

Appendix H

Earthworks CQA Laboratory Test Results

Appendix H.1 – Grain Size Distribution and Atterberg Limits

Appendix H.2 – Compaction Testing

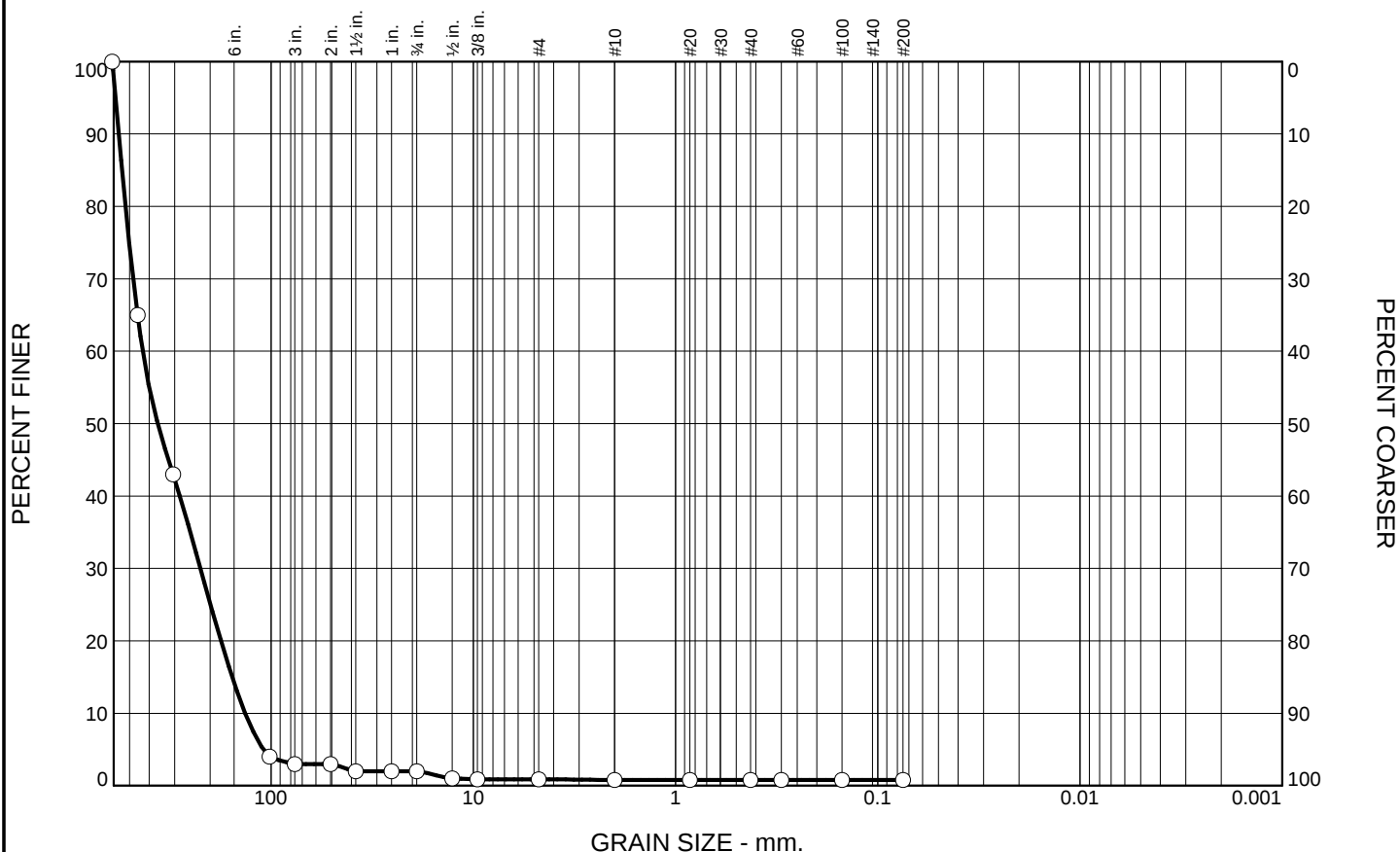
Appendix H.3 – Soil Liner Fill Permeability Test Results

Appendix H.1

Grain Size Distribution and Atterberg Limits

Structural Fill

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
97.0	1.0	1.1	0.1	0.0	0.0	0.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	65.0		
12"	43.0		
4"	4.0		
3"	3.0		
2"	3.0		
1.5"	2.0		
1"	2.0		
.75"	2.0		
.5"	1.0		
.375"	0.9		
#4	0.9		
#10	0.8		
#20	0.8		
#40	0.8		
#50	0.8		
#100	0.8		
#200	0.8	0.0 - 25.0	

* Structural Fill

Material Description

Brown silty gravel

Atterberg Limits

PL= NP

LL= NP

PI= NP

Classification

USCS= GM

AASHTO= A-2-4(0)

Remarks

Sample obtained from Phase 1 Bench DD STA DD9+00 at an elevation of 9,550.0'

Source of Sample: Structural Fill
Sample Number: SF-8-R

Date: 2/25/2014



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

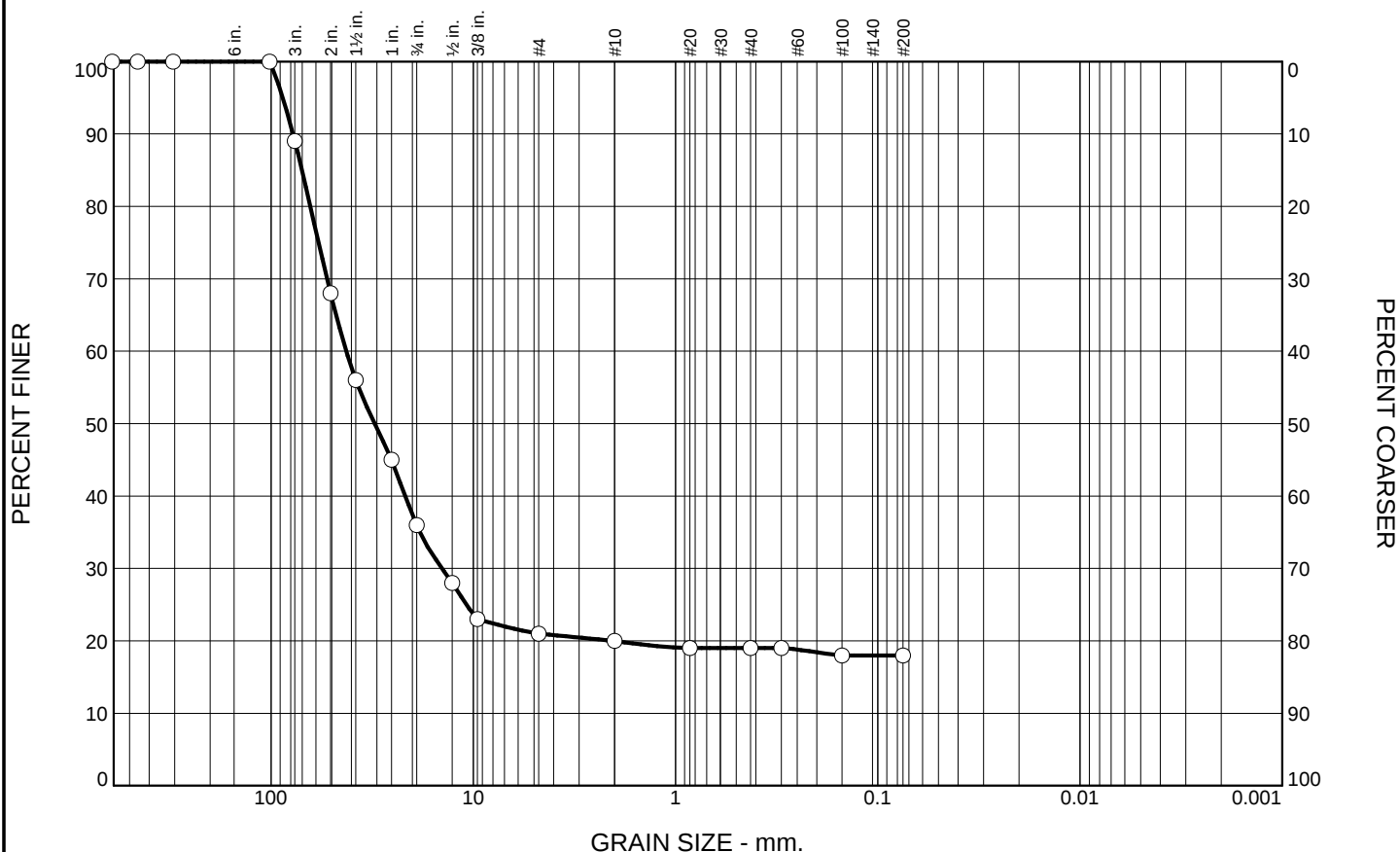
Project No: 74201125N0

Figure SF-8-R

Tested By: RM

Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
11.0	53.0	15.0	1.0	1.0	1.0	18.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	100.0		
4"	100.0		
3"	89.0		
2"	68.0		
1.5"	56.0		
1"	45.0		
.75"	36.0		
.5"	28.0		
.375"	23.0		
#4	21.0		
#10	20.0		
#20	19.0		
#40	19.0		
#50	19.0	0.0 - 25.0	
#100	18.0		
#200	18.0		

Material Description

Brown clayey gravel

Atterberg Limits

PL= 19 LL= 31 PI= 12

Classification

USCS= GC AASHTO= A-2-6(0)

Remarks

Sample obtained from Phase 1 Bench DD STA DD+00 at an elevation of 9,550.0'

* Structural Fill

Source of Sample: Structural Fill
Sample Number: SF-9-R

Date: 2/25/2014



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

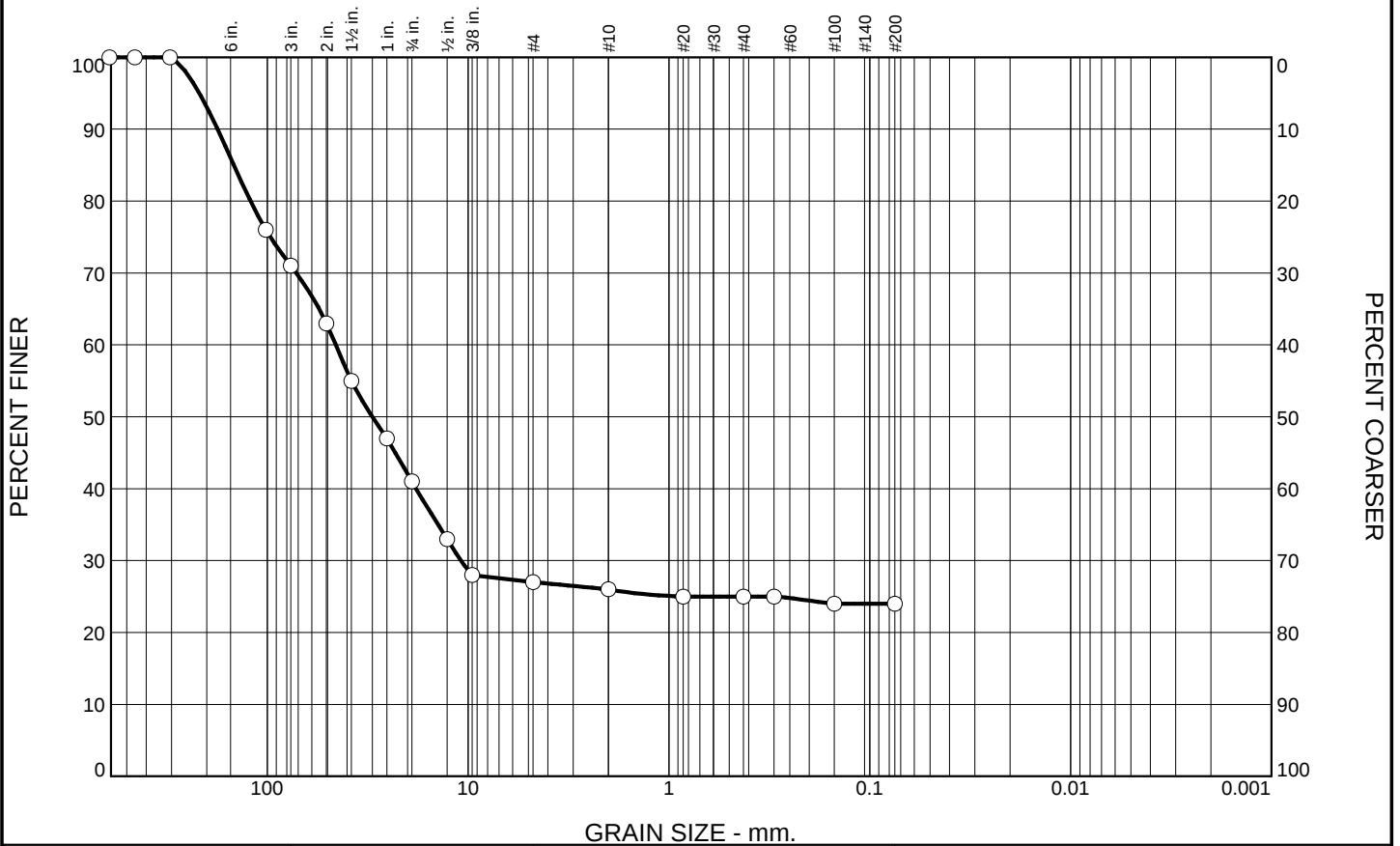
Project No: 74201125N0

Figure SF-9-R

Tested By: RM

Checked By: TB

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
29.0	30.0	14.0	1.0	1.0	1.0	24.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	100.0		
4"	76.0		
3"	71.0		
2"	63.0		
1.5"	55.0		
1"	47.0		
.75"	41.0		
.5"	33.0		
.375"	28.0		
#4	27.0		
#10	26.0		
#20	25.0		
#40	25.0		
#50	25.0		
#100	24.0		
#200	24.0	0.0 - 25.0	

* Structural Fill

Material Description

Brown clayey gravel

Atterberg Limits

PL= 19 LL= 32 PI= 13

Classification

USCS= GC AASHTO= A-2-6(1)

Remarks

Sample obtained from Phase 1 Bench DD STA DD10+00 at an elevation of 9,550.0'

Source of Sample: Structural Fill
Sample Number: SF-10-R

Date: 2/25/2014



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

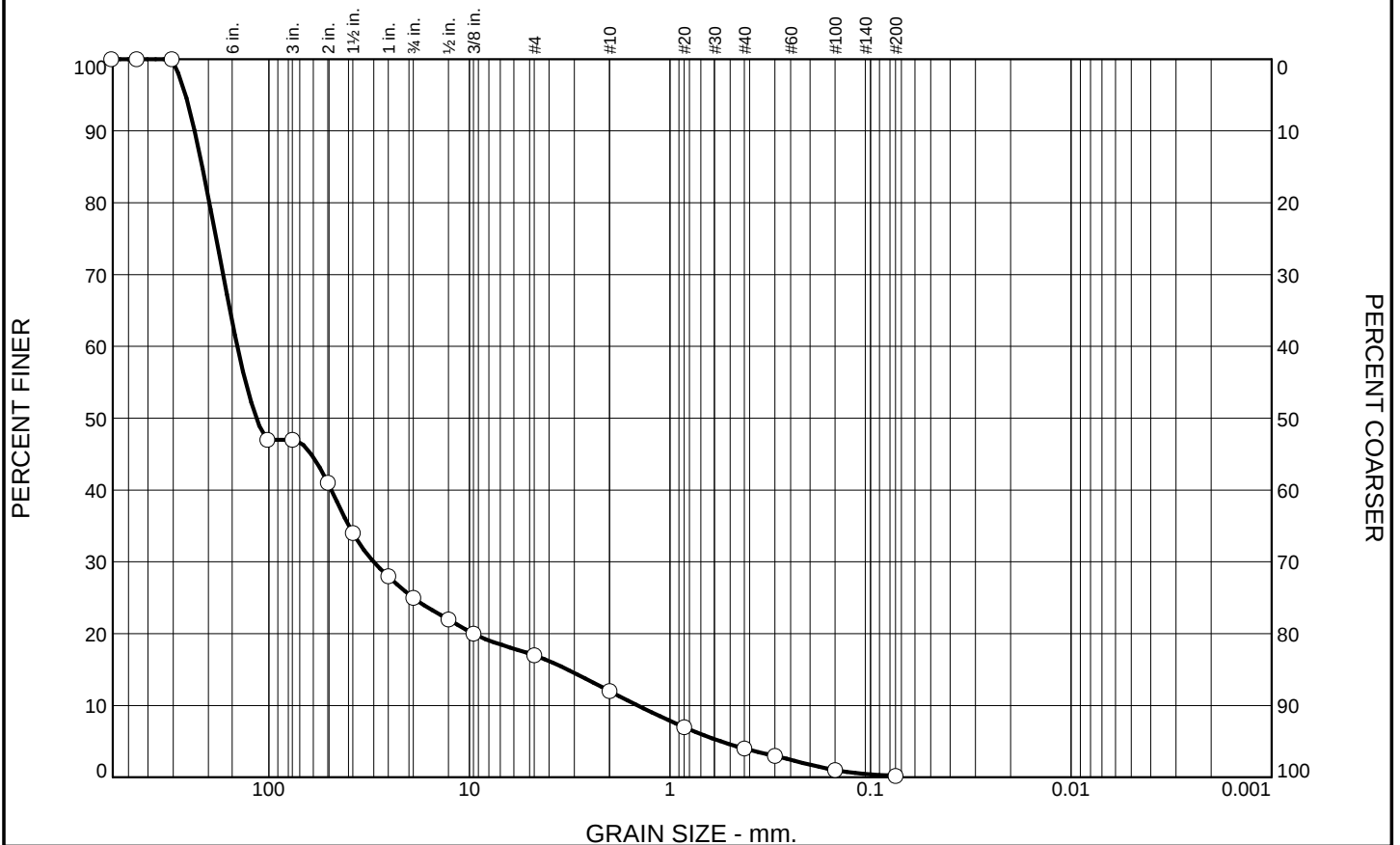
Project No: 74201125N0

Figure SF-10-R

Tested By: RM

Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
53.0	22.0	8.0	5.0	8.0	3.8	0.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	100.0		
4"	47.0		
3"	47.0		
2"	41.0		
1.5"	34.0		
1"	28.0		
.75"	25.0		
.5"	22.0		
.375"	20.0		
#4	17.0		
#10	12.0		
#20	7.0		
#40	4.0		
#50	3.0	0.0 - 25.0	
#100	1.0		
#200	0.2		

