LETTER REPORT FOR THE RESULTS OF ANALYTICAL SAMPLING FOR VOLATILE ORGANIC COMPOUNDS AT MATERIAL DISPOSAL AREA B

INTRODUCTION

This letter report provides the analytical results for samples collected at Material Disposal Area (MDA) B at Technical Area 21 (TA-21) between September 9 and 12, 2014. In its approval with modifications of the investigation/remediation report for MDA B, dated July 8, 2014, the New Mexico Environment Department (NMED) directed Los Alamos National Laboratory (LANL or the Laboratory) to submit a work plan proposing sampling and analysis appropriate for demonstrating that volatile organic compounds (VOCs) are below residential soil screening levels at the site (LANL 2013, 243675; NMED 2014, 525003).

DRILLING AND SAMPLING

Twenty-two boreholes were drilled to collect undisturbed samples for VOC analyses in accordance with the NMED-approved work plan (LANL 2014, 260201; NMED 2014, 525180). Figure 1 shows the location of the boreholes, and Figures 2 through 23 are the borehole logs. At each borehole, a sample was collected below the clean fill/tuff (Qbt 3) interface of the former excavated trenches at depths between 6 and 12 in.

The boreholes were drilled using a hollow-stem auger with a split-spoon sampler lined with brass sleeves. The sleeve representing the target sample depths was capped on each end and retained for VOC analysis (U.S. Environmental Protection Agency Method 8260B). Per the approved work plan, the brass sleeve ends were covered with a sheet of Teflon tape, capped, and duct-taped before they were submitted to the Laboratory's Sample Management Office.

RESULTS

Table 1 shows the samples collected and field-screening results. All the analytical data are provided in Attachment 1 on CD submitted with this letter report.

VOCs were not detected in any of the samples collected in 2014. Therefore, the Laboratory has demonstrated that VOC concentrations from samples collected at the site are below residential soil screening levels (SSLs).

REFERENCES

The following list includes all documents cited in this report. Parenthetical information following each reference provides the author(s), publication date, and ER ID. This information is also included in text citations. ER IDs are assigned by the Environmental Programs Directorate's Records Processing Facility (RPF) and are used to locate the document at the RPF and, where applicable, in the master reference set.

Copies of the master reference set are maintained at the NMED Hazardous Waste Bureau and the Directorate. The set was developed to ensure that the administrative authority has all material needed to review this document, and it is updated with every document submitted to the administrative authority. Documents previously submitted to the administrative authority are not included.

- LANL (Los Alamos National Laboratory), June 2013. "Investigation/Remediation Report for Material Disposal Area B, Solid Waste Management Unit 21-015, Revision 2," Los Alamos National Laboratory document LA-UR-13-24556, Los Alamos, New Mexico. (LANL 2013, 243675)
- LANL (Los Alamos National Laboratory), August 2014. "Drilling Work Plan for Material Disposal Area B Volatile Organic Compound Sampling," Los Alamos National Laboratory document LA-UR-14-26305, Los Alamos, New Mexico. (LANL 2014, 260201)
- NMED (New Mexico Environment Department), July 8, 2014. "Investigation/Remediation Report for Material Disposal Area B, Solid Waste Management Unit 21-015, Revision 2, Approval with Modifications," New Mexico Environment Department letter to P. Maggiore (DOE-NA-LA) and J.D. Mousseau (LANL) from J.E. Kieling (NMED-HWB), Santa Fe, New Mexico. (NMED 2014, 525003)
- NMED (New Mexico Environment Department), September 16, 2014. "Approval, Drilling Work Plan for Material Disposal Area B Volatile Organic Compound Sampling," New Mexico Environment Department letter to P. Maggiore (DOE-NA-LA) and J.D. Mousseau (LANL) from J.E. Kieling (NMED-HWB), Santa Fe, New Mexico. (NMED 2014, 525180)

