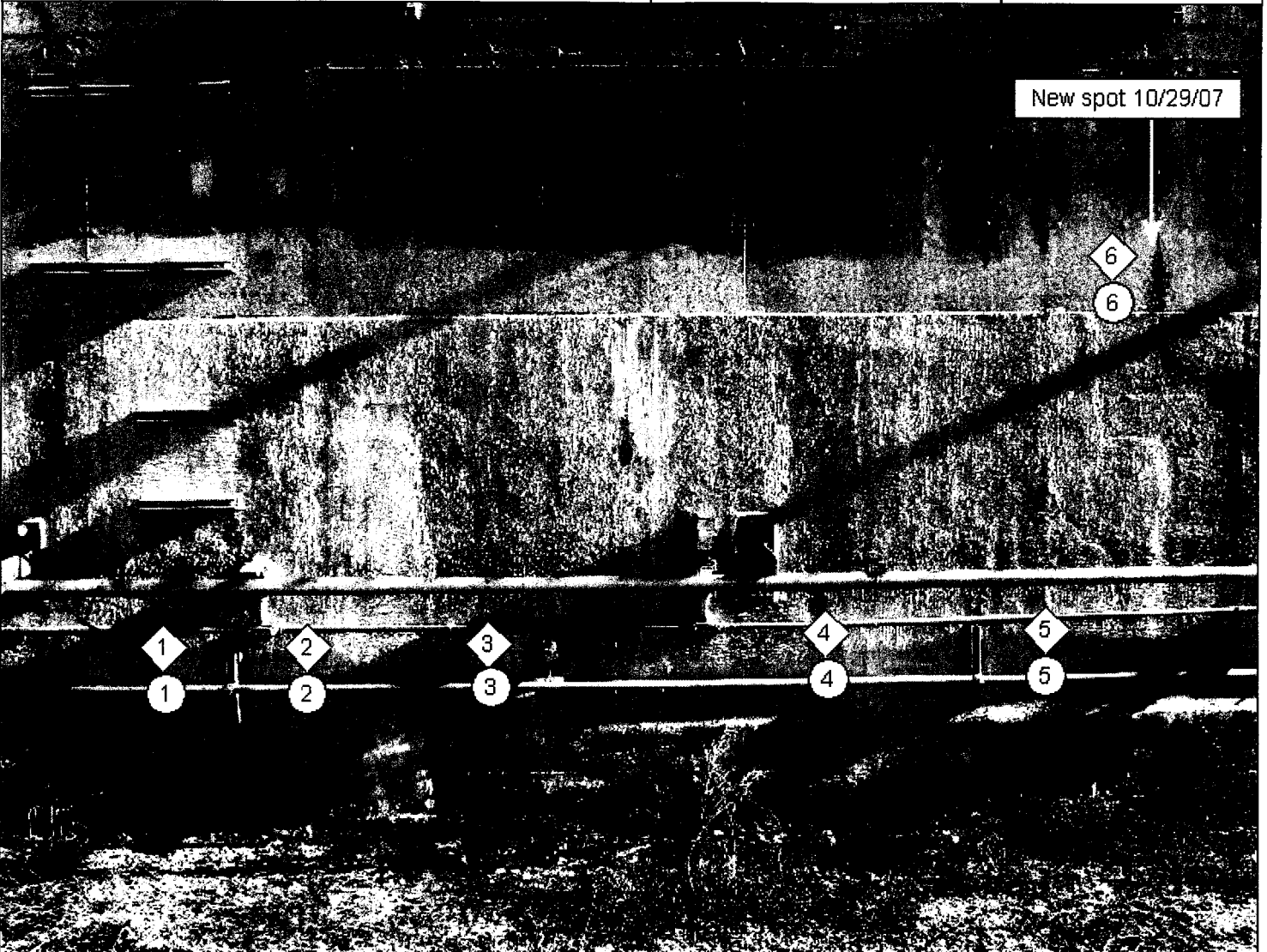
Survey #: DWPF-M-20071029-10

Map: 4 - ZZZVAULT 4CELL E WALL-4

#	Type	Inst.	Value	Units	Position	Notes
1	DR γ	N/A	E 15	mrem/hr	Leachate line at elbow	
		N/A	S 6	mrem/hr		
		N/A	6	mrem/hr		
1	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching area on wall	
		N/A	β/γ 25,000	DPM/100 cm ²		
2	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching area on wall	
		N/A	β/γ 40,000	DPM/100 cm ²		
3	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching area on wall	
		N/A	β/γ 48,000	DPM/100 cm ²		
4	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching area on wall	
		N/A	β/γ 10,000	DPM/100 cm ²		
5	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching area on wall	
		N/A	β/γ 80,000	DPM/100 cm ²		
1	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	β/γ 1,000,000	DPM/100 cm ² (T)		
2	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	β/γ 1,000,000	DPM/100 cm ² (T)		
3	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	β/γ 1,000,000	DPM/100 cm ² (T)		
4	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	β/γ 800,000	DPM/100 cm ² (T)		
5	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	β/γ 600,000	DPM/100 cm ² (T)		
	Text		New spot on 10/29/07			

VSDS Standard Map RSLs

Map: 5 CELL E WALL-5 Survey #: DWPF-M-20071029-10 Date/Time: 10/29/2007 08:00



Comments:

Summary of Highest Readings
(All available values may not be listed)

Smears	Air Samples & Wipes
6) <200 DPM/100 cm ² α 6) 120,000 DPM/100 cm ² β/γ	

Type: Verification

Symbol Legend (for example only) RWP #: N/A

- ⑮ Smear ⬠ Direct Probe
- ⊞ Large Area DR Dose Rate
- ⊡ Air Sample □

Unless otherwise noted, dose rates in mrem/hr.