* Structural Fill

Material Description

Brown poorly graded gravel with sand

Atterberg Limits

PL= NP

LL= NP

PI= NP

Classification

USCS= GP

AASHTO= A-1-a

Remarks

Sample obtained from Phase 1 Bench C STA C4+00 at an elevation of 9,540.0'

Source of Sample: Structural Fill
Sample Number: SF-28-R

Date: 3/5/2014



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

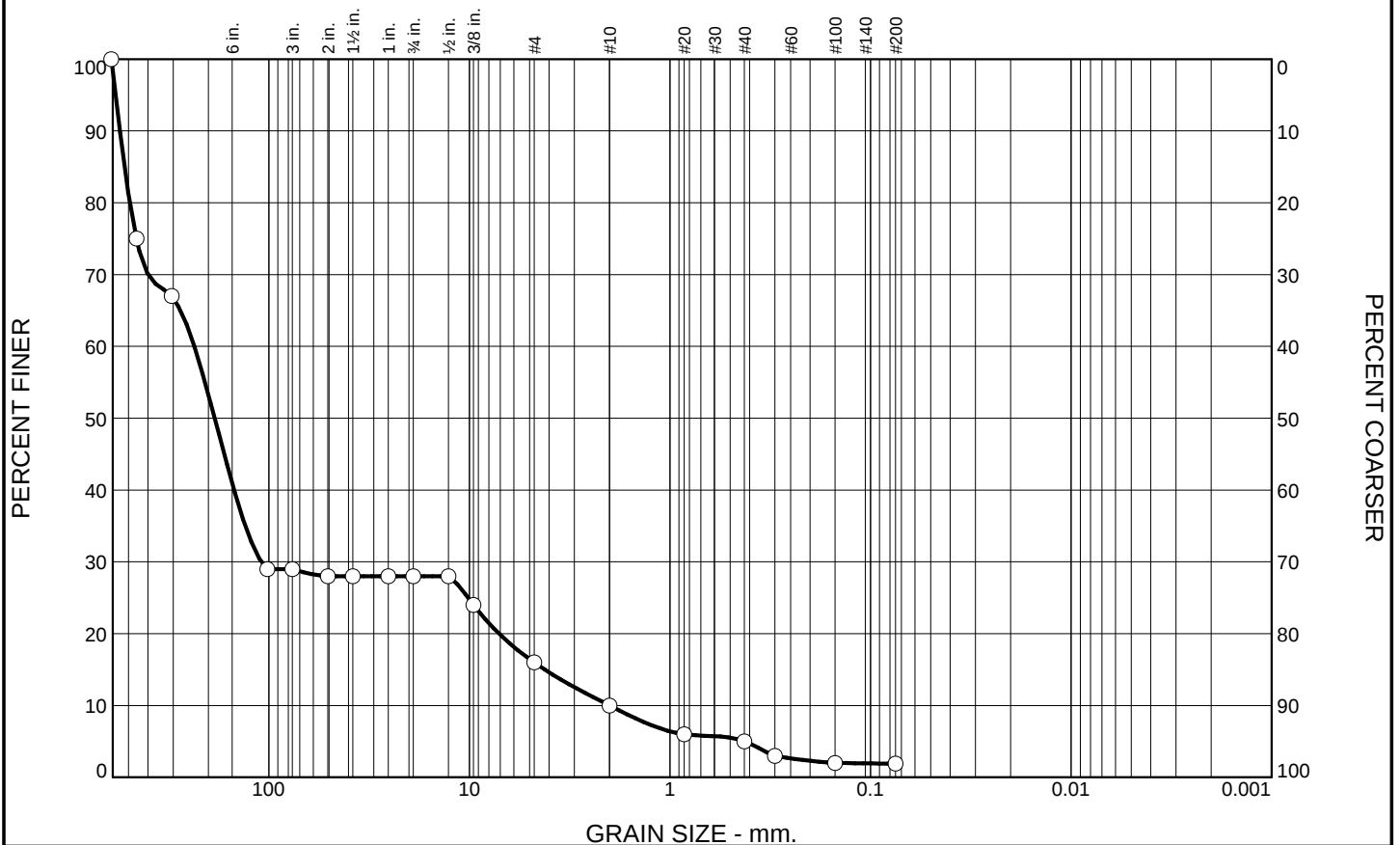
Project No: 74201125N0

Figure SF-28-R

Tested By: RM

Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
71.0	1.0	12.0	6.0	5.0	3.1	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	75.0		
12"	67.0		
4"	29.0		
3"	29.0		
2"	28.0		
1.5"	28.0		
1"	28.0		
.75"	28.0		
.5"	28.0		
0.375"	24.0		
#4	16.0		
#10	10.0		
#20	6.0		
#40	5.0		
#50	3.0	0.0 - 25.0	
#100	2.0		
#200	1.9		

Material Description

Light brown poorly graded sand with silt and gravel

Atterberg Limits

PL= NP LL= NP PI= NP

Classification

USCS= SP-SM AASHTO= A-1-a

Remarks

Sample obtained from Phase 1 Bench C STA C6+00 at an elevation of 9,546.0'

* Structural Fill

Source of Sample: Structural Fill
Sample Number: SF-30-R

Date: 3/6/2014



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

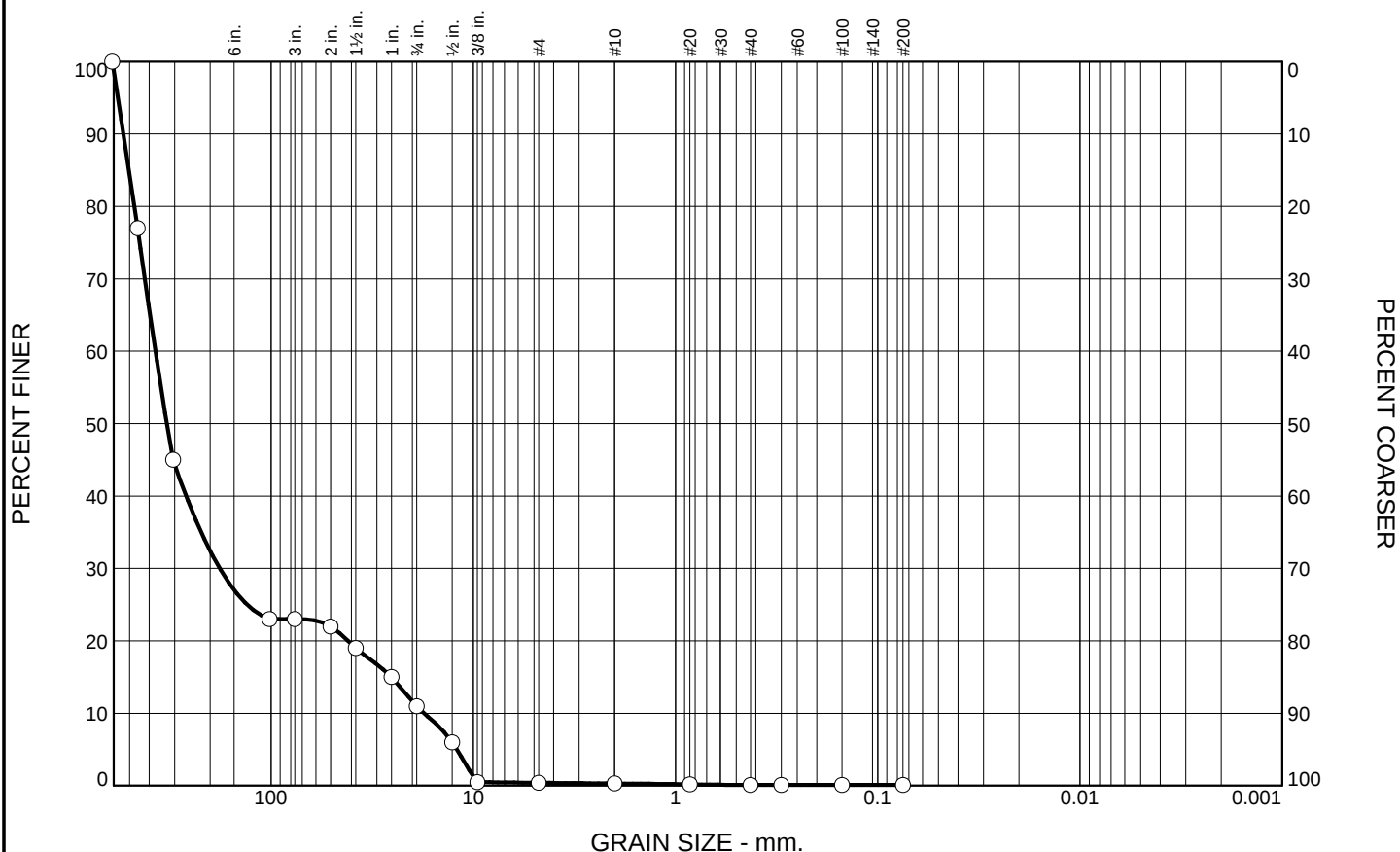
Project No: 74201125N0

Figure SF-30-R

Tested By: RM

Checked By: TB

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
77.0	12.0	10.6	0.1	0.2	0.0	0.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	77.0		
12"	45.0		
4"	23.0		
3"	23.0		
2"	22.0		
1.5"	19.0		
1"	15.0		
.75"	11.0		
.5"	6.0		
.375"	0.5		
#4	0.4		
#10	0.3		
#20	0.2		
#40	0.1	0.0 - 25.0	
#50	0.1		
#100	0.1		
#200	0.1		

* Structural Fill

Material Description

Light brown poorly graded gravel

Atterberg Limits

PL= NP LL= NP PI= NP

Classification

USCS= GP AASHTO= A-1-a

Remarks

Sample obtained from Phase 1 at approximate location
N 56,116.7 E 35,048.6 at an elevation of 9,450.1'

Source of Sample: Structural Fill
Sample Number: SF-96-R

Date: 9/24/2014



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

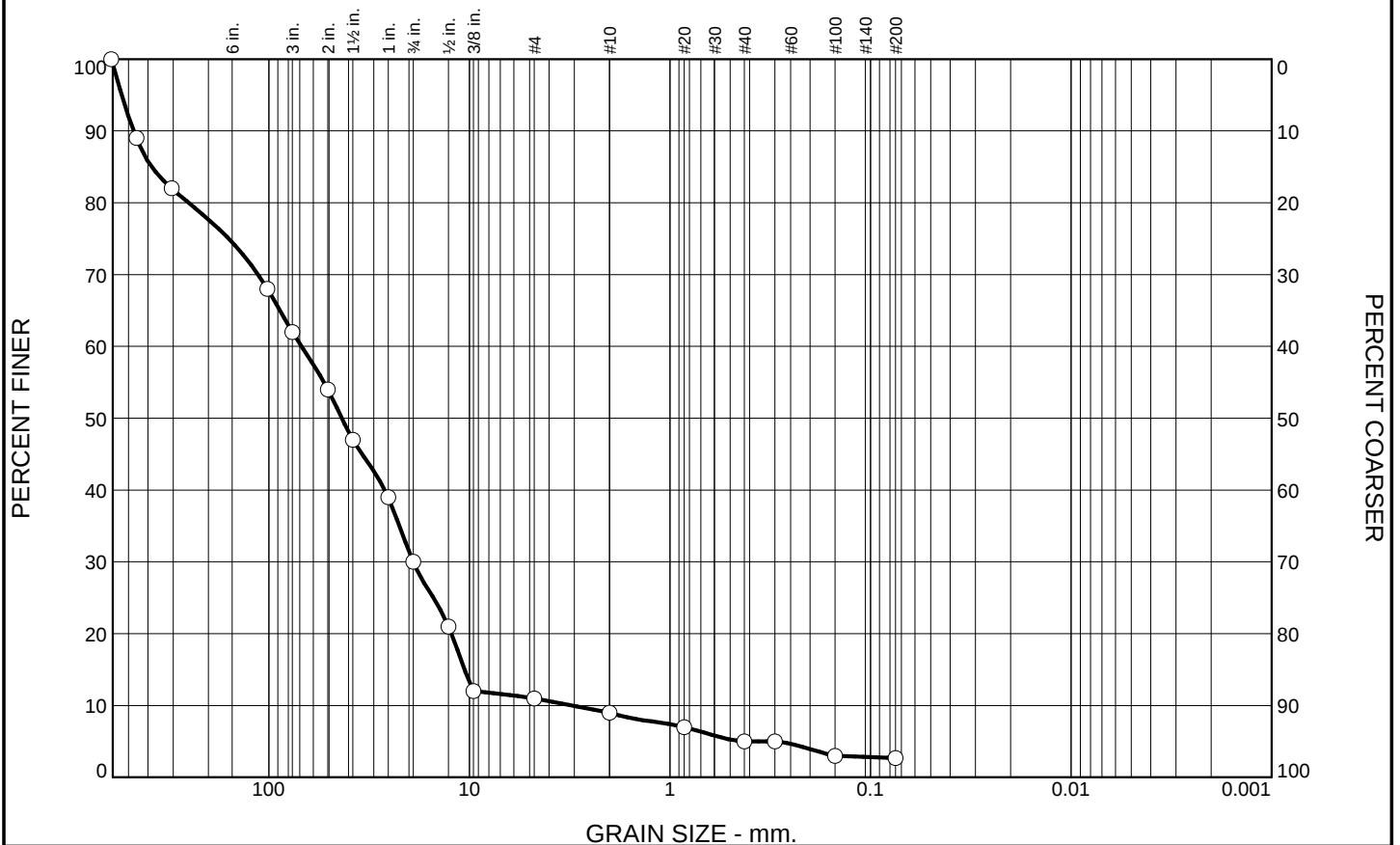
Project No: 74201125N0

Figure SF-96-R

Tested By: RM

Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
38.0	32.0	19.0	2.0	4.0	2.3	2.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	89.0		
12"	82.0		
4"	68.0		
3"	62.0		
2"	54.0		
1.5"	47.0		
1"	39.0		
.75"	30.0		
.5"	21.0		
.375"	12.0		
#4	11.0		
#10	9.0		
#20	7.0		
#40	5.0		
#50	5.0	0.0 - 25.0	
#100	3.0		
#200	2.7		

Material Description

Light brown well-graded gravel

Atterberg Limits

PL= NP

LL= NP

PI= NP

Classification

USCS= GW

AASHTO= A-1-a

Remarks

Sample obtained from Phase 1 at approximate location N 54,584.1 E 34,116.7 at an elevation of 9,452.9'