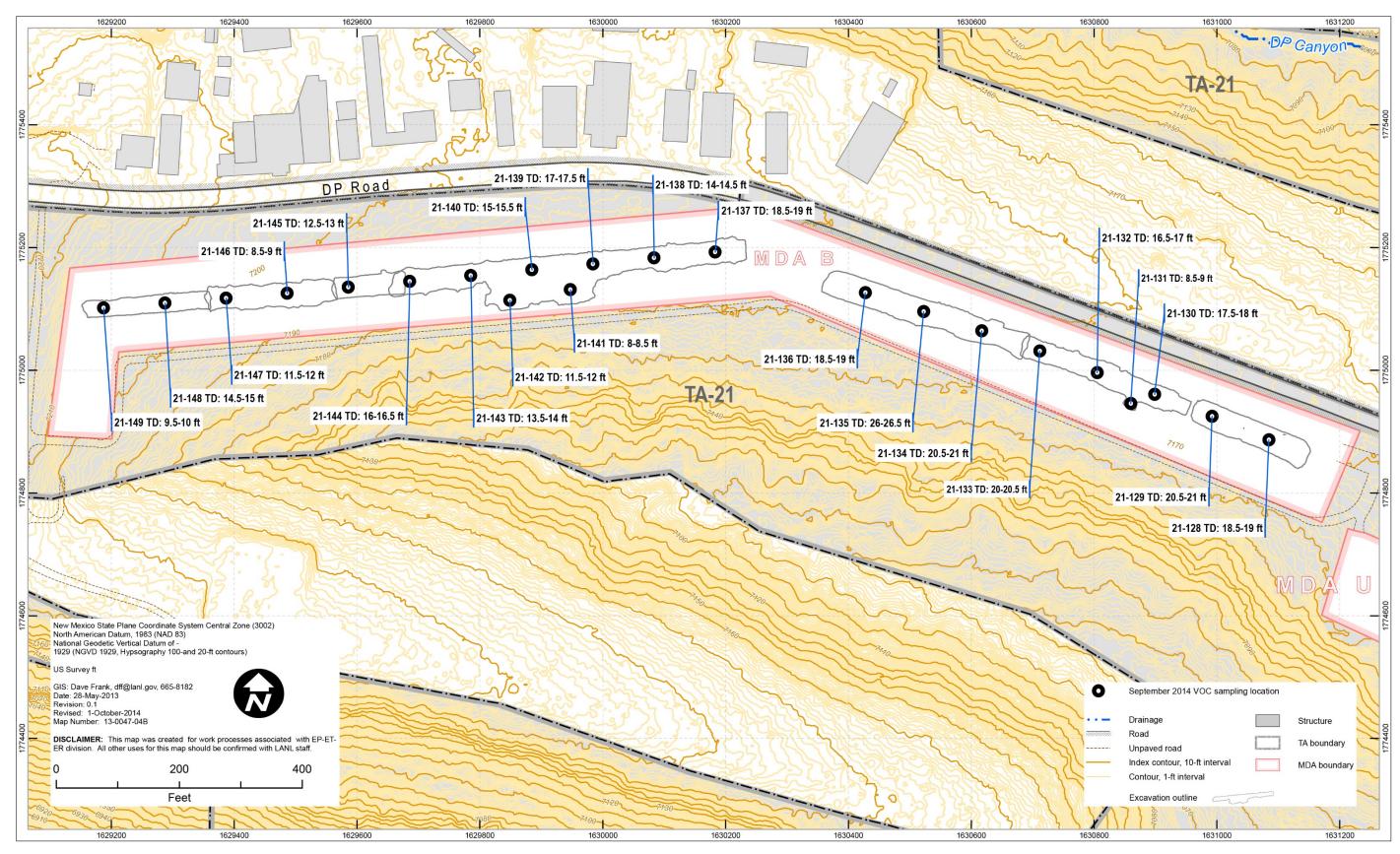


Figure 1 Borehole locations at MDA B

October 2014

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Boreho	le ID: 2	1-128	TA: 21		Drill Depth:	19 ft		Total Pages: 1 of 1				
		e and D. T			Date: 9/09/	14				diological Screening		
		any: Precis		Equipment					34 dpm,	β/γ: 1484 dpm		
Sampli	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split (Core-Barrel	Logge	ed By: A	A. Stocker, A.	Tosh and S. Muggleton		
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID			L DESCRIP	TION	LITHOLOGICAL UNIT	CITHOLOGICAL UNIT			
0				Construction								
0.5						ty pebble gra						
1						tritus of mixe trophyre) and						
1.5						idicating bas						
2				gravel)	•	J						
2.5												
3												
3.5 4												
4.5												
4.5 5												
5.5												
6												
6.5												
7												
7.5												
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12												
12.5												
13												
13.5												
14												
14.5												
15												
15.5												
16												
16.5												
17				11.77 5 . 5 . 5			4	Obto	T. #	1-147 5 4 1		
17.5						Member of	tne	Qbt 3	ı uπ contac	t at 17.5 ft bgs		
18 18.5	100%	PID= 0.9	MD21 14 96022	Bandelier 1		e, moderately	wolded		Sample int	onel 18 5 10 ft bas		
18.5	100%	$\alpha = 21$	MD21-14-86033	_		e, moderately s and pumic			Sample int	erval 18.5–19 ft bgs		
19.5				crystal-rich	, minior lithic	s and pumic	е-роог.					
20		β/γ= 1941										
20.5												
20.5												
21.5												
21.5												
			<u> </u>	<u> </u>					L			

Figure 2 Borehole log for location 21-128

 October 2014
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 LA-UR-14-27862

 EP2014-0486
 EP2014-0486

Boreho	orehole ID: 21-129 TA: 21 Drill Depth: 21 ft						Total Pages: 1 of 1				
		e and D. T			Date: 9/09/1	14				adiological Screening	
		any: Precis		Equipment					34 dpm	β/γ: 1484 dpm	
Sampli	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split C	Core-Barrel	Logg	ed By: A	A. Stocker, A.	. Tosh and S. Muggleton	
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID			L DESCRIP	TION	LITHOLOGICAL UNIT	NOTES		
0				Constructi		la la la					
0.5						ty pebble gra s of mixed vol					
1						trophyre) and					
1.5						dicating bas					
2.5				gravel)							
3											
3.5											
4											
4.5											
5											
5.5											
6											
6.5											
7											
7.5 8											
8.5											
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9.5								=			
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10.5											
11											
11.5											
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12.5											
13 13.5											
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14.5											
15											
15.5											
16											
16.5											
17											
17.5											
18 18.5											
18.5											
19.5											
20				Unit 3 of th	e Tschireae	Member of	the	Qbt 3	Tuff contact	t at 20 ft bgs	
20.5	100%	PID= 0.0	MD21-14-86034	Bandelier 1				1		erval 20.5–21 ft bgs	
21		α= 26		AFT: Gray to	o light purple	, moderately					
21.5		β/γ= 1984				nor lithics an					
22				poor. Clay- fracture pre		nick, oxidized	vertical				
22.5				naciule pre	SCIIL.						

Figure 3 Borehole log for location 21-129

Boreho	le ID: 2	1-130	TA: 21		Drill Depth:	18 ft		Total Pages: 1 of 1		
		e and D. To			Date: 9/09/	14				diological Screening
		any: Precis		Equipment					34 dpm	β/γ: 1484 dpm
Sampli	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split	Core-Barrel	Logge	ed By: <i>F</i>	A. Stocker, A.	Tosh and S. Muggleton
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID		OLOGICAL	. DESCRIP	TION	LITHOLOGICAL UNIT		NOTES
0				Construction			1			
0.5					solidated sil se sand, de					
1					se sand, de ck-orange v					
1.5					id granite (ir					
2				gravel)						
2.5										
3.5										
4										
4.5										
5										
5.5										
6								1		
6.5										
7										
7.5										
8								⋷		
8.5								"		
9										
9.5										
10										
10.5 11										
11.5										
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12.5										
13										
13.5										
14										
14.5										
15										
15.5										
16										
16.5					L	<u> </u>		01.1.		
17	1000/	PID= 0.7	MD04 44 00005		e Tschirege	Member o	t the	Qbt 3		tat 17 ft bgs
17.5 18		$\alpha = 47$	MD21-14-86035	Bandelier 1	r uff: o light purple	moderate	lywell			erval 17.5–18 ft bgs
18.5		α= 47 β/γ= 2170			stal-rich, mi					Duplicate MD21-14- ected at this location
19		ρ/γ- 21/0		pumice-po					COOCO COME	Joica at una iocation
19.5										
20										
20.5										
21										
21.5										
22										
22.5										