Lead Inspector: Hicks, Robert (Robby) H

Status: Approved by: Lyons, Lynne, 11/02/2007

Location Code: Z451004

Bldg/Area Name: VAULT 4

Location Description: CELL E WALL-5

VSDS Standard Map RSLs

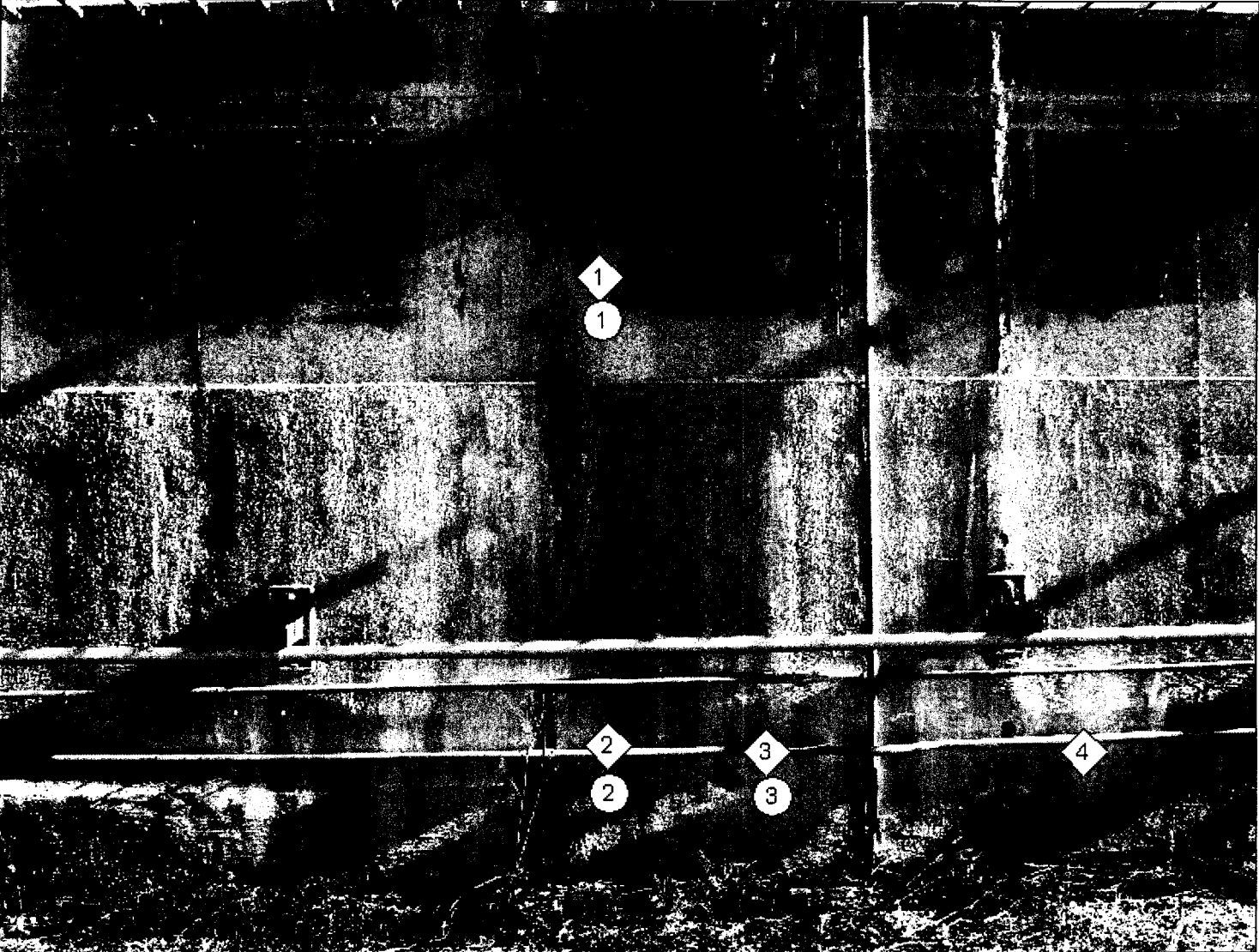
Data Point Details

Survey #: DWPF-M-20071029-10
Map: 5 - ZZZVAULT 4\CELL E WALL-5

#	Type	Inst.	Value	Units	Position	Notes
1	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching area on wall	
		N/A	$\beta/\gamma < 1000$	DPM/100 cm ²		
2	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching area on wall	
		N/A	$\beta/\gamma 8,000$	DPM/100 cm ²		
3	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching area on wall	
		N/A	$\beta/\gamma 60,000$	DPM/100 cm ²		
4	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching area on wall	
		N/A	$\beta/\gamma 30,000$	DPM/100 cm ²		
5	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching area on wall	
		N/A	$\beta/\gamma 40,000$	DPM/100 cm ²		
6	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching area on wall	
		N/A	$\beta/\gamma 120,000$	DPM/100 cm ²		
1	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	$\beta/\gamma 40,000$	DPM/100 cm ² (T)		
2	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	$\beta/\gamma 300,000$	DPM/100 cm ² (T)		
3	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	$\beta/\gamma 1,200,000$	DPM/100 cm ² (T)		
4	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	$\beta/\gamma 1,200,000$	DPM/100 cm ² (T)		
5	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	$\beta/\gamma 1,400,000$	DPM/100 cm ² (T)		
6	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	$\beta/\gamma 1,000,000$	DPM/100 cm ² (T)		
	Text		New spot 10/29/07			

VSDS Standard Map RSLs

Map: 6 CELL E WALL-6 Survey #: DWPF-M-20071029-10 Date/Time: 10/29/2007 08:00



Comments:

Summary of Highest Readings
(All available values may not be listed)

Smears	Air Samples & Wipes
3) <200 DPM/100 cm ² α 1) 180,000 DPM/100 cm ² β/γ	

Type: Verification

Symbol Legend (for example only) RWP #: N/A

15 Smear 25 Large Area 15 Air Sample	15 Direct Probe DR Dose Rate
--	---------------------------------

Unless otherwise noted, dose rates in mrem/hr.