* Structural Fill

Source of Sample: Structural Fill
Sample Number: SF-124-R

Date: 3/12/2015



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company

Project: VLF Squaw Gulch

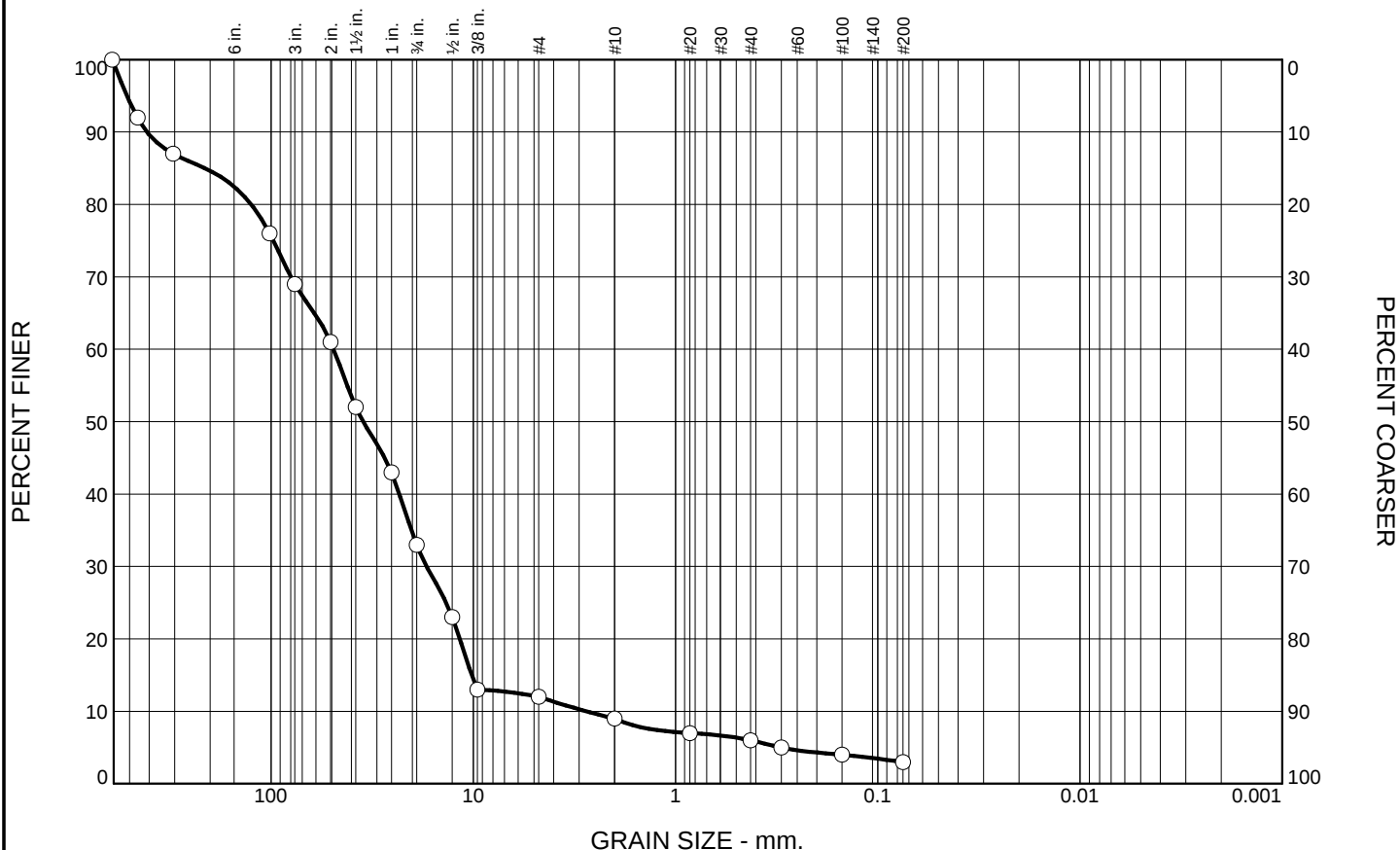
Project No: 74201125N0

Figure SF-124-R

Tested By: RM

Checked By: MM

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
31.0	36.0	21.0	3.0	3.0	3.0	3.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	92.0		
12"	87.0		
4"	76.0		
3"	69.0		
2"	61.0		
1.5"	52.0		
1"	43.0		
.75"	33.0		
.5"	23.0		
.375"	13.0		
#4	12.0		
#10	9.0		
#20	7.0		
#40	6.0		
#50	5.0	0.0 - 25.0	
#100	4.0		
#200	3.0		

Material Description

Light brown well-graded gravel

Atterberg Limits

PL= NP

LL= NP

PI= NP

Classification

USCS= GW

AASHTO= A-1-a

Remarks

Sample obtained from Phase 1 at approximate location N 54,465.1 E 34,274.3 at an elevation of 9,453.4'

* Structural Fill

Source of Sample: Structural Fill
Sample Number: SF-125-R

Date: 3/12/2015



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

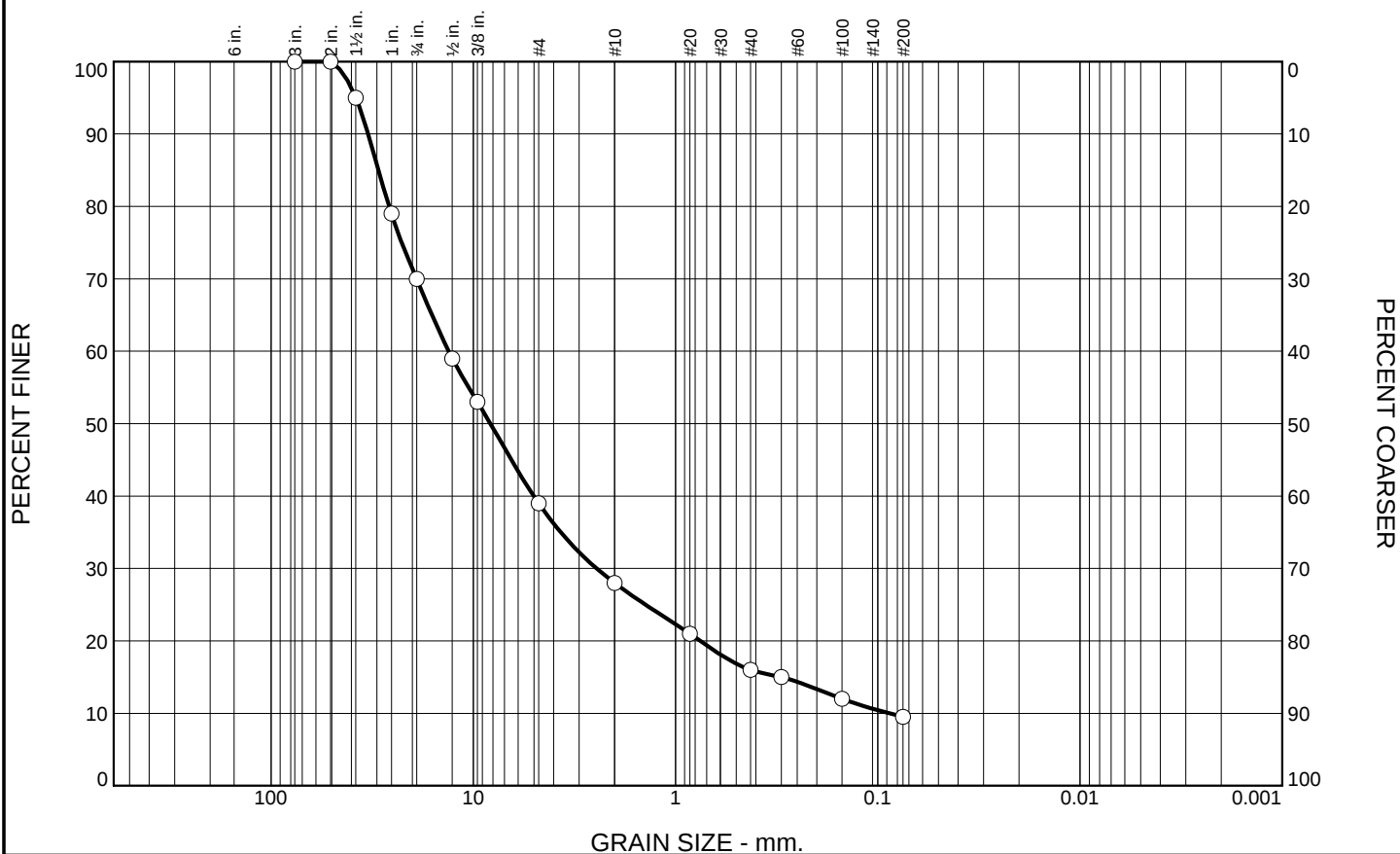
Figure SF-125-R

Tested By: RM

Checked By: MM

Select Structural Fill

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	30.0	31.0	11.0	12.0	6.5	9.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3.0"	100.0	100.0	
2.0"	100.0		
1.5"	95.0		
1.0"	79.0		
.75"	70.0		
.5"	59.0		
.375"	53.0		
#4	39.0		
#10	28.0		
#20	21.0		
#40	16.0		
#50	15.0		
#100	12.0		
#200	9.5		

* Select Structural Fill

Material Description

Brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NP PI= NP

Classification

USCS= GP-GM AASHTO= A-1-a

Remarks

Sample obtained from Phase 1 at approximate location N 55,738.9 E 35,840.8 at an elevation of 9,507.4'

Source of Sample: Select Structural Fill
Sample Number: 1SSF-1-R

Date: 8/6/2014



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

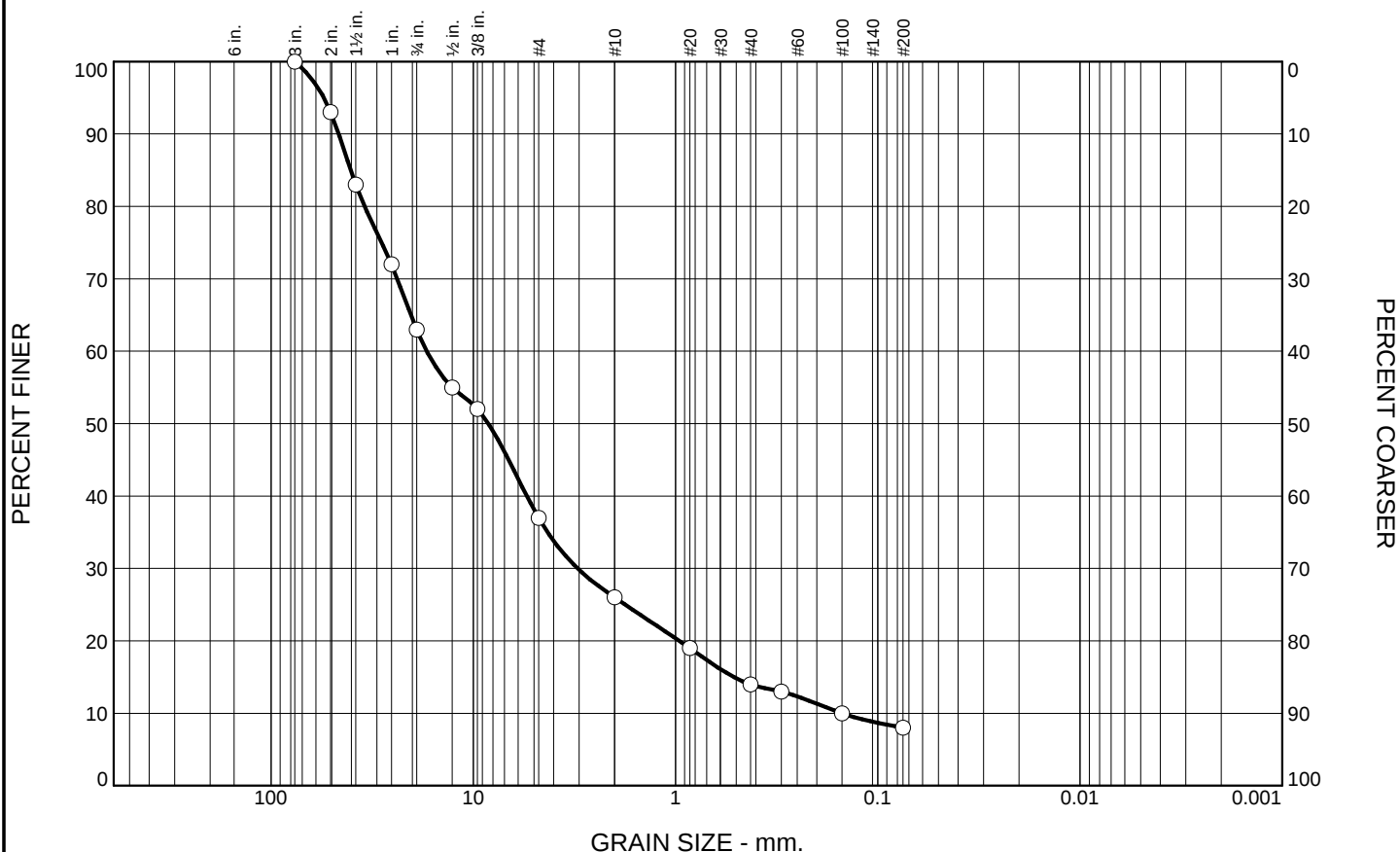
Project No: 74201125N0

Figure 1SSF-1-R

Tested By: RM

Checked By: TB

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	37.0	26.0	11.0	12.0	6.0	8.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3.0"	100.0	100.0	
2.0"	93.0		
1.5"	83.0		
1.0"	72.0		
.75"	63.0		
.5"	55.0		
.375"	52.0		
#4	37.0		
#10	26.0		
#20	19.0		
#40	14.0		
#50	13.0		
#100	10.0		
#200	8.0		

* Select Structural Fill

Material Description

Light brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NP PI= NP

Classification

USCS= GP-GM AASHTO= A-1-a

Remarks

Sample obtained from Phase 1 Tertiary Underdrain

Source of Sample: Select Structural Fill
Sample Number: 1SSF-2-R

Date: 10/8/2014



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

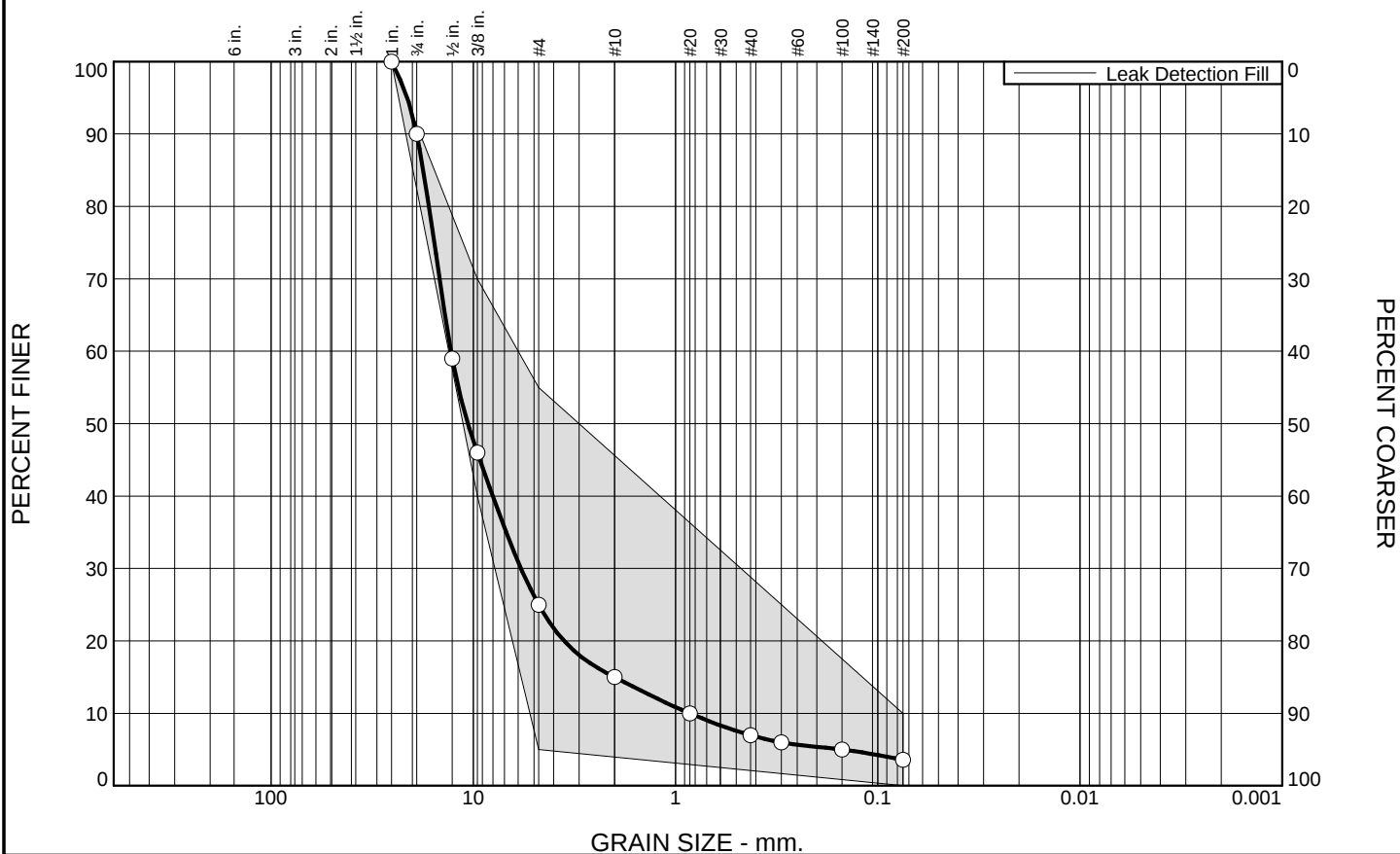
Figure 1SSF-2-R

Tested By: RM

Checked By: TB

Leak Detection Fill

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	10.0	65.0	10.0	8.0	3.4	3.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	90.0		
.5"	59.0		
.375"	46.0	40.0 - 70.0	
#4	25.0	5.0 - 55.0	
#10	15.0		
#20	10.0		
#40	7.0		
#50	6.0		
#100	5.0		
#200	3.6	0.0 - 10.0	