Figure 4 Borehole log for location 21-130

Boreho	le ID: 2	1-131	TA: 21		Drill Depth	9 ft		Total Pages: 1 of 1		
		e and D. T			Date: 9/10/	14				adiological Screening
		any: Precis		Equipment		D D			29 dpm	β/γ: 1598 dpm
Samplii	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split	Core-Barrel	Logge	ed By: A	A. Stocker, A.	Tosh and S. Muggleton
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID	LITHOLOGICAL DESCRIPTION						NOTES
0				Constructi						
0.5					solidated si					
1					se sand, de ck-orange v					
1.5					nd granite (ii					
2.5				gravel)						
3										
3.5								l _		
4								₫		
4.5										
5										
5.5										
6										
6.5										
7.5										
8									T (1	
				Unit 3 of th	e Ischirege	Member o	f the	Qbt 3	I I uπ contact	t at 8 ft bgs
8.5	100%	PID= 0.1	MD21-14-86036	Bandelier		Member o	f the	Qbt 3		t at 8 ft bgs erval 8.5–9 ft bgs
8.5 9	100%	PID= 0.1 α= 52	MD21-14-86036	Bandelier ⁻				Qbt 3		
9 9.5	100%		MD21-14-86036	Bandelier AFT: Gray to welded, cry	Fuff: o light purpl <i>r</i> stal-rich, m	e, moderate nor mafics	ly well- and	Qbt 3		
9 9.5 10	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Fuff: o light purpl <i>r</i> stal-rich, m	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5 11	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5 11 11.5	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5 11	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5 11 11.5 12 12.5	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5 11 11.5 12 12.5 13	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5 11 11.5 12 12.5 13 13.5 14 14.5	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5 11 11.5 12 12.5 13 13.5 14 14.5 15	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5 11 11.5 12 12.5 13 13.5 14 14.5 15 15.5	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5 11 11.5 12 12.5 13 13.5 14 14.5 15 15.5 16	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5 11 11.5 12 12.5 13 13.5 14 14.5 15 15.5	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5 11 11.5 12 12.5 13 13.5 14 14.5 15 16 16.5	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5 11 11.5 12 12.5 13 13.5 14 14.5 15 16 16.5 17 17.5 18	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5 11 11.5 12 12.5 13 13.5 14 14.5 15 16 16.5 17 17.5 18 18.5	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5 11 11.5 12 12.5 13 13.5 14 14.5 15 16 16.5 17 17.5 18 18.5 19	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5 11 11.5 12 12.5 13 13.5 14 14.5 15 16 16.5 17 17.5 18 18.5 19 19.5	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5 11 11.5 12 12.5 13 13.5 14 14.5 15 16 16.5 17 17.5 18 18.5 19 19.5 20	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5 11 11.5 12 12.5 13 13.5 14 14.5 15 16 16.5 17 17.5 18 18.5 19 19.5 20 20.5	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5 11 11.5 12 12.5 13 13.5 14 14.5 15 16 16.5 17 17.5 18 18.5 19 19.5 20 20.5 21	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		
9 9.5 10 10.5 11 11.5 12 12.5 13 13.5 14 14.5 15 16 16.5 17 17.5 18 18.5 19 19.5 20 20.5	100%	α= 52	MD21-14-86036	Bandelier AFT: Gray to welded, cry pumice-po	Tuff: o light purpl ostal-rich, m or. Minor rec	e, moderate nor mafics Idish brown	ly well- and oxidized	Qbt 3		

Figure 5 Borehole log for location 21-131

Boreho	le ID: 2	1-132	TA: 21		Drill Depth:	17 ft				Total Pages: 1 of 1
		e and D. T			Date: 9/10/	14				diological Screening
		any: Precis		Equipment					29 dpm	β/γ: 1598 dpm
Sampli	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split (Core-Barrel	Logge	ed By: A	A. Stocker, A.	Tosh and S. Muggleton
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID		OLOGICAL	. DESCRIP	TION	LITHOLOGICAL UNIT		NOTES
0				Construction						
0.5					solidated sil					
1					se sand, de ck-orange vi					
1.5					nd granite (ir					
2.5				gravel)	•	-				
3										
3.5										
4										
4.5										
5										
5.5										
6										
6.5										
7										
7.5								≣		
8								_		
8.5										
9.5										
10										
10.5										
11										
11.5										
12										
12.5										
13										
13.5										
14										
14.5										
15 15 F										
15.5 16				Unit 3 of th	e Tschirege	Member o	f the	Qbt 3	Tuff contact	t at 16 ft bgs
16.5	100%	PID= 0.1	MD21-14-86037	Bandelier 1	_	ivicilibel 0	i ale	QUI 3		erval 16.5–17 ft bgs
17	. 5 5 7 5	$\alpha = 21$			o light purple	e. moderate	lv well-		Sample int	
17.5		β/γ= 2100			stal-rich, mi					
18				pumice-po						
18.5										
19										
19.5										
20										
20.5										
21										
21.5										
22 22.5										
22.5]						

Figure 6 Borehole log for location 21-132

Boreho	le ID: 2	1-133	TA: 21	Drill Depth: 20.5ft					Total Pages: 1 of 1		
		e and D. T			Date: 9/10/	14				adiological Screening	
		any: Precis		Equipment					29 dpm	β/γ: 1598 dpm	
Sampli	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split (Core-Barrel	Logge	ed By: A	A. Stocker, A	. Tosh and S. Muggleton	
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID		OLOGICAL	_ DESCRIP	TION	LITHOLOGICAL UNIT	NOTES		
0				Construction		h h l					
0.5					solidated sil se sand, de						
1					ck-orange vi						
1.5					nd granite (ir						
2.5				gravel)							
3								-			
3.5											
4											
4.5											
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15											
15.5											
16											
16.5											
17											
17.5											
18 18.5											
18.5											
19.5				Unit 3 of th	e Tschirege	Member o	f the	Qbt 3	Tuff contac	t at 19.5 ft bgs	
20	100%	PID= 0.0	MD21-14-86038	Bandelier 1		, member 0		QDI U		terval 20–20.5 ft bgs	
20.5		$\alpha = 21$			to light pur	ple, moder	ately well-		Japio int	20.0 1090	
21		β/γ= 1920			ystal-rich, r						
21.5				pumice-po							
22											
22.5											