Lead Inspector: Hicks, Robert (Robby) H

Location Code: Z451004

Location Description: CELL E WALL-6

Status: Approved by: Lyons, Lynne, 11/02/2007

Bldg/Area Name: VAULT 4

Document #: N/A

Survey #: DWPF-M-20071029-10 - Printed On: 11/09/2007 08:15

Image File: ZZZ\VAULT 4\CELL E WALL-6

VSDS Standard Map RSLs

Data Point Details

Survey #: DWPF-M-20071029-10

Map: 6 - ZZZVAULT 4\CELL E WALL-6

#	Type	Inst.	Value	Units	Position	Notes
1	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching area on wall	
		N/A	β/γ 180,000	DPM/100 cm ²		
2	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching area on wall	
		N/A	β/γ 60,000	DPM/100 cm ²		
3	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Leaching area on wall	
		N/A	β/γ 70,000	DPM/100 cm ²		
1	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	β/γ 1,500,000	DPM/100 cm ² (T)		
2	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	β/γ 1,400,000	DPM/100 cm ² (T)		
3	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	β/γ 700,000	DPM/100 cm ² (T)		
4	Direct	N/A	α ND	DPM/100 cm ² (T)		
		N/A	β/γ 1,600,000	DPM/100 cm ² (T)		

VSDS Standard Map RSLs

Map: 7 CELL E WALL-7 Survey #: DWPF-M-20071029-10 Date/Time: 10/29/2007 08:00



Comments:

Summary of Highest Readings
(All available values may not be listed)

Smears	Air Samples & Wipes
2) <200 DPM/100 cm ² α 1) 160,000 DPM/100 cm ² β/γ	

Type: Verification

Symbol Legend (for example only) RWP #: N/A

- Smear
- Large Area
- Air Sample
- Direct Probe
- Dose Rate

Unless otherwise noted, dose rates in mrem/hr.

Lead Inspector: Hicks, Robert (Robby) H

Status: Approved by: Lyons, Lynne, 11/02/2007

Location Code: Z451004

Bldg/Area Name: VAULT 4

Location Description: CELL E WALL-7

VSDS Standard Map RSLs

Data Point Details

Survey #: DWPF-M-20071029-10

Map: 7 - ZZZ\VAULT 4\CELL E WALL-7

#	Type	Inst.	Value	Units	Position	Notes
1	Smear	N/A	α <200	DPM/100 cm2	Leaching area on wall	
		N/A	β/γ 160,000	DPM/100 cm2		
2	Smear	N/A	α <200	DPM/100 cm2		
		N/A	β/γ 30,000	DPM/100 cm2		
1	Direct	N/A	α ND	DPM/100 cm2 (T)		
		N/A	β/γ 1,500,000	DPM/100 cm2 (T)		
2	Direct	N/A	α ND	DPM/100 cm2 (T)		
		N/A	β/γ 1,400,000	DPM/100 cm2 (T)		

VSDS Standard Map RSLs

Comments:

Performed survey of leaching areas on Cell F

Max. Probe: ND alpha, 800,000 dpm beta-gamma/ 100cm²(T)