* Leak Detection Fill

Material Description

Grey poorly graded gravel with sand

Atterberg Limits

PL= NP

LL= NP

PI= NP

Classification

USCS= GP

AASHTO= A-1-a

Remarks

Sample obtained from Phase 1 at approximate location N 55,534.6 E 34,209.6 at an elevation of 9,525.6'

Source of Sample: Phase 1-Leak Detection Fill
Sample Number: 1LDF-2-R

Date: 4/9/2015



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company

Project: VLF Squaw Gulch

Project No: 74201125N0

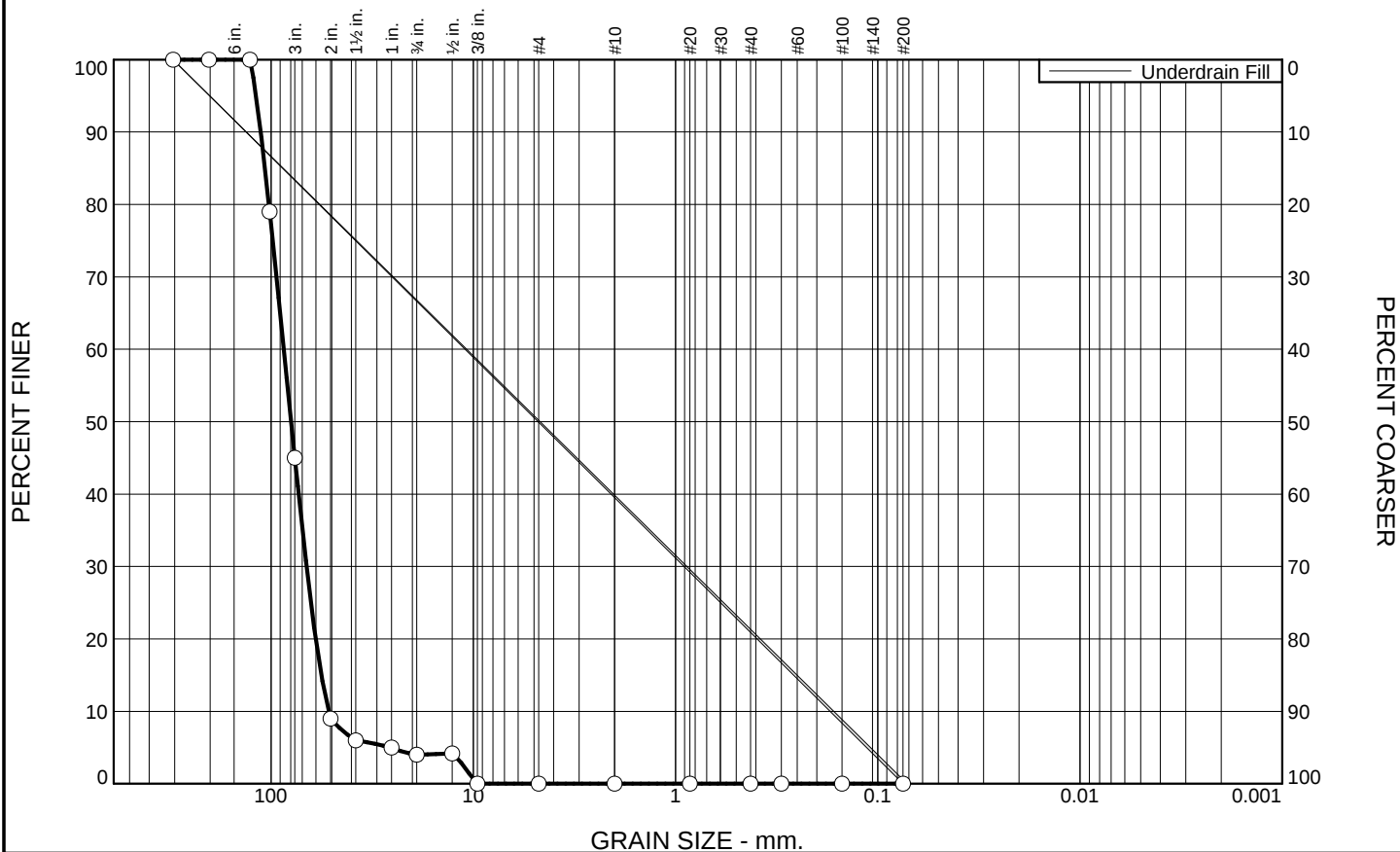
Figure 1LDF-2-R

Tested By: RM

Checked By: MM

Underdrain Fill

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
55.0	41.0	4.0	0.0	0.0	0.0	0.0	0.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
12"	100.0	100.0	
8"	100.0		
5"	100.0		
4"	79.0		
3"	45.0		
2"	9.0		
1.5"	6.0		
1"	5.0		
.75"	4.0		
.5"	4.2		
.375"	0.0		
#4	0.0		
#10	0.0		
#20	0.0		
#40	0.0		
#50	0.0	0.0 - 0.6	
#100	0.0		
#200	0.0		

* Underdrain Fill

Material Description

Light Brown poorly graded gravel

Atterberg Limits

PL= NP

LL= NP

PI= NP

Classification

USCS= GP

AASHTO= A-1-a

Remarks

Sample obtained from Phase 1 at approximate location N 55,733.9 E 35,749.1 at an elevation of 9,479.0'

Source of Sample: Underdrain Fill
Sample Number: 1UF-2-R

Date: 8/5/2014



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

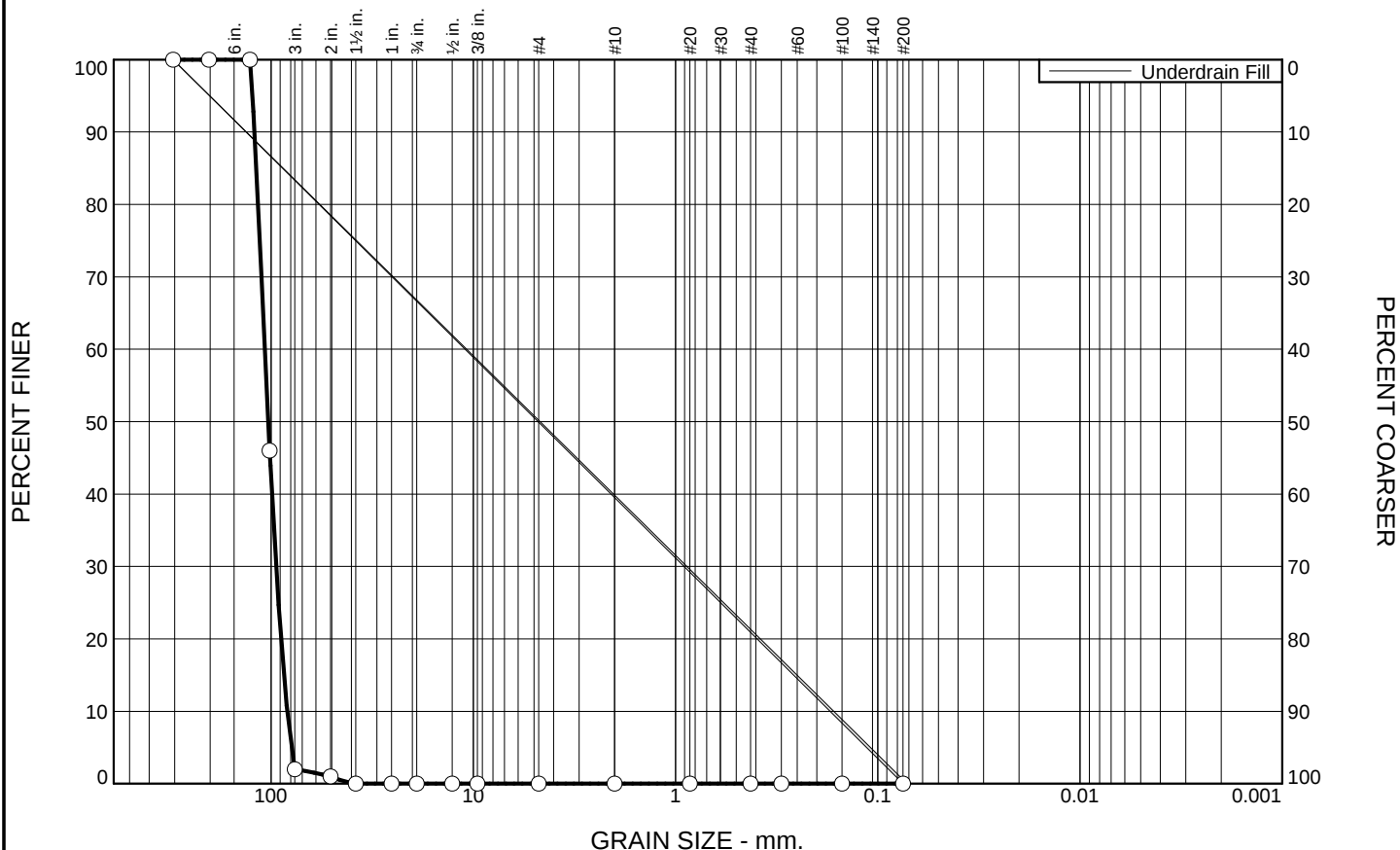
Project No: 74201125N0

Figure 1UF-2-R

Tested By: RM

Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
98.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
12"	100.0	100.0	
8"	100.0		
5"	100.0		
4"	46.0		
3"	2.0		
2"	1.0		
1.5"	0.0		
1"	0.0		
.75"	0.0		
.5"	0.0		
.375"	0.0	0.0 - 0.6	
#4	0.0		
#10	0.0		
#20	0.0		
#40	0.0		
#50	0.0		
#100	0.0		
#200	0.0		

* Underdrain Fill

Material Description

Light brown poorly graded gravel

Atterberg Limits

PL= NP

LL= NP

PI= NP

Classification

USCS= GP

AASHTO= A-1-a

Remarks

Sample obtained from Phase 1 Tertiary Underdrain

Source of Sample: Underdrain Fill
Sample Number: 1UF-3-R

Date: 10/8/2014



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

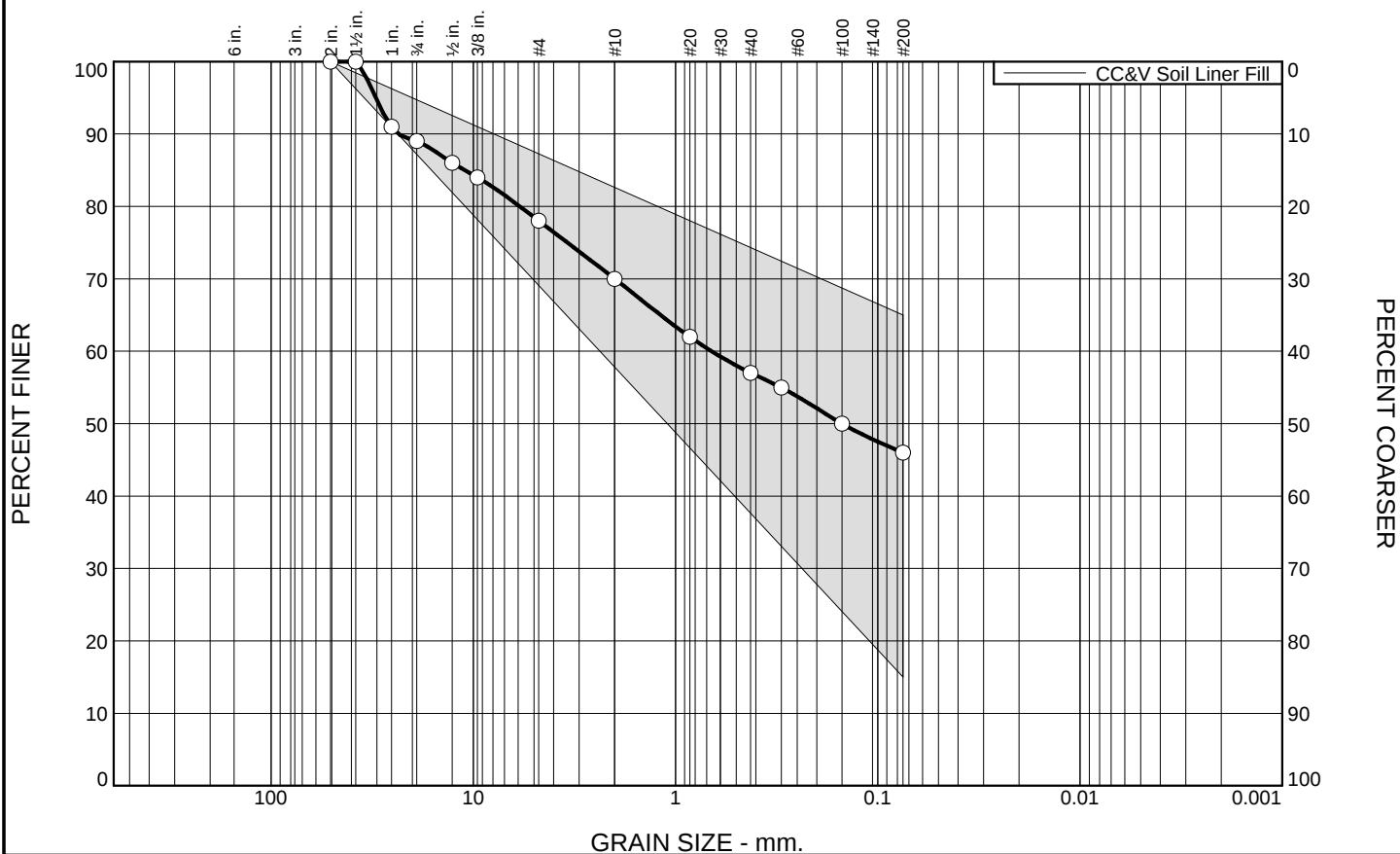
Figure 1UF-3-R

Tested By: RM

Checked By: TB

Soil Liner Fill

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	11.0	11.0	8.0	13.0	11.0	46.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	100.0		
1.0"	91.0		
.75"	89.0		
.5"	86.0		
.375"	84.0	15.0 - 65.0	
#4	78.0		
#10	70.0		
#20	62.0		
#40	57.0		
#50	55.0		
#100	50.0		
#200	46.0		

* CC&V Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 17 LL= 34 PI= 17

Classification

USCS= SC AASHTO= A-6(4)

Remarks

Sample obtained from Phase 1 at approximate location N 54,431.2 E 34,891.8 at an elevation of 9,530.3'