9

Figure 7 Borehole log for location 21-133

	le ID: 2		TA: 21		Drill Depth:	21 ft				Total Pages: 1 of 1
		e and D. T			Date: 9/10/	14				adiological Screening
		any: Precis		Equipment					29 dpm	β/γ: 1598 dpm
Sampli	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split (Core-Barrel	Logge	ed By: A	A. Stocker, A.	. Tosh and S. Muggleton
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID		OLOGICAL	_ DESCRIP	PTION	LITHOLOGICAL UNIT		NOTES
0				Construction						
0.5					solidated sil		ravel with ced volcanic			
1					se sand, de ck-orange vi					
1.5					id granite (ir					
2				gravel)	J (. 3.30				
2.5				·						
3										
3.5										
4										
4.5										
5										
5.5										
6										
6.5										
7.5										
8										
8.5										
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9.5										
10								₫		
10.5										
11										
11.5										
12										
12.5										
13										
13.5										
14								1		
14.5								1		
15										
15.5										
16										
16.5										
17										
17.5										
18										
18.5										
19										
19.5								<u> </u>		
20	1000				e Tschirege	Member o	f the	Qbt 3		t at 20 ft bgs
20.5	100%	PID= 0.0	MD21-14-86039	Bandelier 1			<u> </u>		Sample int	erval 20.5–21 ft bgs
21		α= 57		AFT: Gray to	o light purple	e, poorly we	ided,			
21.5		β/γ= 2210		crystai-rich,	minor mafi	cs and pum	nce-poor.			
22										
22.5										

Figure 8 Borehole log for location 21-134

Boreho	le ID: 2	1-135	TA: 21	Drill Depth: 26.5 ft			Total Pages: 1 of 1			
		e and D. To	,		Date: 9/10/	14				adiological Screening
		any: Precis		Equipment					29 dpm	β/γ: 1598 dpm
Sampli	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split	Core-Barrel	Logge	ed By: A	A. Stocker, A.	. Tosh and S. Muggleton
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID		OLOGICAL	. DESCRIP	TION	LITHOLOGICAL UNIT	NOTES	
0				Construction						
0.5					solidated sil		ed volcanic			
1					ck-orange v			≣		
1.5				quartzite ar	nd granite (ir					
2.5				gravel)						
0										
ge										
Break in Scale										
äk										
B										
15										
15.5 16										
16.5										
17										
17.5										
18										
18.5										
19										
19.5								_		
20								∄		
20.5										
21.5										
22										
22.5										
23										
23.5										
24										
24.5										
25				Limit O -f ()	a Taabina	Mamelean	£ 41	Oht o	T. # a 4:	t at 25 5 ft ha-
25.5 26	100%	PID= 0.0	MD21-14-86040	Bandelier 1	e Tschirege	wember o	t tne	Qbt 3		t at 25.5 ft bgs erval 26–26.5 ft bgs
26.5		$\alpha = 57$	WID 2 1-14-00040		o light purple	e. moderate	lvwell-		Jampie IIII	Ci vai 20-20.0 it bys
27		β/γ= 2110		welded, cry	stal-rich, mi					
27.5				pumice-po						
28										
28.5										
29										
29.5										
30										
30.5 31										
31.5										
51.5								<u> </u>	I .	

Figure 9 Borehole log for location 21-135

Boreho	le ID: 2	1-136	TA: 21		Drill Depth:	19 ft				Total Pages: 1 of 1	
Drillers	: T. Ros	e and D. T	oney		Date: 9/11/	14		Background Radiological Screening			
		any: Precis		Equipment					21 dpm	β/γ: 1529 dpm	
Sampli	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split	Core-Barrel	Logge	ed By: A	A. Stocker, A.	Tosh and S. Muggleton	
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID		OLOGICAL	_ DESCRIP	TION	LITHOLOGICAL UNIT		NOTES	
0				Constructi							
0.5					solidated sil se sand, de						
1					se sand, de ck-orange vi						
1.5					nd granite (ir						
2				gravel)							
2.5											
3.5											
4											
4.5											
5											
5.5											
6											
6.5											
7											
7.5											
8											
8.5 9								≣			
9.5											
10											
10.5											
11											
11.5											
12											
12.5											
13											
13.5											
14											
14.5 15											
15.5											
16											
16.5											
17											
17.5											
18					e Tschirege	Member o	f the	Qbt 3		at 18 ft bgs	
18.5		PID= 0.0	MD21-14-86041	Bandelier 1					Sample into	erval 18.5–19 ft bgs	
19		α= 26			o light purple stal-rich, mi						
19.5 20		β/γ= 1997		pumice-po		noi mancs i	ailu				
20.5				====================================							
20.5											
21.5											
22											
22.5											

Figure 10 Borehole log for location 21-136

Boreho	le ID: 2	1-137	TA: 21		Drill Depth:	19 ft				Total Pages: 1 of 1	
		e and D. T			Date: 9/11/	14		Background Radiological Screening			
		any: Precis		Equipment					21 dpm	β/γ: 1529 dpm	
Sampli	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split (Core-Barrel	Logge	ed By: A	. Stocker, A.	Tosh and S. Muggleton	
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID		OLOGICAL	_ DESCRIP	TION	LITHOLOGICAL UNIT		NOTES	
0				Construction							
0.5				Fill: Uncons							
1					se sand, de ck-orange vi		ed volcanic				
1.5				quartzite ar							
2				gravel)	•	J					
2.5											
3											
3.5											
4.5											
5											
5.5											
6											
6.5											
7											
7.5											
8											
8.5								_			
9								⋷			
9.5											
10											
10.5											
11											
11.5											
12											
12.5											
13											
13.5											
14											
14.5											
15								-			
15.5 16								1			
16.5											
17											
17.5											
18				Unit 3 of th	e Tschirege	Member o	f the	Qbt 3	Tuff contact	at 18 ft bgs	
18.5	100%	PID= 0.0	MD21-14-86042							erval 18.5–19 ft bgs	
19		α= 26			light purple	e, poorly to r	noderately			Ţ	
19.5		β/γ= 2020		well-welde	d, crystal-ric						
20				pumice-po	or.						
20.5											
21											
21.5											
22											
22.5											