Max. Transferable contamination: <200 dpm alpha, 10,000 dpm beta-gamma/ 100cm²

Max. Dose Rate: 1.5 mrem/hr-GA

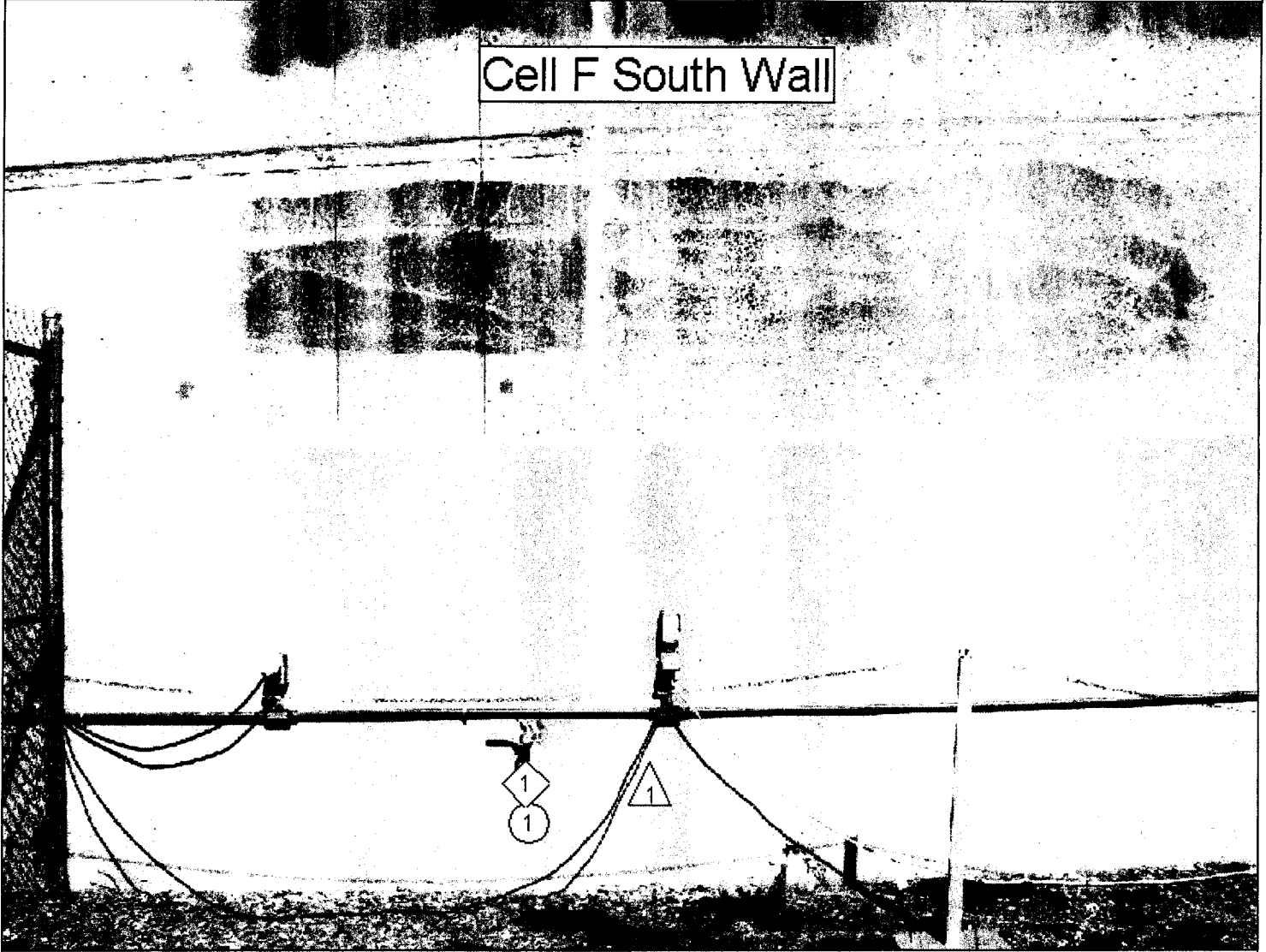
Field DAC estimate: ND > Rnth bkg Pu/Fp

Air Sample was moved from area to area during survey.

VSDS Standard Map RSLs

Map: 1 CELL F WEST-005 Survey #: DWPF-M-20071102-3 Date/Time: 11/02/2007 09:00

Cell F South Wall



Comments:

Summary of Highest Readings
(All available values may not be listed)

Smears	Air Samples & Wipes
1) <200 DPM/100 cm ² α	A/S 1) ND DAC-hr α
1) 8,000 DPM/100 cm ² β/γ	A/S 1) ND DAC-hr β/γ

Type: Verification

Symbol Legend (for example only) RWP #: N/A

- ⑮ Smear
- ⊞ Large Area
- ⚠ Air Sample
- Ⓛ Direct Probe
- DR Dose Rate

Unless otherwise noted, dose rates in mrem/hr.