Source of Sample: Phase 1-Soil Liner Fill
Sample Number: 1SLF-1-R

Date: 9/27/2014



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

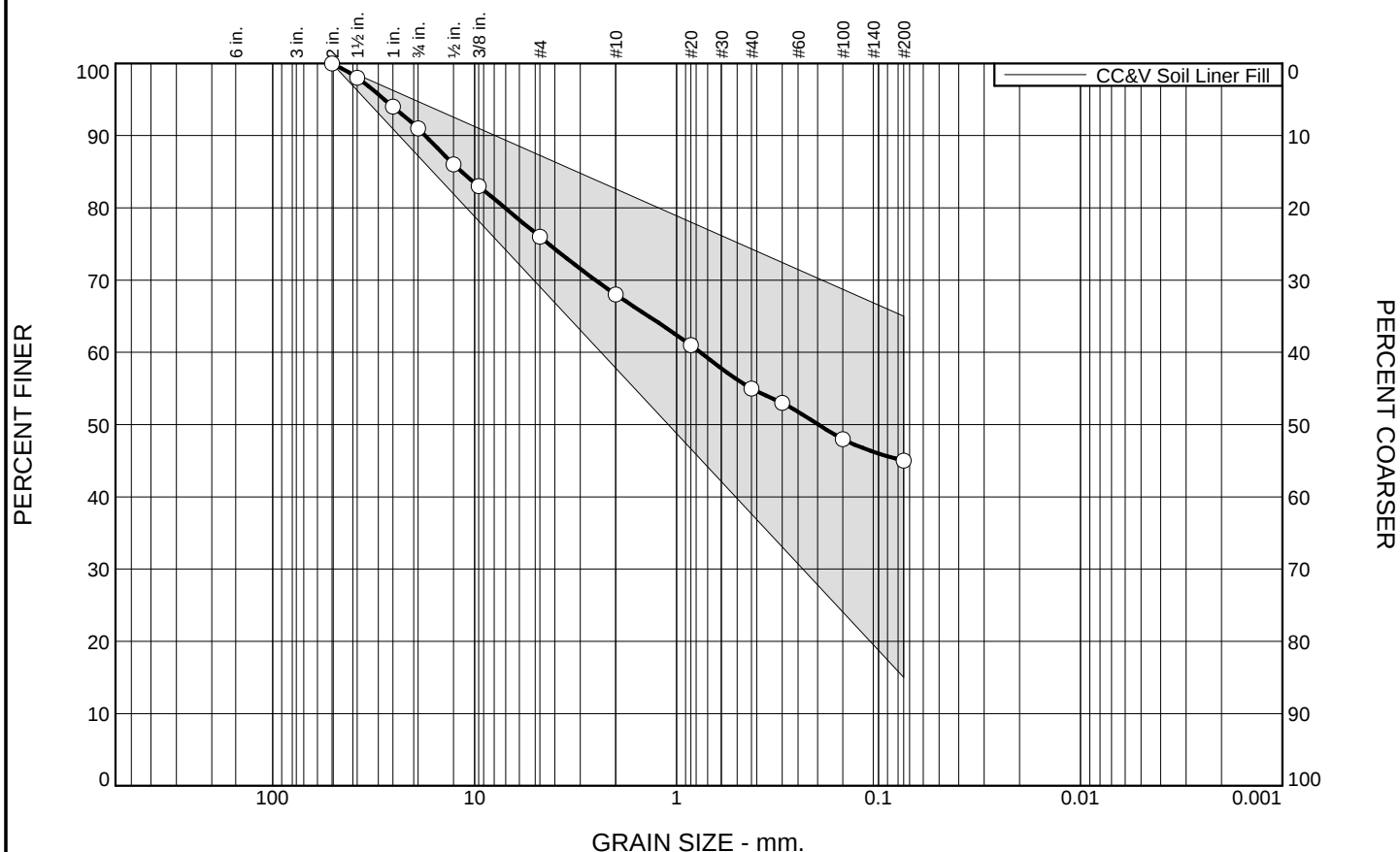
Project No: 74201125N0

Figure 1SLF-1-R

Tested By: RM

Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	9.0	15.0	8.0	13.0	10.0	45.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	98.0		
1.0"	94.0		
.75"	91.0		
.5"	86.0		
.375"	83.0		
#4	76.0		
#10	68.0		
#20	61.0		
#40	55.0		
#50	53.0	15.0 - 65.0	
#100	48.0		
#200	45.0		

* CC&V Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 18 LL= 36 PI= 18

Classification

USCS= SC AASHTO= A-6(4)

Remarks

Sample obtained from Phase 1 at approximate location N 55,117.1 E 35,281.7 at an elevation of 9,463.8'

Source of Sample: Phase 1-Soil Liner Fill
Sample Number: 1SLF-2-R

Date: 10/27/2014



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

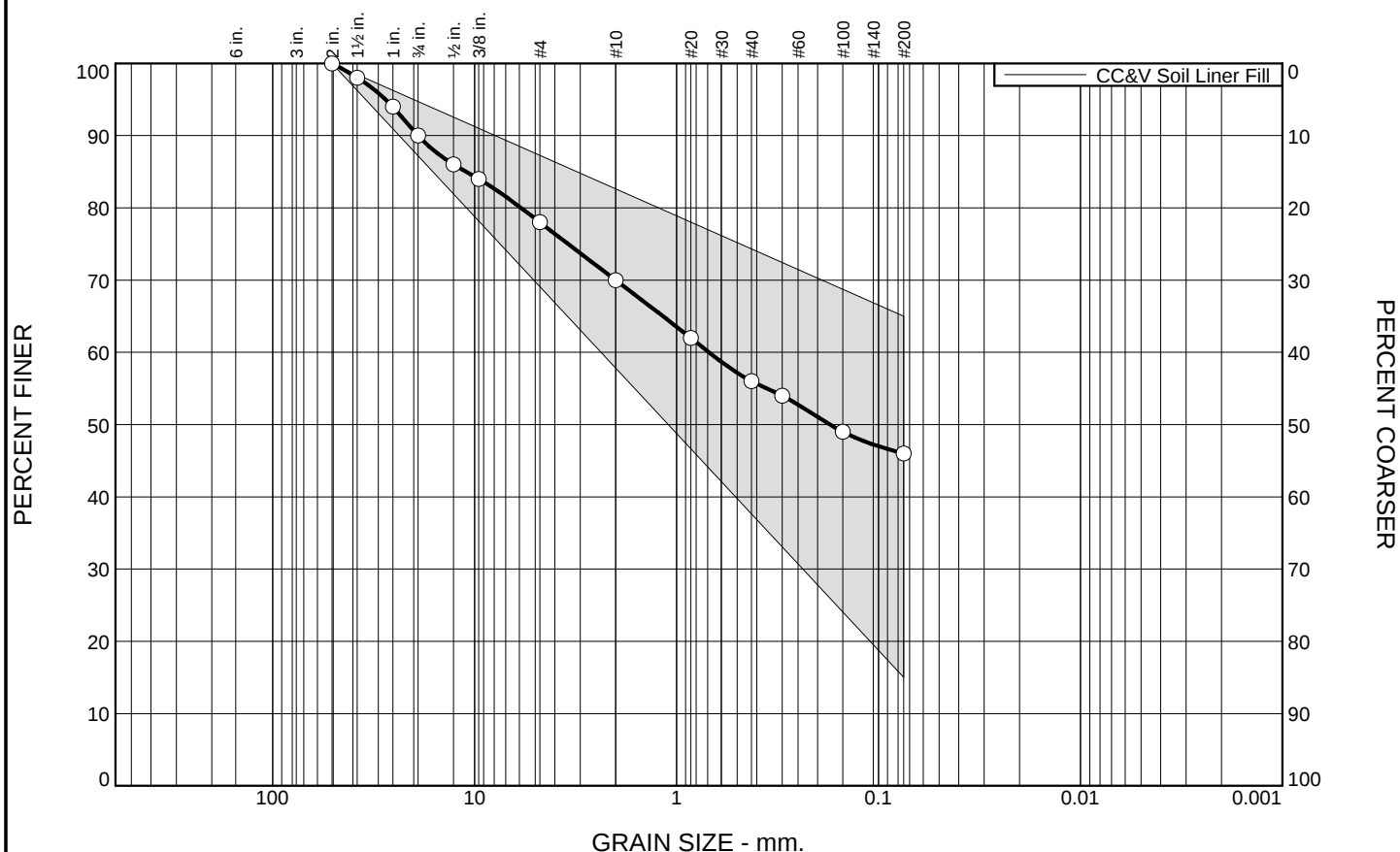
Project No: 74201125N0

Figure 1SLF-2-R

Tested By: RM

Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	10.0	12.0	8.0	14.0	10.0	46.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	98.0		
1.0"	94.0		
.75"	90.0		
.5"	86.0		
.375"	84.0		
#4	78.0	15.0 - 65.0	
#10	70.0		
#20	62.0		
#40	56.0		
#50	54.0		
#100	49.0		
#200	46.0		

* CC&V Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 18 LL= 33 PI= 15

Classification

USCS= SC AASHTO= A-6(3)

Remarks

Sample obtained from Phase 1 approximate location N 55,238.1 E 35,418.5 at an elevation of 9,481.4'

Source of Sample: Phase 1-Soil Liner Fill
Sample Number: 1SLF-3-R

Date: 10/27/2014



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

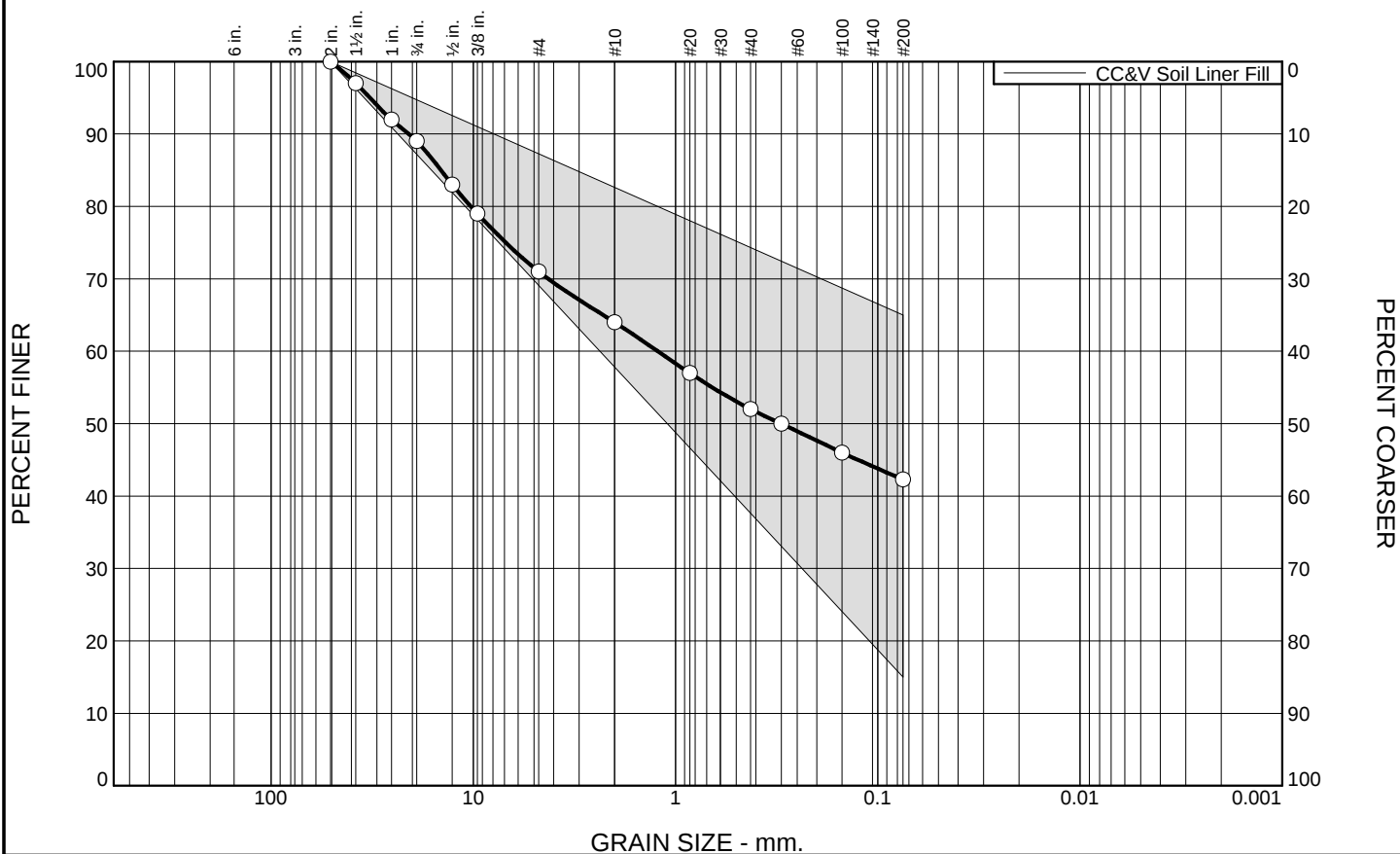
Project No: 74201125N0

Figure 1SLF-3-R

Tested By: RM

Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	11.0	18.0	7.0	12.0	9.7	42.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	97.0		
1.0"	92.0		
.75"	89.0		
.5"	83.0		
.375"	79.0		
#4	71.0		
#10	64.0		
#20	57.0		
#40	52.0		
#50	50.0	15.0 - 65.0	
#100	46.0		
#200	42.3		

* CC&V Soil Liner Fill

Material Description

Brown clayey gravel with sand

Atterberg Limits

PL= 18 LL= 34 PI= 16

Classification

USCS= GC AASHTO= A-6(3)

Remarks

Sample obtained from Phase 1 at approximate location N 55,253.7 E 34,273.1 at an elevation of 9,450.6'

Source of Sample: Phase 1-Soil Liner Fill
Sample Number: 1SLF-4-R

Date: 3/28/2015



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

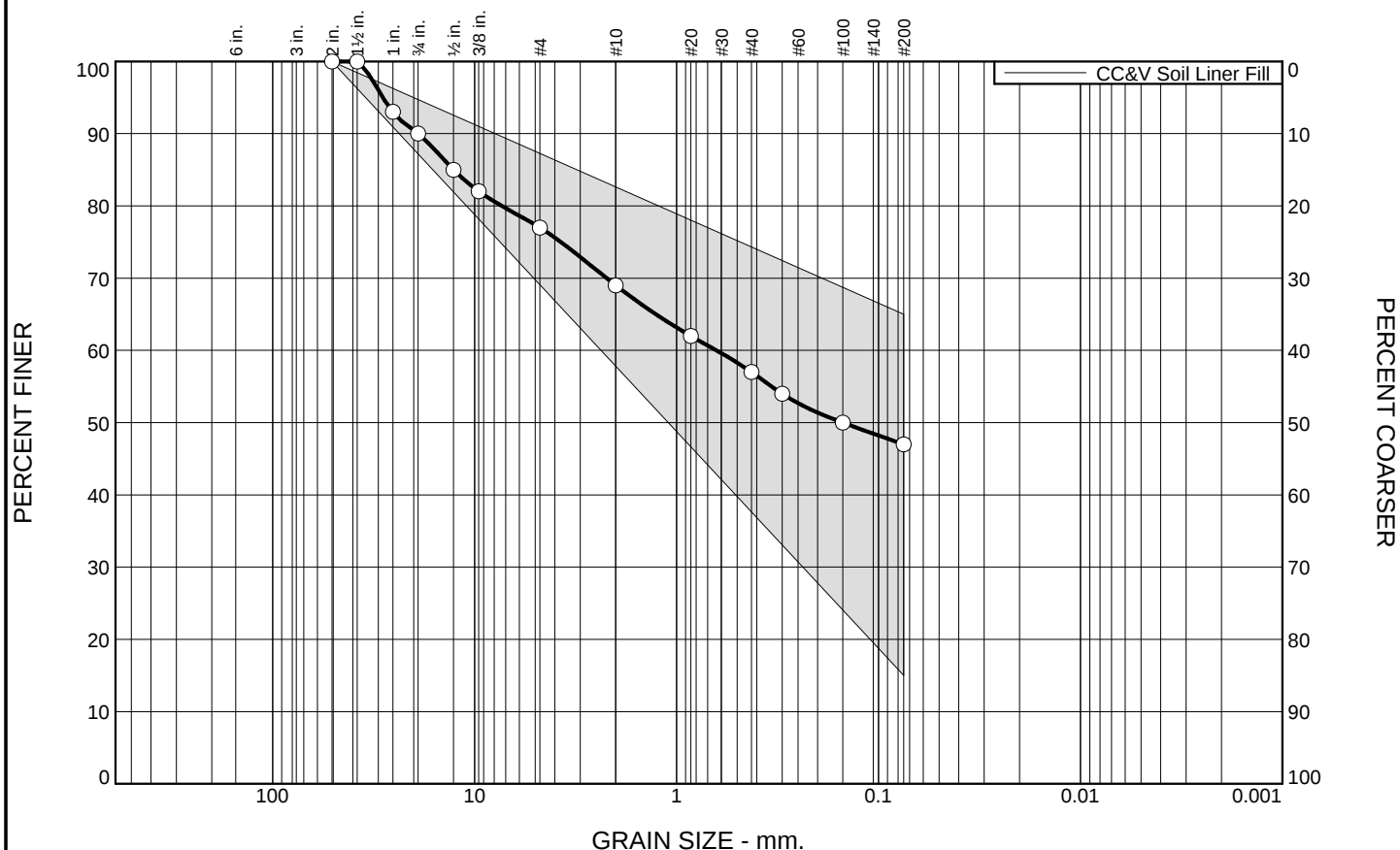
Project No: 74201125N0

Figure 1SLF-4-R

Tested By: RM

Checked By: MM

Particle Size Distribution Report



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	10.0	13.0	8.0	12.0	10.0	47.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	100.0		
1.0"	93.0		
.75"	90.0		
.5"	85.0		
.375"	82.0		
#4	77.0		
#10	69.0		
#20	62.0		
#40	57.0		
#50	54.0	15.0 - 65.0	
#100	50.0		
#200	47.0		

* CC&V Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 16 LL= 36 PI= 20

Classification

USCS= SC AASHTO= A-6(5)

Remarks

Sample obtained from Phase 1 at approximate location N 55,216.4 E 34,200.1 at an elevation of 9,463.5'