Figure 11 Borehole log for location 21-137

Boreho	le ID: 2	1-138	TA: 21		Drill Depth:	14.5 ft				Total Pages: 1 of 1
		e and D. T			Date: 9/11/	14				diological Screening
		any: Precis		Equipment					21 dpm	β/γ: 1529 dpm
Sampli	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split	Core-Barrel	Logge	ed By: A	. Stocker, A.	Tosh and S. Muggleton
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID		OLOGICAL	_ DESCRIP	TION	LITHOLOGICAL UNIT		NOTES
0				Construction						
0.5					solidated sil					
1					se sand, de ck-orange v					
1.5					ck-orange v nd granite (ir					
2				gravel)	9 (.a.oaag za				
2.5				,						
3										
3.5										
4										
4.5										
5										
5.5 6										
6.5								≣		
7								ш.		
7.5										
8										
8.5										
9										
9.5										
10										
10.5										
11										
11.5										
12										
12.5										
13										
13.5	40001				e Tschirege	Member o	f the	Qbt 3		t at 13.5 ft bgs
14	100%		MD21-14-86043						Sample into	erval 14–14.5 ft bgs
14.5		α= 42			o light purple stal-rich, mi					
15		β/γ= 2210			or. Weather					
15.5				, aoc po			p. 556iii.			
16										
16.5 17										
17.5										
18										
18.5										
19										
19.5										
20										
20.5										
21										
21.5										
22										
22.5										

Figure 12 Borehole log for location 21-138

Boreho	le ID: 21	1-139	TA: 21		Drill Depth:	17.5 ft				Total Pages: 1 of 1
		e and D. To			Date: 9/11/	14				diological Screening
		any: Precis		Equipment					21 dpm	β/γ: 1529 dpm
Sampli	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split (Core-Barrel	Logge	ed By: A	A. Stocker, A.	Tosh and S. Muggleton
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID		OLOGICAL	. DESCRIP	TION	LITHOLOGICAL UNIT		NOTES
0				Constructi						
0.5					solidated sil					
1					se sand, de ck-orange vi					
1.5					nd granite (ir					
2				gravel)	3 (
2.5										
3										
3.5										
4										
4.5										
5										
5.5										
6										
6.5 7										
7.5										
8								≣		
8.5								ш		
9										
9.5										
10										
10.5										
11										
11.5										
12										
12.5										
13										
13.5								1		
14								1		
14.5								1		
15]		
15.5										
16										
16.5					e Tschirege	Member o	f the	Qbt 3		t at 16.5 ft bgs
17			MD21-14-86044						Sample int	erval 17–17.5 ft bgs
17.5		α= 42			o light purple					
18		β/γ= 2240			stal-rich, mi	nor mafics	and			
18.5				pumice-po	ur.					
19										
19.5										
20										
20.5										
21										
21.5										
22										
22.5										

Figure 13 Borehole log for location 21-139

Boreho	le ID: 2	1-140	TA: 21		Drill Depth:	15.5 ft				Total Pages: 1 of 1
		e and D. T			Date: 9/11/	14				diological Screening
		any: Precis		Equipment					21 dpm	β/γ: 1529 dpm
Sampli	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split (Core-Barrel	Logge	ed By: A	A. Stocker, A.	Tosh and S. Muggleton
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID		OLOGICAL	_ DESCRIP	TION	LITHOLOGICAL UNIT		NOTES
0				Construction						
0.5					solidated sil			1		
1					se sand, de					
1.5					ck-orange v					
2					nd granite (ir	idicating ba	se-coarse			
2.5				gravel)						
3								1		
3.5								1		
4								1		
4.5								1		
5								1		
5.5										
6								1		
6.5								1 =		
7								₫		
7.5										
8								1		
8.5										
9										
9.5								1		
10										
10.5										
11								1		
11.5										
12										
12.5										
13								1		
13.5										
14				Unit 3 of th	e Tschirege	Member o	f the	Qbt 3	Tuff contact	t at 14 ft bgs
14.5				Bandelier 1						
15	100%	PID= 0.0	MD21-14-86045		o light purple	e, moderate	ly well-		Sample into	erval 15–15.5 ft bgs
15.5		α= 47			stal-rich, mi					
16		β/γ= 2770		pumice-po						
16.5										
17										
17.5										
18										
18.5										
19										
19.5										
20										
20.5										
21										
21.5										
22										
22.5										
22.0			l					<u> </u>	l	

Figure 14 Borehole log for location 21-140

Boreho	ole ID: 2	1-141	TA: 21		Drill Depth:	8.5 ft				Total Pages: 1 of 1
		e and D. T			Date: 9/11/	14				diological Screening
		any: Precis		Equipment: CME-75 h Brass Sleeve Lined Split Core-Barrel Log					21 dpm	β/γ: 1529 dpm
Sampli	ing Equi	ipment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split (Core-Barrel	Logge	ed By: A	A. Stocker, A.	Tosh and S. Muggleton
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID		OLOGICAL	_ DESCRIP	TION	LITHOLOGICAL UNIT		NOTES
0				Constructi						
0.5					solidated sil					
1					se sand, de ck-orange v					
1.5					nd granite (ir					
2				gravel)	J (3				
2.5										
3.5								₫		
4										
4.5										
5										
5.5										
6										
6.5								01.10	T "	
7 7.5				Bandelier	e Tschirege	Member o	t the	Qbt 3	Tuff contact	at / ft bgs
8	100%	PID= 0.0	MD21-14-86046		o light purple	noderate	lvwell-		Sample inte	erval 8–8.5 ft bgs
8.5	10070	α= 73	W.B.Z.1 11 000 10		stal-rich, mi				Campic inte	orvar o olo it bgo
9		β/γ= 2390		pumice-po	or.					
9.5										
10										
10.5										
11										
11.5										
12 12.5										
13										
13.5										
14										
14.5										
15			1	I						
15.5										
15.5 16										
15.5 16 16.5										
15.5 16 16.5 17										
15.5 16 16.5 17 17.5										
15.5 16 16.5 17										
15.5 16 16.5 17 17.5 18 18.5										
15.5 16 16.5 17 17.5 18 18.5 19										
15.5 16 16.5 17 17.5 18 18.5 19 19.5										
15.5 16 16.5 17 17.5 18 18.5 19 19.5 20										
15.5 16 16.5 17 17.5 18 18.5 19 19.5 20 20.5 21										
15.5 16 16.5 17 17.5 18 18.5 19 19.5 20 20.5 21 21.5										
15.5 16 16.5 17 17.5 18 18.5 19 19.5 20 20.5 21										