Lead Inspector: Hicks, Robert (Robby) H

Location Code: Z451004

Location Description: CELL F WEST-005

Status: Approved by: Lyons, Lynne, 11/05/2007

Bldg/Area Name: VAULT 4

VSDS Standard Map RSLs

Data Point Details

Survey #: DWPF-M-20071102-3

Map: 1 - ZZZ\VAULT 4\CELL F WEST-005

#	Type	Inst.	Value	Units	Position	Notes
1	Smear	N/A	α <200	DPM/100 cm ²	Cell F West wall below drain valve	
		N/A	β/γ 8,000	DPM/100 cm ²		
1	Direct	N/A	α ND	DPM/100 cm ² (T)	Cell F West wall below drain valve	
		N/A	β/γ 200,000	DPM/100 cm ² (T)		
1	Air Sample		ND	DAC-hr α	Various leaching sites	
			ND	DAC-hr β/γ		
	Text		Cell F South Wall			

VSDS Standard Map RSLs

Supplemental Airborne Survey Information

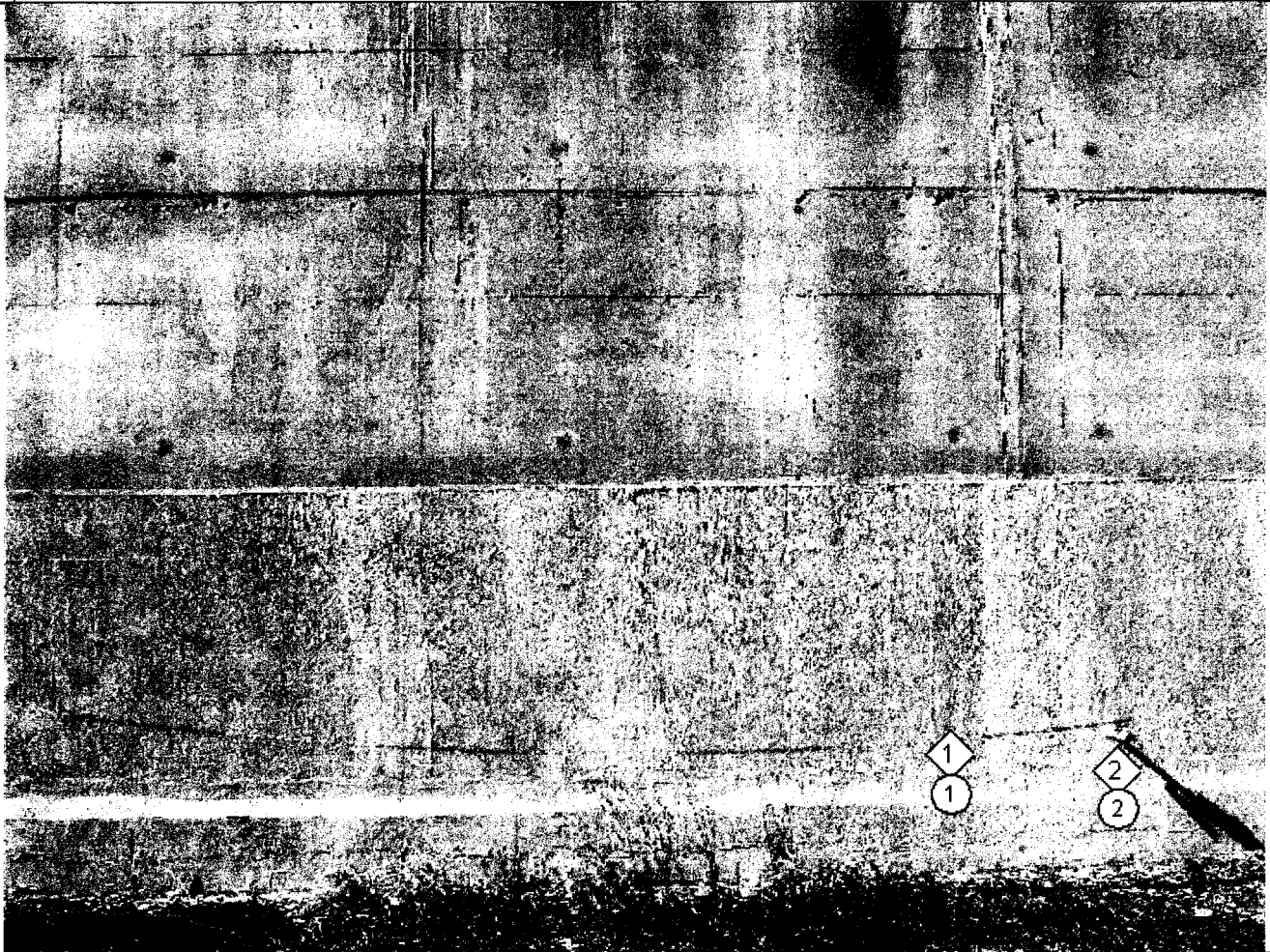
#	Sample Type	Barcode	Motor Pump Serial #	Sample Media	Respirator Type	Start Time	End Time	Total Run Time (min)	Flow Rates (ft ³ /min)			Total Vol. (ft ³)
									Beginning	Ending	Average	
1	MAP	5899913		2" Barcode	Full Face	11/02/2007 10:30	11/05/2007 12:00	4410	2	2	2	8820
