Source of Sample: Phase 1-Soil Liner Fill
Sample Number: 1SLF-5-R

Date: 4/14/2015



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

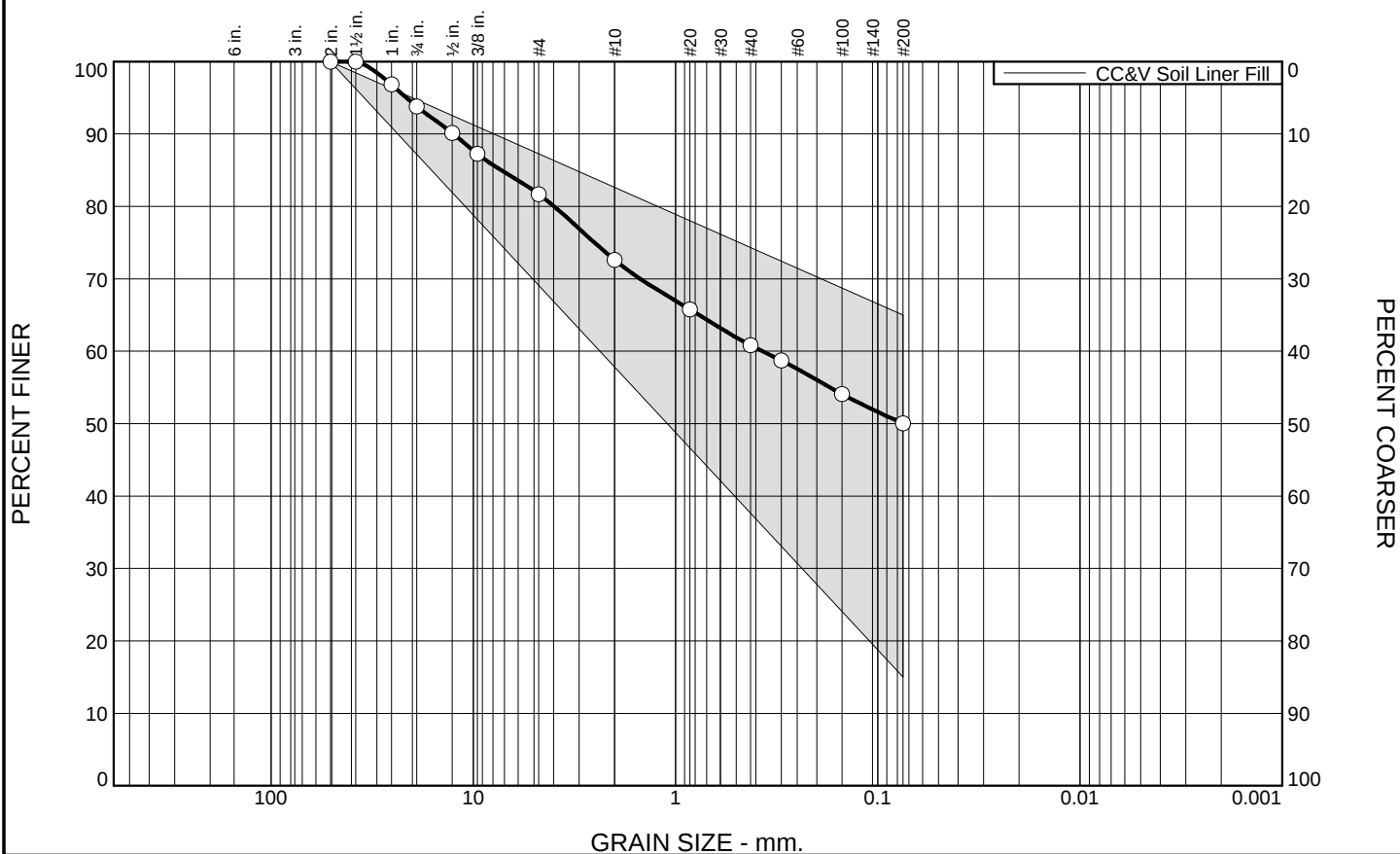
Project No: 74201125N0

Figure 1SLF-5-R

Tested By: RM

Checked By: MM

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	6.2	12.1	9.1	11.8	10.8	50.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0	100.0	
1.5"	100.0		
1.0"	96.8		
.75"	93.8		
.5"	90.1		
.375"	87.2		
#4	81.7		
#10	72.6		
#20	65.8		
#40	60.8		
#50	58.7	15.0 - 65.0	
#100	54.1		
#200	50.0		

Material Description

Brown sandy lean clay with gravel

Atterberg Limits

PL= 14 LL= 37 PI= 23

Classification

USCS= CL AASHTO= A-6(7)

Remarks

Sample obtained from Phase 1 at approximate location N 55,860.9 E 34,732.3 at an elevation of 9,497.2'

* CC&V Soil Liner Fill

Source of Sample: Phase 1-Soil Liner Fill
Sample Number: 1SLF-9-R

Date: 5/30/15



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

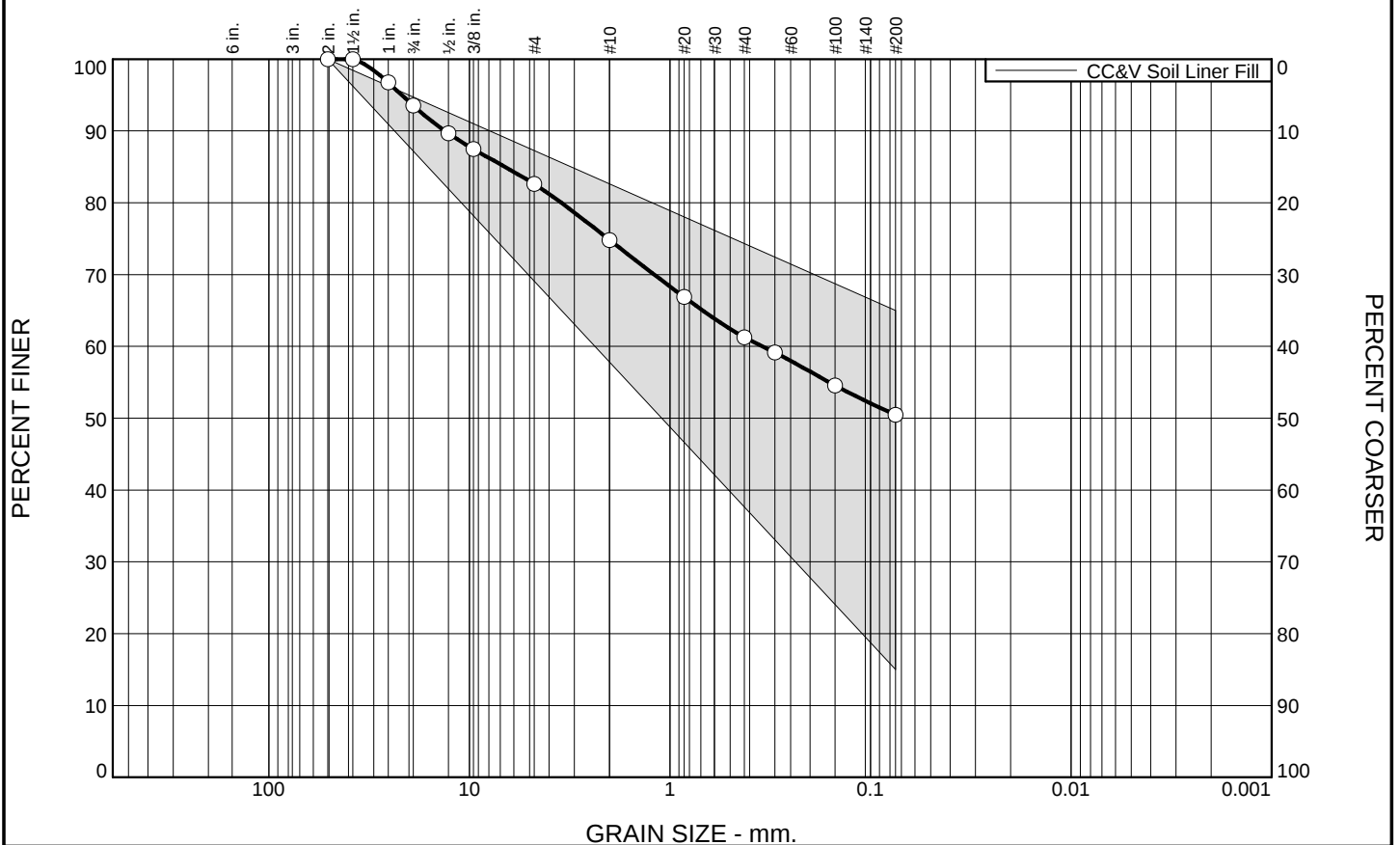
Project No: 74201125N0

Figure 1SLF-9-R

Tested By: EL

Checked By: BR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	6.5	10.9	7.8	13.5	10.8	50.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0	100.0	
1.5"	100.0		
1.0"	96.7		
.75"	93.5		
.5"	89.7		
.375"	87.5		
#4	82.6		
#10	74.8		
#20	66.9		
#40	61.3		
#50	59.2	15.0 - 65.0	
#100	54.6		
#200	50.5		

Material Description

Brown sandy lean clay with gravel

Atterberg Limits

PL= 15 LL= 36 PI= 21

Classification

USCS= CL AASHTO= A-6(7)

Remarks

Sample obtained from Phase 1 at approximate location N 55,365.3 E 35,454.4 at an elevation of 9,458.3'

* CC&V Soil Liner Fill

Source of Sample: Phase 1-Soil Liner Fill
Sample Number: 1SLF-11-R

Date: 6/9/15



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company

Project: VLF Squaw Gulch

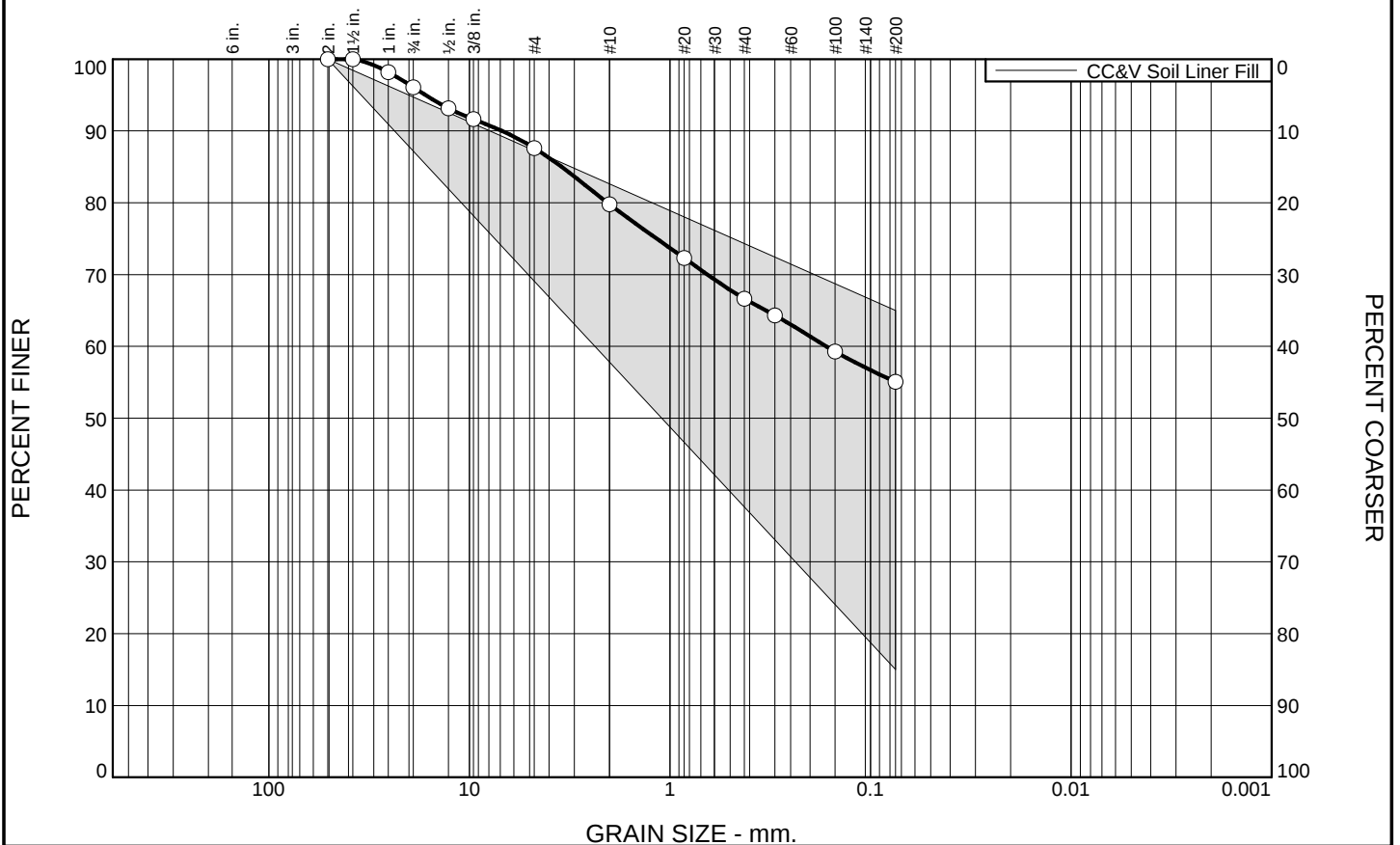
Project No: 74201125N0

Figure ISLF-11-R

Tested By: EL

Checked By: BR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	3.9	8.5	7.8	13.2	11.5	55.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0	100.0	
1.5"	100.0		
1.0"	98.2		
.75"	96.1		
.5"	93.1		
.375"	91.6		
#4	87.6		
#10	79.8		
#20	72.3		
#40	66.6		
#50	64.3	15.0 - 65.0	
#100	59.3		
#200	55.1		

Material Description

PL= 15 **Atterberg Limits** LL= 36 PI= 21

USCS= CL **Classification** AASHTO= A-6(8)

Remarks
Sample obtained from Phase 1 at approximate location
N 56,221.0 E 34,983.3 at an elevation of 9,495.9'

* CC&V Soil Liner Fill

Source of Sample: Phase 1-Soil Liner Fill
Sample Number: 1SLF-13-R

Date: 6/23/15



Amec Foster Wheeler

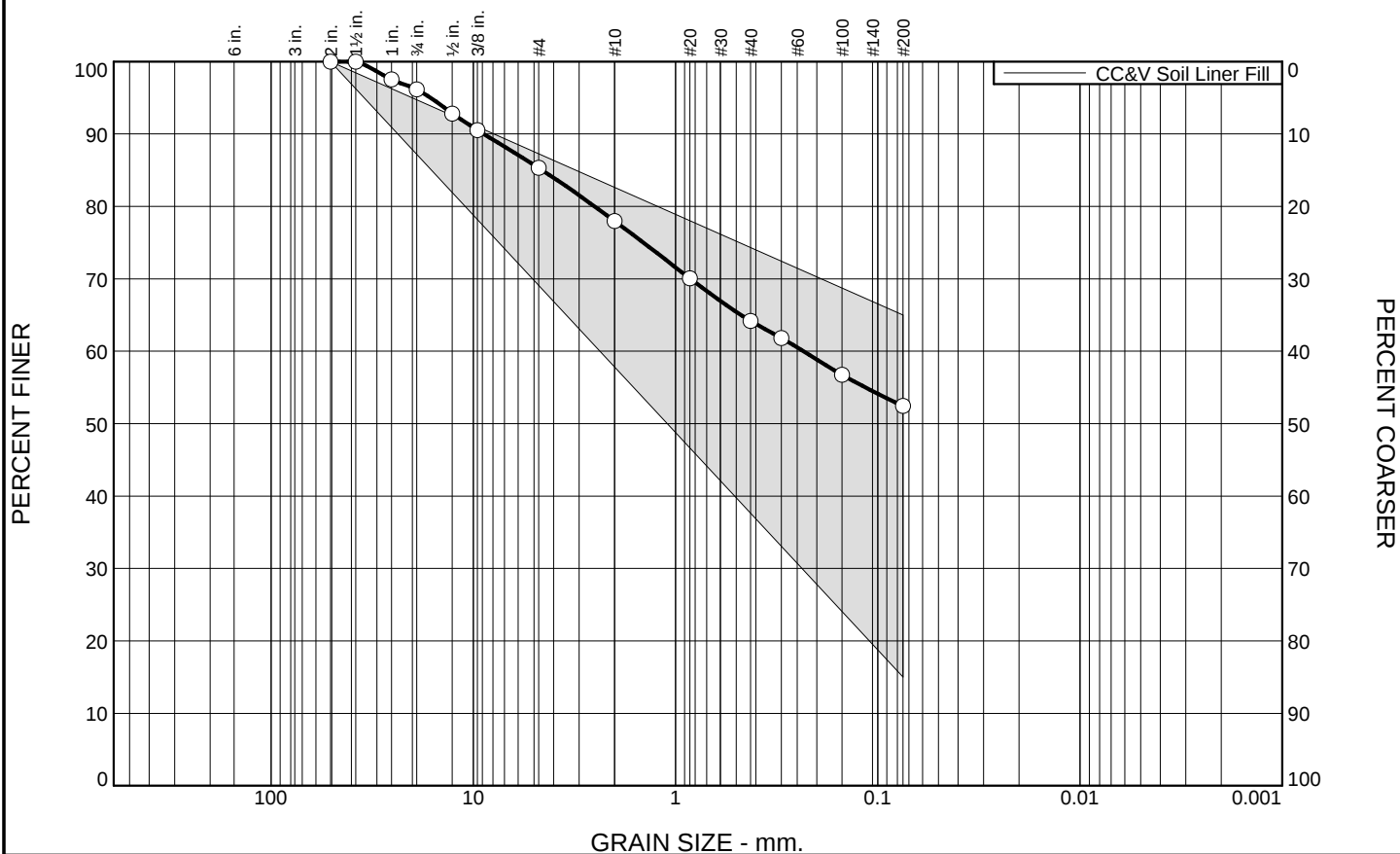
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure 1SLF-13-R