Figure 15 Borehole log for location 21-141

Boreho	le ID: 2	1-142	TA: 21		Drill Depth:	12.5 ft				Total Pages: 1 of 1
		e and D. T			Date: 9/11/	14				diological Screening
Drilling	Compa	any: Precis	sion	Equipment					21 dpm	β/γ: 1529 dpm
Sampli	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split	Core-Barrel	Logge	ed By: A	. Stocker, A.	Tosh and S. Muggleton
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID	ЦТН	OLOGICAL	_ DESCRIP	TION	LITHOLOGICAL UNIT		NOTES
0				Constructi						
0.5					solidated sil					
1					se sand, de ck-orange v					
1.5					id granite (ir					
2				gravel)	g (
2.5										
3 3.5										
4										
4.5										
5								_		
5.5								≣		
6										
6.5										
7										
7.5										
8 8.5										
9										
9.5										
10										
10.5										
11				Unit 3 of th	e Tschirege	Member o	f the	Qbt 3		t at 11 ft bgs
11.5			MD21-14-86047	Bandelier 1					Sample into	erval 11.5–12 ft bgs
12		α= 21			o light purple					
12.5		β/γ= 2670		crystai-rich	minor mafi	cs and pum	ice-poor.			
13										
13.5 14										
14.5										
15										
15.5										
16										
16.5										
17										
17.5 18										
18.5										
19										
19.5										
20										
20.5										
21										
21.5										
22										
22.5				l						

Figure 16 Borehole log for location 21-142

Boreho	le ID: 2	1-143	TA: 21		Drill Depth:	14 ft				Total Pages: 1 of 1
		e and D. T			Date: 9/11/	14				diological Screening
		any: Precis		Equipment					21 dpm	β/γ: 1529 dpm
Sampli	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split	Core-Barrel	Logge	ed By: A	. Stocker, A.	Tosh and S. Muggleton
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID		OLOGICAL	_ DESCRIP	TION	LITHOLOGICAL UNIT		NOTES
0				Constructi						
0.5					solidated sil					
1					se sand, de ck-orange v					
1.5					nd granite (ir					
2				gravel)	ia granite (ii	idicating bo	oc coarse			
2.5				J						
3										
3.5										
4										
4.5										
5										
5.5										
6								⋷		
6.5								_		
7										
7.5										
8										
8.5										
9 9.5										
10										
10.5										
11										
11.5										
12										
12.5										
13				Unit 3 of th	e Tschirege	Member o	f the	Qbt 3	Tuff contact	at 13 ft bgs
13.5	100%	PID= 0.0	MD21-14-86048							erval 13.5–14 ft bgs
14		α= 121		AFT: Gray	to light pur	ple, very w	ell-welded,			
14.5		β/γ= 2140		crystal-rich	n, minor ma	ifics and pu	ımice-poor.			
15										
15.5										
16										
16.5										
17										
17.5										
18										
18.5										
19										
19.5										
20										
20.5										
21										
21.5										
22										
22.5										

Figure 17 Borehole log for location 21-143

Boreho	le ID: 2	1-144	TA: 21		Drill Depth:	16.5 ft				Total Pages: 1 of 1
		e and D. To		Date: 9/12/14 Equipment: CME-75 gth Brass Sleeve Lined Split Core-Barrel Log						diological Screening
		any: Precis							22 dpm	β/γ: 1481 dpm
Sampli	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split (Core-Barrel	Logge	ed By: A	A. Stocker, A.	Tosh and S. Muggleton
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID		OLOGICAL	_ DESCRIP	PTION	LITHOLOGICAL UNIT		NOTES
0				Construction						
0.5				fine to coar	solidated sil se sand, de	ty pebble gr	avel with			
1										
1.5				(dacite, black-orange vitrophyre) and exotic quartzite and granite (indicating base-coarse						
2				gravel)						
2.5										
3.5										
4										
4.5										
5										
5.5										
6										
6.5										
7										
7.5								≣		
8										
8.5										
9										
9.5										
10										
10.5										
11										
11.5										
12										
12.5										
13										
13.5										
14 14.5										
15										
15.5				Unit 3 of th	e Tschirege	Member o	f the	Qbt 3	Tuff contact	t at 15.5 ft bgs
16	100%	PID= 0.0	MD21-14-86049	Bandelier 1						erval 16–16.5 ft bgs
16.5		α= 31		AFT: Gray to	light purple	e, moderate	ly well-			
17		β/γ= 2230			stal-rich, mi	nor mafics	and			
17.5				pumice-po	or.					
18										
18.5										
19										
19.5										
20										
20.5										
21										
21.5										
22										
22.5				<u> </u>						

Figure 18 Borehole log for location 21-144

Boreho	le ID: 21	I-145	TA: 21		Drill Depth:	13 ft				Total Pages: 1 of 1
		e and D. T			Date: 9/12/	14				diological Screening
		any: Precis		Equipment: CME-75					22 dpm	β/γ: 1481 dpm
Sampli	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split	Core-Barrel	Logge	ed By: /	A. Stocker, A.	Tosh and S. Muggleton
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID		OLOGICAI	_ DESCRIP	PTION	LITHOLOGICAL UNIT		NOTES
0				Constructi						
0.5					solidated sil					
1					se sana, ae ck-orange v		ed volcanic			
1.5					id granite (ir					
2				gravel)	3 (
2.5				,						
3										
3.5										
4										
4.5 5										
5.5										
6								≣		
6.5										
7										
7.5										
8										
8.5										
9										
9.5										
10										
10.5										
11										
11.5								01.10	T (.1.40.81
12 12.5	100%	PID= 0.0	MD21-14-86050	Bandelier	e Tschirege	Member o	t tne	Qbt 3		t at 12 ft bgs erval 12.5–13 ft bgs
13	100 /0	$\alpha = 47$	MD21-14-60050		o light purple	n moderate	lywall		Sample in	ervar 12.5–13 it bys
13.5		β/γ= 2010			stal-rich, mi		•			
14		p/y- 2010			or. Moderate					
14.5				present.			-			
15										
15.5										
16										
16.5										
17										
17.5										
18										
18.5										
19										
19.5										
20										
20.5 21										
21.5										
21.5										
22.5										
22.5										