Initial/Final Probe

Air Sample No.	Reading Type	Value	Units	Date/Time
1	Initial Alpha	800	DPM	11/05/2007 10:30
	Final Alpha	800	DPM	11/05/2007 12:00
	Initial Beta/Gamma	2000	DPM	11/05/2007 10:30
	Final Beta/Gamma	2000	DPM	11/05/2007 12:00

VSDS Standard Map RSLs

Map: 2	CELL F SOUTH-002	Survey #: DWPF-M-20071102-3	Date/Time: 11/02/2007 09:00
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Comments:	Summary of Highest Readings (All available values may not be listed)							
	Smears	Air Samples & Wipes						
	2) <200 DPM/100 cm ² α 2) 10,000 DPM/100 cm ² β/γ							
Type: Verification Symbol Legend (for example only) RWP #: N/A <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">  Smear </td> <td style="text-align: center;">  Direct Probe </td> </tr> <tr> <td style="text-align: center;">  Large Area </td> <td style="text-align: center;">  Dose Rate </td> </tr> <tr> <td style="text-align: center;">  Air Sample </td> <td></td> </tr> </table>	 Smear	 Direct Probe	 Large Area	 Dose Rate	 Air Sample		Unless otherwise noted, dose rates in mrem/hr.	
 Smear	 Direct Probe							
 Large Area	 Dose Rate							
 Air Sample								
Lead Inspector: Hicks, Robert (Robby) H Location Code: Z451004 Location Description: CELL F SOUTH-002	Status: Approved by: Lyons, Lynne, 11/05/2007 Bldg/Area Name: VAULT 4							

VSDS Standard Map RSLs

Data Point Details

Survey #: DWPF-M-20071102-3
















Map: 2 - ZZZ\VAULT 4\CELL F SOUTH-002

#	Type	Inst.	Value	Units	Position	Notes
1	Smear	N/A	$\alpha < 200$	DPM/100 cm ²		
		N/A	$\beta/\gamma 4,000$	DPM/100 cm ²		
2	Smear	N/A	$\alpha < 200$	DPM/100 cm ²		
		N/A	$\beta/\gamma 10,000$	DPM/100 cm ²		
1	Direct	N/A	α ND	DPM/100 cm ² (T)	Cell F at base of South wall	
		N/A	$\beta/\gamma 250,000$	DPM/100 cm ² (T)		
2	Direct	N/A	α ND	DPM/100 cm ² (T)	Cell F below drain valve	
		N/A	$\beta/\gamma 800,000$	DPM/100 cm ² (T)		