Tested By: EL Checked By: BR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	3.8	10.9	7.3	13.8	11.8	52.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0	100.0	
1.5"	100.0		
1.0"	97.5		
.75"	96.2		
.5"	92.8		
.375"	90.5	15.0 - 65.0	
#4	85.3		
#10	78.0		
#20	70.1		
#40	64.2		
#50	61.8		
#100	56.7		
#200	52.4		

Material Description

PL= 14 **Atterberg Limits** LL= 35 PI= 21

USCS= CL **Classification** AASHTO= A-6(7)

Remarks
Sample obtained from Phase 1 at approximate location
N 55,899.8 E 35,421.3 at an elevation of 9,470.2'

* CC&V Soil Liner Fill

Source of Sample: Phase 1-Soil Liner Fill
Sample Number: 1SLF-14-R

Date: 6/23/15



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

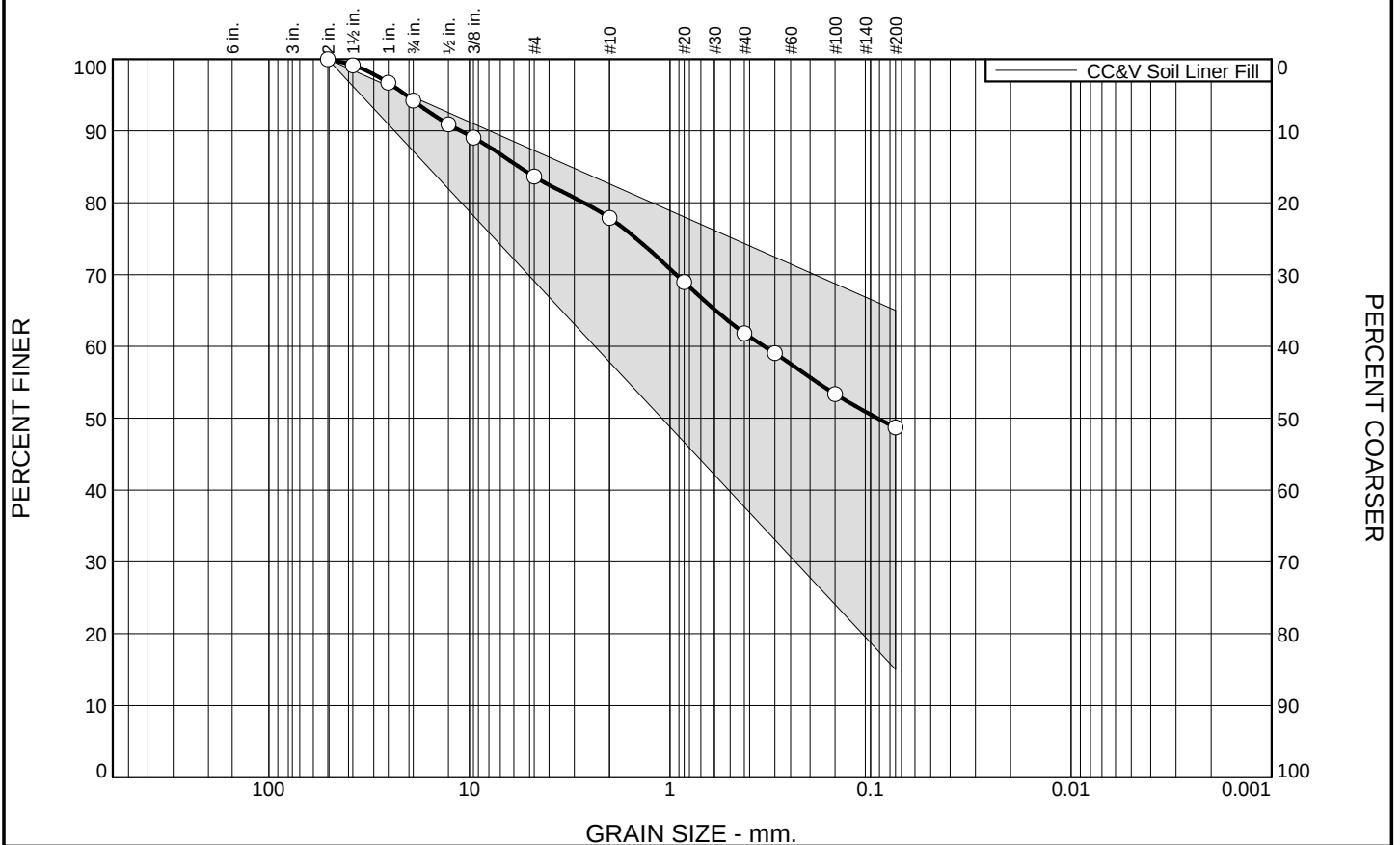
Project No: 74201125N0

Figure 1SLF-14-R

Tested By: EL/RB

Checked By: BR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.8	10.6	5.7	16.1	13.1	48.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0	100.0	
1.5"	99.1		
1.0"	96.7		
.75"	94.2		
.5"	90.9		
.375"	89.1		
#4	83.6		
#10	77.9		
#20	69.0		
#40	61.8		
#50	59.1	15.0 - 65.0	
#100	53.4		
#200	48.7		

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 12 LL= 35 PI= 23

Classification

USCS= SC AASHTO= A-6(7)

Remarks

Sample obtained from Phase 1 at approximate location N 54,934.7 E 35,512.0 at an elevation of 9,580.4'

* CC&V Soil Liner Fill

Source of Sample: Phase 1-Soil Liner Fill
Sample Number: 1SLF-17-R

Date: 7/16/15



Amec Foster Wheeler

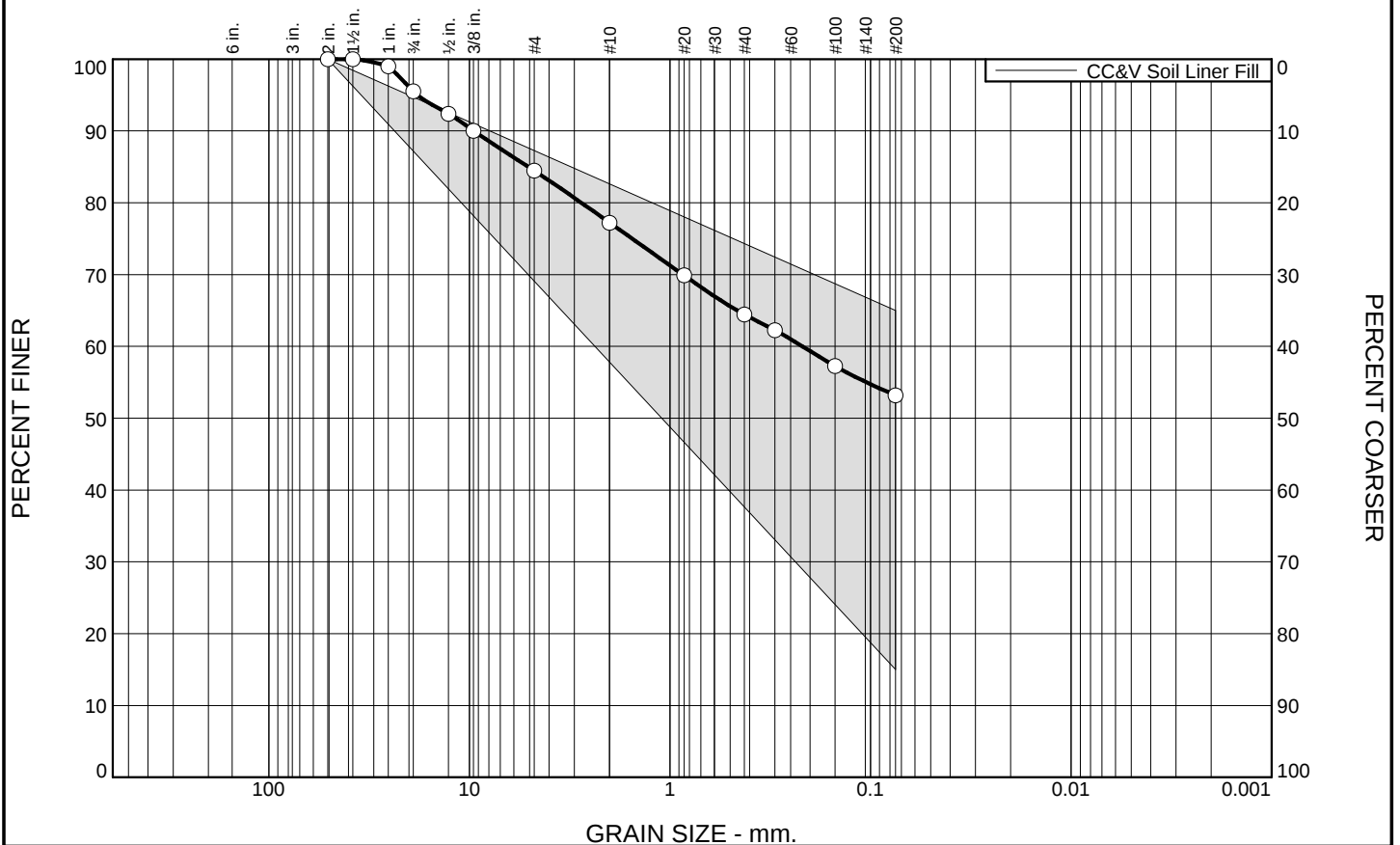
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure 1SLF-17-R

Tested By: EL Checked By: BR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.5	11.0	7.3	12.8	11.2	53.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0	100.0	
1.5"	100.0		
1.0"	99.0		
.75"	95.5		
.5"	92.4		
.375"	90.0	15.0 - 65.0	
#4	84.5		
#10	77.2		
#20	69.9		
#40	64.4		
#50	62.3		
#100	57.2		
#200	53.2		

* CC&V Soil Liner Fill

Material Description

Brown sandy lean clay with gravel

Atterberg Limits

PL= 11 LL= 35 PI= 24

Classification

USCS= CL AASHTO= A-6(8)

Remarks

Sample obtained from Phase 1 at approximate location N 55,934.1 E 35,808.3 at an elevation of 9,496.3

Source of Sample: Phase 1-Soil Liner Fill
Sample Number: 1SLF-19-R

Date: 7/27/15



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company

Project: VLF Squaw Gulch

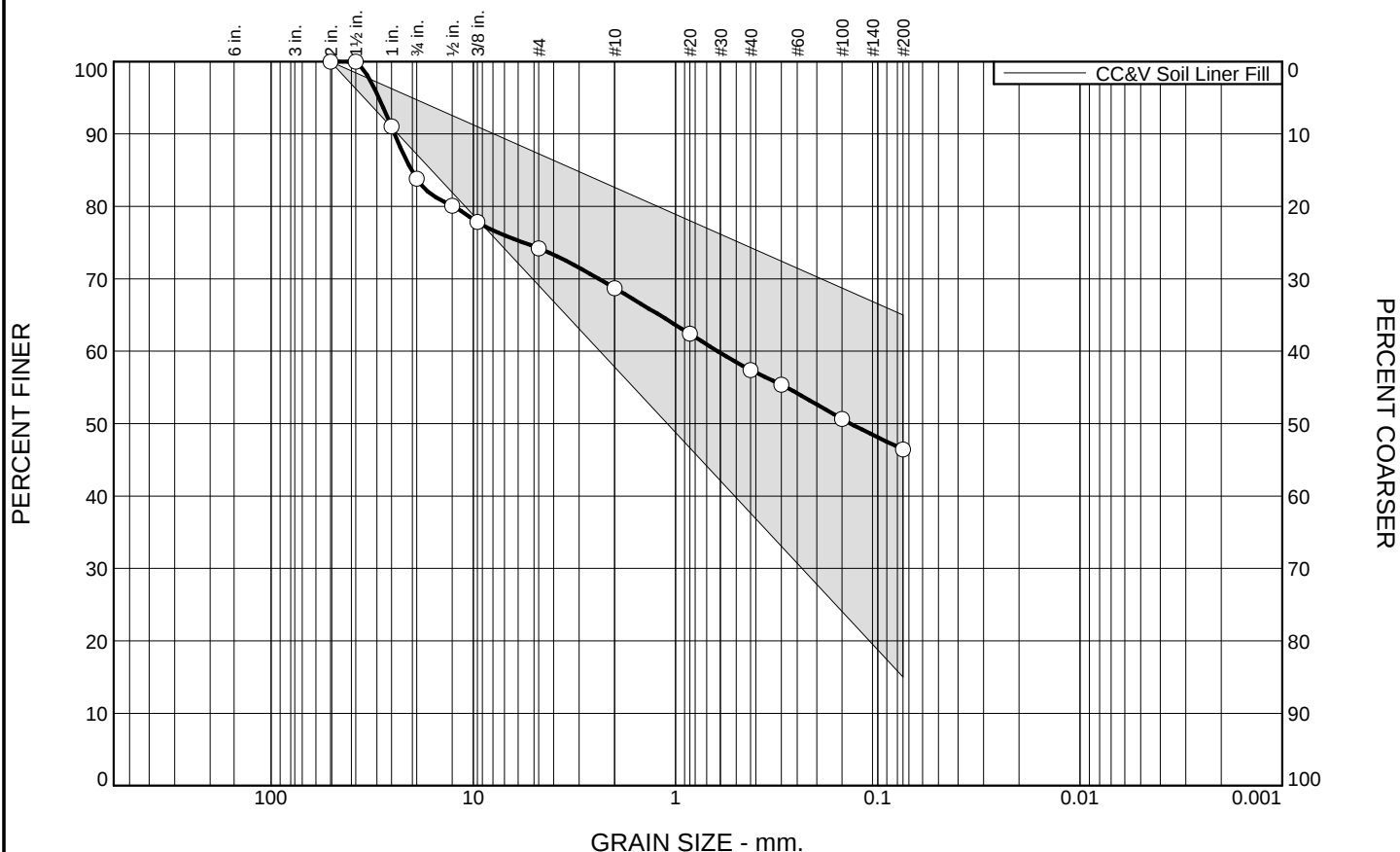
Project No: 74201125N0

Figure 1SLF-19-R

Tested By: EL

Checked By: BR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	16.2	9.6	5.5	11.3	11.0	46.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0	100.0	
1.5"	100.0		
1.0"	91.0		
.75"	83.8		
.5"	80.1		
.375"	77.8		
#4	74.2		
#10	68.7		
#20	62.4		
#40	57.4		
#50	55.4	15.0 - 65.0	
#100	50.6		
#200	46.4		

* CC&V Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 12 LL= 36 PI= 24

Classification

USCS= SC AASHTO= A-6(6)

Remarks

Sample obtained from Phase 1 at approximate location N 55,968.9 E 35,640.8 at an elevation of 9,492.8'