Figure 19 Borehole log for location 21-145

Borehol	le ID: 2	1-146	TA: 21							Total Pages: 1 of 1
		e and D. T		Drill Depth: 9 ft Date: 9/12/14 Equipment: CME-75 th Brass Sleeve Lined Split Core-Barrel Li						diological Screening
		any: Precis				2			22 dpm	β/γ: 1481 dpm
Samplin	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split	Core-Barrel	Logge	ed By: A	A. Stocker, A.	Tosh and S. Muggleton
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID		OLOGICAL	_ DESCRIP	TION	LITHOLOGICAL UNIT		NOTES
0				Constructi				Fill		
0.5					solidated sil					
1				fine to coarse sand, detritus of mixed volcanio (dacite, black-orange vitrophyre) and exotic						
1.5				quartzite and granite (indicating base-coarse						
2.5				gravel)						
3										
3.5										
4										
4.5										
5										
5.5										
6										
6.5										
7.5										
8				Unit 3 of th	e Tschirege	Member o	f the	Qbt 3	Tuff contact	at 8 ft bas
8.5	100%	PID= 0.0	MD21-14-86051	Bandelier 1						erval 8.5–9 ft bgs
9		α= 274		AFT: Gray to	o light purple	e, moderate	ly well-		·	Ū
9.5		β/γ= 2430			stal-rich, mi	nor mafics	and			
10				pumice-po-	or.					
10.5				F						
11				F F -						
11.5										
11.5 12										
11.5										
11.5 12 12.5										
11.5 12 12.5 13										
11.5 12 12.5 13 13.5 14 14.5										
11.5 12 12.5 13 13.5 14 14.5										
11.5 12 12.5 13 13.5 14 14.5 15										
11.5 12 12.5 13 13.5 14 14.5 15 15.5										
11.5 12 12.5 13 13.5 14 14.5 15 15.5 16										
11.5 12 12.5 13 13.5 14 14.5 15 15.5										
11.5 12 12.5 13 13.5 14 14.5 15 15.5 16 16.5										
11.5 12 12.5 13 13.5 14 14.5 15 15.5 16 16.5 17 17.5 18										
11.5 12 12.5 13 13.5 14 14.5 15 15.5 16 16.5 17 17.5 18 18.5										
11.5 12 12.5 13 13.5 14 14.5 15 15.5 16 16.5 17 17.5 18 18.5 19										
11.5 12 12.5 13 13.5 14 14.5 15 15.5 16 16.5 17 17.5 18 18.5 19										
11.5 12 12.5 13 13.5 14 14.5 15 15.5 16 16.5 17 17.5 18 18.5 19 19.5 20 20.5										
11.5 12 12.5 13 13.5 14 14.5 15 15.5 16 16.5 17 17.5 18 18.5 19 19.5 20 20.5										
11.5 12 12.5 13 13.5 14 14.5 15 15.5 16 16.5 17 17.5 18 18.5 19 19.5 20 20.5										

Figure 20 Borehole log for location 21-146

Boreho	le ID: 2	1-147	TA: 21		Drill Depth:	12 ft				Total Pages: 1 of 1
		e and D. T			Date: 9/12/	14				diological Screening
		any: Precis		Equipment					22 dpm	β/γ: 1481 dpm
Sampli	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split	Core-Barrel	Logge	ed By: <i>F</i>	A. Stocker, A.	Tosh and S. Muggleton
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID			_ DESCRIP	TION	LITHOLOGICAL UNIT		NOTES
0				Constructi						
0.5						ty pebble gr				
1						tritus of mix itrophyre) ar				
1.5						ndicating ba				
2				gravel)		_				
2.5										
3.5										
4										
4.5										
5								≣		
5.5								L		
6										
6.5										
7										
7.5										
8 8.5										
9										
9.5										
10										
10.5										
11				Unit 3 of th	e Tschirege	Member o	f the	Qbt 3	Tuff contact	at 11 ft bgs
11.5	100%	PID= 0.0	MD21-14-86052	Bandelier 1	Γuff:				Sample into	erval 11.5–12 ft bgs
12		α= 31				e, moderate				
12.5		β/γ= 2150				nor mafics a e oxidized st				
13				present.	or. Moderate	e uxiuizeu si	airiiriy			
13.5 14										
14.5										
15										
15.5										
16										
16.5										
17										
17.5										
18										
18.5 19										
19										
20										
20.5										
21										
21.5										
22										
22.5										

Figure 21 Borehole log for location 21-147

Boreho	le ID: 2	1-148	TA: 21		Drill Depth:	15 ft				Total Pages: 1 of 1
		e and D. T			Date: 9/12/	14				adiological Screening
		any: Precis		Equipment		2 DI			22 dpm	β/γ: 1481 dpm
Sampli	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sieeve	Linea Split	Core-Barrel	Logge	еа ву: <i>F</i> Г	A. Stocker, A. I	Tosh and S. Muggleton
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross-alpha, -beta, -gamma (dpm)	SAMPLE ID			_ DESCRIP	TION	LITHOLOGICAL UNIT		NOTES
0				Construction						
0.5						ty pebble gr				
1						tritus of mix itrophyre) ar				
1.5						ndicating ba				
2				gravel)	•	Ū				
2.5										
3.5										
4										
4.5										
5										
5.5								1		
6								1		
6.5								∄		
7								ш.		
7.5										
8										
8.5										
9 9.5										
10										
10.5										
11										
11.5								1		
12										
12.5										
13										
13.5				11. 1/2 - 2.1		<u> </u>		01 / -	T " .	
14	100%	PID= 0.0	MD21-14-86053			Member o	T the	Qpt 3		t at 14 ft bgs erval 14.5–15 ft bgs
14.5 15	100%	$\alpha = 68$	IVID 2 1-14-00053			e, moderate	lv well-		Jample Int	ervar 14.5–15 ILDGS
15.5		α– 66 β/γ= 2210				nor mafics				
16		J.,				dized stainii				
16.5										
17										
17.5										
18										
18.5										
19										
19.5										
20										
20.5										
21.5										
22										
22.5										
			i .						ı	