VSDS Standard Map RSLs

Map: 3 CELL F SOUTH-004	Survey #: DWPF-M-20071102-3	Date/Time: 11/02/2007 09:00
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Comments:	Summary of Highest Readings (All available values may not be listed)							
	Smears	Air Samples & Wipes						
	1) <200 DPM/100 cm ² α 1) 4,000 DPM/100 cm ² β/γ							
Type: Verification								
Symbol Legend (for example only) RWP #: N/A								
<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">  Smear </td> <td style="text-align: center;">  Direct Probe </td> </tr> <tr> <td style="text-align: center;">  Large Area </td> <td style="text-align: center;">  Dose Rate </td> </tr> <tr> <td style="text-align: center;">  Air Sample </td> <td></td> </tr> </table>			 Smear	 Direct Probe	 Large Area	 Dose Rate	 Air Sample	
 Smear	 Direct Probe							
 Large Area	 Dose Rate							
 Air Sample								
Unless otherwise noted, dose rates in mrem/hr.								
Lead Inspector: Hicks, Robert (Robby) H		Status: Approved by: Lyons, Lynne, 11/05/2007						
Location Code: Z451004		Bldg/Area Name: VAULT 4						
Location Description: CELL F SOUTH-004								

VSDS Standard Map RSLs

Data Point Details

Survey #: DWPF-M-20071102-3

Map: 3 - ZZZVAULT 4\CELL F SOUTH-004

#	Type	Inst.	Value	Units	Position	Notes
1	Smear	N/A	$\alpha < 200$	DPM/100 cm ²	Cell F South wall below the drain valve	
		N/A	$\beta/\gamma 4,000$	DPM/100 cm ²		
1	Direct	N/A	α ND	DPM/100 cm ² (T)	Cell F South wall below drain valve.	
		N/A	$\beta/\gamma 250,000$	DPM/100 cm ² (T)		

Mr. John M. McCain, Jr.
SRS-REG-2007-00035
Page 4 of 5
November 9, 2007

cc: With attachments
R.T. Caldwell II, SCDHEC, Aiken SC
B.S. Mullinax PE, SCHEC, Columbia SC

bc: Without attachments
V.G. Dickert, WSRC, 730-1B, Rm. 343
S.A. Thomas, WSRC, 766-H, Rm. 2312
R.K. Cauthen, WSRC, 766-H, Rm. 2307
L.B. Romanowski, WSRC, 766-H, Rm. 1066B
H.J. Stafford III, WSRC, 730-1B, Rm. 215
J.D. Heffner, WSRC, 735-B, Rm. 132
S.K. Nicodemus, WSRC, 704-S, Rm. 22
M.A. Lindholm, WSRC, 704-S, Rm. 11
E. Patten, WSRC, 704-Z, Rm. 6
W.I. Lewis III, WSRC, 766-H, Rm. 2012
E. Saldivar Jr, WSRC, 766-H, Rm. 2302
S.D. Burke, WSRC, 704-S, Rm. 17
D.C. Sherburne, WSRC, 704-S, Rm. 18
P.W. Norris, WSRC, 704-Z Rm. 4
T.F. England, WSRC, 705-1C, Rm. 17
M.C. Wright, WSRC, 705-1C, Rm. 16
T.J. Spears, DOE, 704-S, Rm. 29
L.T. Ling, DOE, 766-H, Rm. 2015
C.H. Pang, DOE, 766-H, Rm. 2435
D.F. Hoel, DOE, 730-B, Rm. 3463
S.A. Danker, DOE, 730-B, Rm. 3480
G.S. Hoover, DOE, 730-B, Rm. 3478

File Info:

SCDHEC, Saltstone
10666, DOE/ADM
16-1.5(a) Permanent