Figure 22 Borehole log for location 21-148

Boreho	le ID: 2	1-149	TA: 21		Drill Depth:	10 ft				Total Pages: 1 of 1
		e and D. T			Date: 9/12/	14				adiological Screening
		any: Precis		Equipment		D			22 dpm	β/γ: 1481 dpm
Sampli	ng Equi	pment: 2.5	" ID 2.5' Length Br	ass Sleeve	Lined Split	Core-Barrel	Logge	ed By: <i>F</i>	A. Stocker, A.	Tosh and S. Muggleton
DEPTH (ft bgs)	RECOVERY (%)	FIELD SCREENING RESULTS: PID (ppm)/gross- alpha, -beta, -gamma (dpm)	SAMPLE ID		OLOGICAI	_ DESCRIF	PTION	LITHOLOGICAL UNIT		NOTES
0				Constructi						
0.5					solidated sil		ravel with ced volcanic			
1					ck-orange v					
1.5					nd granite (in					
2.5				gravel)						
3										
3.5										
4								≣		
4.5								╙		
5										
5.5										
6 6.5										
7										
7.5										
8										
8.5										
9					e Tschirege	Member o	f the	Qbt 3	Tuff contac	
9.5	100%	PID= 0.0 α= 68	MD21-14-86054	Bandelier					1	erval 9.5–10 ft bgs
10 10.5		α= 66 β/γ= 2160			o light purple stal-rich, mi					Duplicate MD21-14- ected at this location
11		p/ 2100		pumice-po						
11.5										
12										
12.5										
13										
13.5										
14 14.5										
15										
15.5										
16										
16.5										
17										
17.5										
18 18.5										
18.5										
19.5										
20										
20.5										
21										
21.5										
22										
22.5								<u> </u>		

Figure 23 Borehole log for location 21-149

Table 1
Samples Collected at MDA B during September 2014 and Corresponding Field-Screening Results

							m ^a)		p (e	<u> </u>	(E	ing
Field Sample ID	Location ID	Sample Depth (ft)	Media	Purpose	Collection Date	Fill/Tuff Contact (ft)	Alpha Field Screening Background (dpm ^a)	Alpha Field Screening (dpm)	Beta/Gamma Field Screening Background (dpm)	Beta/Gamma Field Screening (dpm)	PID⁵ Field Screening Background (ppm)	PID Field Screening (ppm)
MD21-14-86033	21-128	18.5–19.0	QBT3 ^c	REG ^d	9/9/2014	17.5	34	21	1484	1941	0	0.9
MD21-14-86034	21-129	20.5–21.0	QBT3	REG	9/9/2014	20	34	26	1484	1984	0	0
MD21-14-86035	21-130	17.5–18.0	QBT3	REG	9/9/2014	17	34	47	1484	2170	0	0.7
MD21-14-86036	21-131	8.5–9.0	QBT3	REG	9/10/2014	8	29	52	1598	2030	0	0.1
MD21-14-86037	21-132	16.5–17.0	QBT3	REG	9/10/2014	16	29	21	1598	2100	0	0.1
MD21-14-86038	21-133	20.0–20.5	QBT3	REG	9/10/2014	19.5	29	21	1598	1920	0	0
MD21-14-86039	21-134	20.5–21.0	QBT3	REG	9/10/2014	20	29	57	1598	2210	0	0
MD21-14-86040	21-135	26.0–26.5	QBT3	REG	9/10/2014	25.5	29	57	1598	2110	0	0
MD21-14-86041	21-136	18.5–19.0	QBT3	REG	9/11/2014	18	21	26	1529	1997	0	0
MD21-14-86042	21-137	18.5–19.0	QBT3	REG	9/11/2014	18	21	26	1529	2020	0	0
MD21-14-86043	21-138	14.0–14.5	QBT3	REG	9/11/2014	13.5	21	42	1529	2210	0	0.1
MD21-14-86044	21-139	17.0–17.5	QBT3	REG	9/11/2014	16.5	21	42	1529	2040	0	0
MD21-14-86045	21-140	15.0–15.5	QBT3	REG	9/11/2014	14	21	47	1529	2770	0	0
MD21-14-86046	21-141	8.0–8.5	QBT3	REG	9/11/2014	7	21	73	1529	2390	0	0
MD21-14-86047	21-142	11.5–12.0	QBT3	REG	9/11/2014	11	21	21	1529	2670	0	0
MD21-14-86048	21-143	13.5–14.0	QBT3	REG	9/11/2014	13	21	121	1529	2140	0	0
MD21-14-86049	21-144	16–16.5	QBT3	REG	9/12/2014	15.5	22	31	1481	2230	0	0
MD21-14-86050	21-145	12.5–13.0	QBT3	REG	9/12/2014	12	22	47	1481	2010	0	0
MD21-14-86051	21-146	8.5–9.0	QBT3	REG	9/12/2014	8	22	274	1481	2430	0	0
MD21-14-86052	21-147	11.5–12.0	QBT3	REG	9/12/2014	11	22	31	1481	2150	0	0
MD21-14-86053	21-148	14.5–15.0	QBT3	REG	9/12/2014	14	22	68	1481	2210	0	0
MD21-14-86054	21-149	9.5–10.0	QBT3	REG	9/12/2014	9	22	68	1481	2160	0	0

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Table 1 (continued)

Field Sample ID	Location ID	Sample Depth (ft)	Media	Purpose	Collection Date	Fill/Tuff Contact (ft)	Alpha Field Screening Background (dpm ^a)	Alpha Field Screening (dpm)	Beta/Gamma Field Screening Background (dpm)	Beta/Gamma Field Screening (dpm)	PID ^b Field Screening Background (ppm)	PID Field Screening (ppm)
MD21-14-86055	21-130	17.5–18.0	QBT3	FD ^e	9/9/2014	17	34	47	1484	2170	0	0.7
MD21-14-86056	21-149	9.5–10.0	QBT3	FD	9/12/2014	9	22	68	1481	2160	0	0
MD21-14-86057	n/a ^f	n/a	n/a	FTB ^g	9/11/2014	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MD21-14-86058	n/a	n/a	n/a	FTB	9/10/2014	n/a	n/a	n/a	n/a	n/a	n/a	n/a
MD21-14-87107	n/a	n/a	n/a	FTB	9/12/2014	n/a	n/a	n/a	n/a	n/a	n/a	n/a

^a dpm = Disintegrations per minute.

^b PID = Photoionization detector.

^c QBT3 = Tuff.

^d REG = Regular investigation sample.

e FD = Field duplicate.

f n/a = Not applicable.

^g FTB = Field trip blank.



Analytical Data