Source of Sample: Phase 1-Soil Liner Fill
Sample Number: 1SLF-21-R

Date: 7/29/15



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

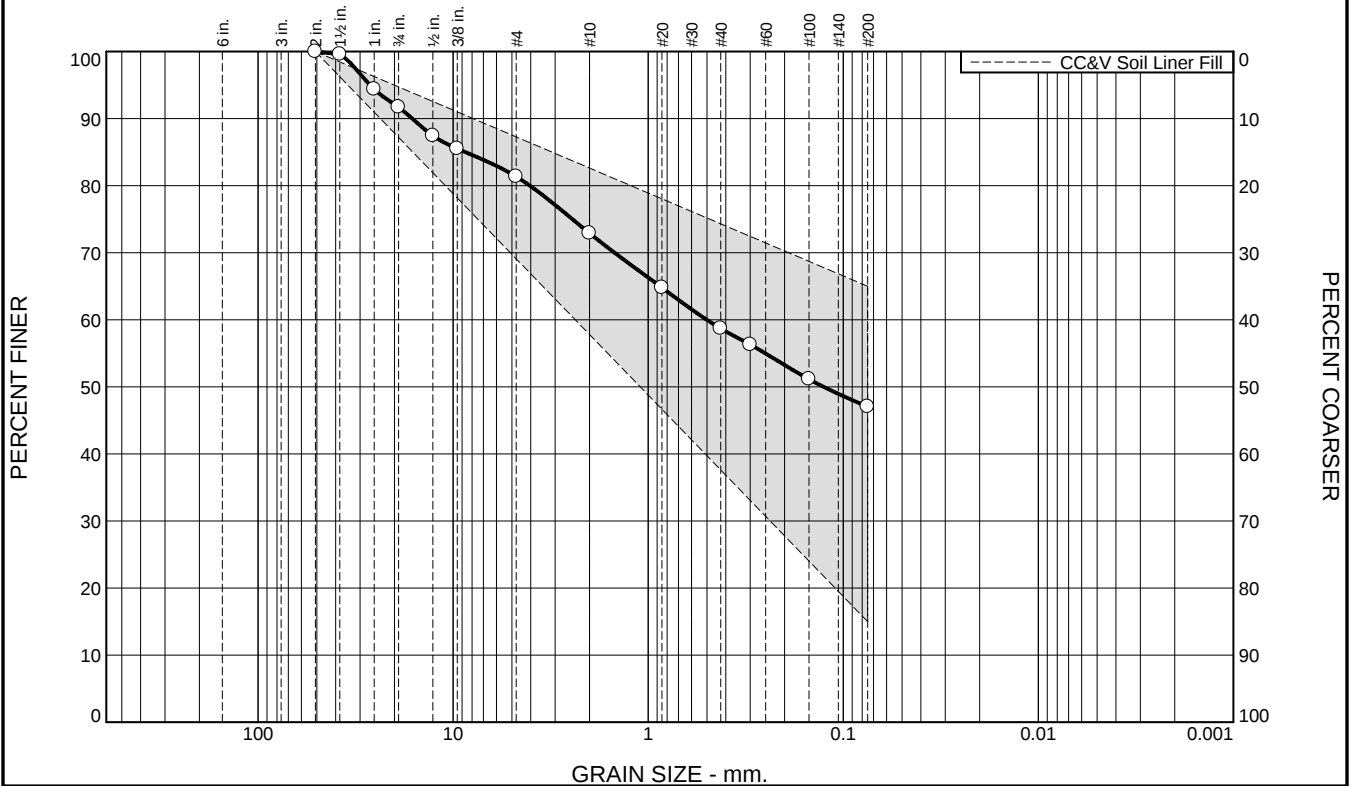
Project No: 74201125N0

Figure 1SLF-21-R

Tested By: EL

Checked By: BR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	8.3	10.3	8.5	14.2	11.7	47.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2"	100.0	100.0	
1.5"	99.6		
1.0"	94.4		
.75"	91.7		
.5"	87.4		
.375"	85.5		
#4	81.4		
#10	72.9		
#20	64.8		
#40	58.7		
#50	56.3		
#100	51.2		
#200	47.0	15.0 - 65.0	

* CC&V Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 12 LL= 35 PI= 23

Classification

USCS= SC AASHTO= A-6(6)

Remarks

Sample obtained from Phase 1 at approximate location N 56148.9 E 35412.3 at an elevation of 9529.3'

Source of Sample: Phase 1-Soil Liner Fill
Sample Number: 1SLF-32-R

Date: 8/15/15



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company

Project: VLF Squaw Gulch

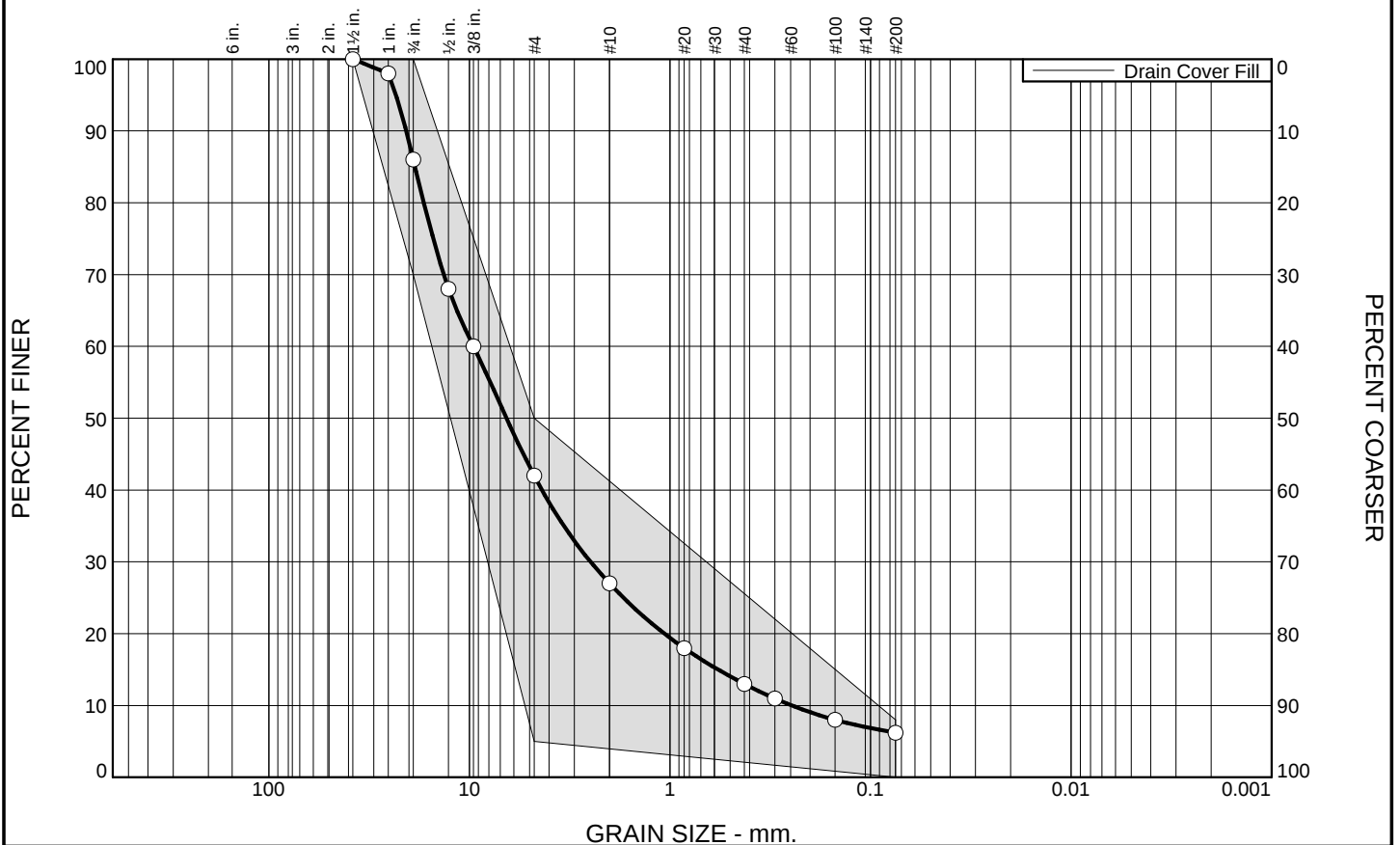
Project No: 74201125N0

Figure 1SLF-32-R

Tested By: EL Checked By: BR

Drain Cover Fill

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	14.0	44.0	15.0	14.0	6.8	6.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	98.0		
.75"	86.0	70.0 - 100.0	
.5"	68.0		
.375"	60.0		
#4	42.0	5.0 - 50.0	
#10	27.0		
#20	18.0		
#40	13.0		
#50	11.0		
#100	8.0		
#200	6.2	0.0 - 8.0	

* Drain Cover Fill

Material Description

Grey well-graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NP PI= NP

Classification

USCS= GW-GM AASHTO= A-1-a

Remarks

Sample obtained from Phase 1 approximate location N 54,322.6 E 34,563.8 at an elevation of 9,484.6'

Source of Sample: Phase 1 Drain Cover Fill
Sample Number: 1DCF-1-R

Date: 4/7/2015



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company

Project: VLF Squaw Gulch

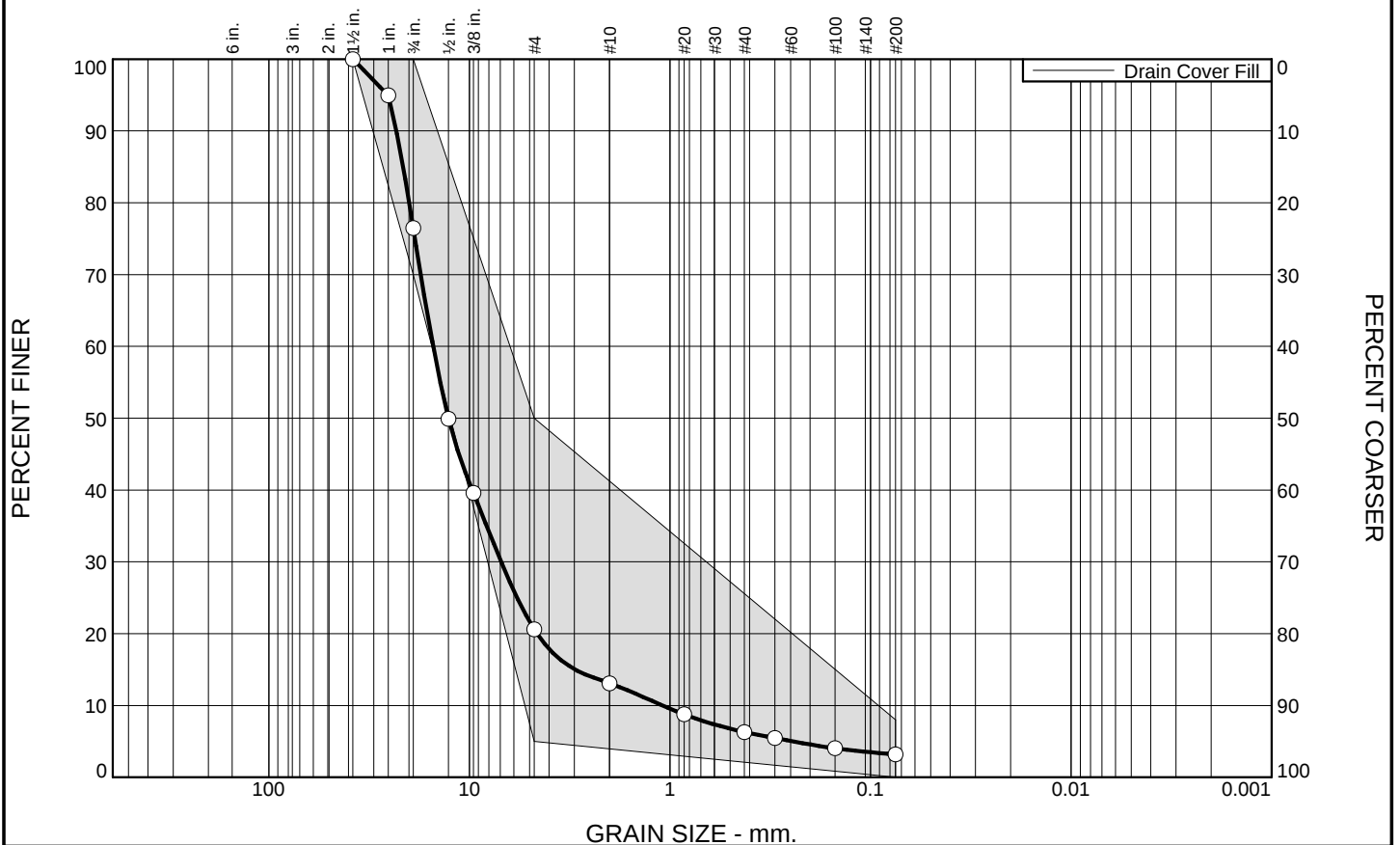
Project No: 74201125N0

Figure 1DCF-1-R

Tested By: RM

Checked By: MM

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	23.5	55.9	7.5	6.8	3.1	3.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	95.0		
.75"	76.5	70.0 - 100.0	
.5"	49.9		
.375"	39.6		
#4	20.6	5.0 - 50.0	
#10	13.1		
#20	8.8		
#40	6.3		
#50	5.5		
#100	4.0		
#200	3.2	0.0 - 8.0	

* Drain Cover Fill

Material Description

Gray well-graded gravel with sand

Atterberg Limits

PL= NP

LL= NP

PI= NP

Classification

USCS= GW

AASHTO= A-1-a

Remarks

Sample obtained from Phase 1 at approximate location N 55,227.2 E 34,130.3 at an elevation of 9,491.2'

Source of Sample: Phase 1 Drain Cover Fill
Sample Number: 1DFC-2-R

Date: 6/8/15



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company

Project: VLF Squaw Gulch

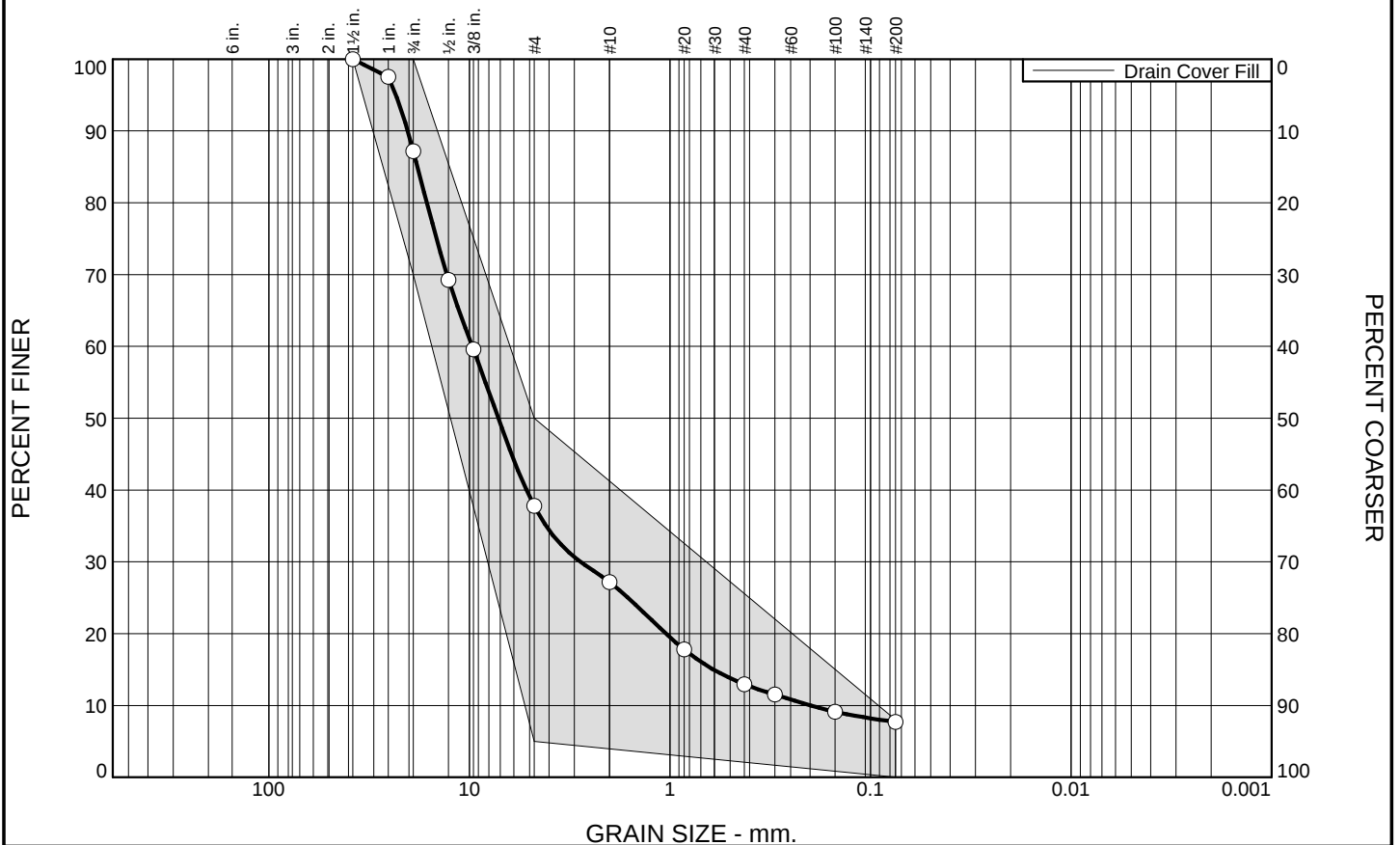
Project No: 74201125N0

Figure 1DFC-2-R

Tested By: EL

Checked By: BR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	12.8	49.4	10.6	14.2	5.3	7.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	97.5		
.75"	87.2	70.0 - 100.0	
.5"	69.3		
.375"	59.6		
#4	37.8	5.0 - 50.0	
#10	27.2		
#20	17.8		
#40	13.0		
#50	11.5		
#100	9.1		
#200	7.7	0.0 - 8.0	

* Drain Cover Fill

Material Description

Gray poorly graded gravel with silt and sand

Atterberg Limits

PL= NP

LL= NP

PI= NP

Classification

USCS= GP-GM

AASHTO= A-1-a

Remarks

Sample obtained from Phase 1 at approximate location N 55,256.6 E 35,486.7 at an elevation of 9,496.4'

Source of Sample: Phase 1 Drain Cover Fill
Sample Number: 1DCF-3-R

Date: 6/16/15



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company

Project: VLF Squaw Gulch

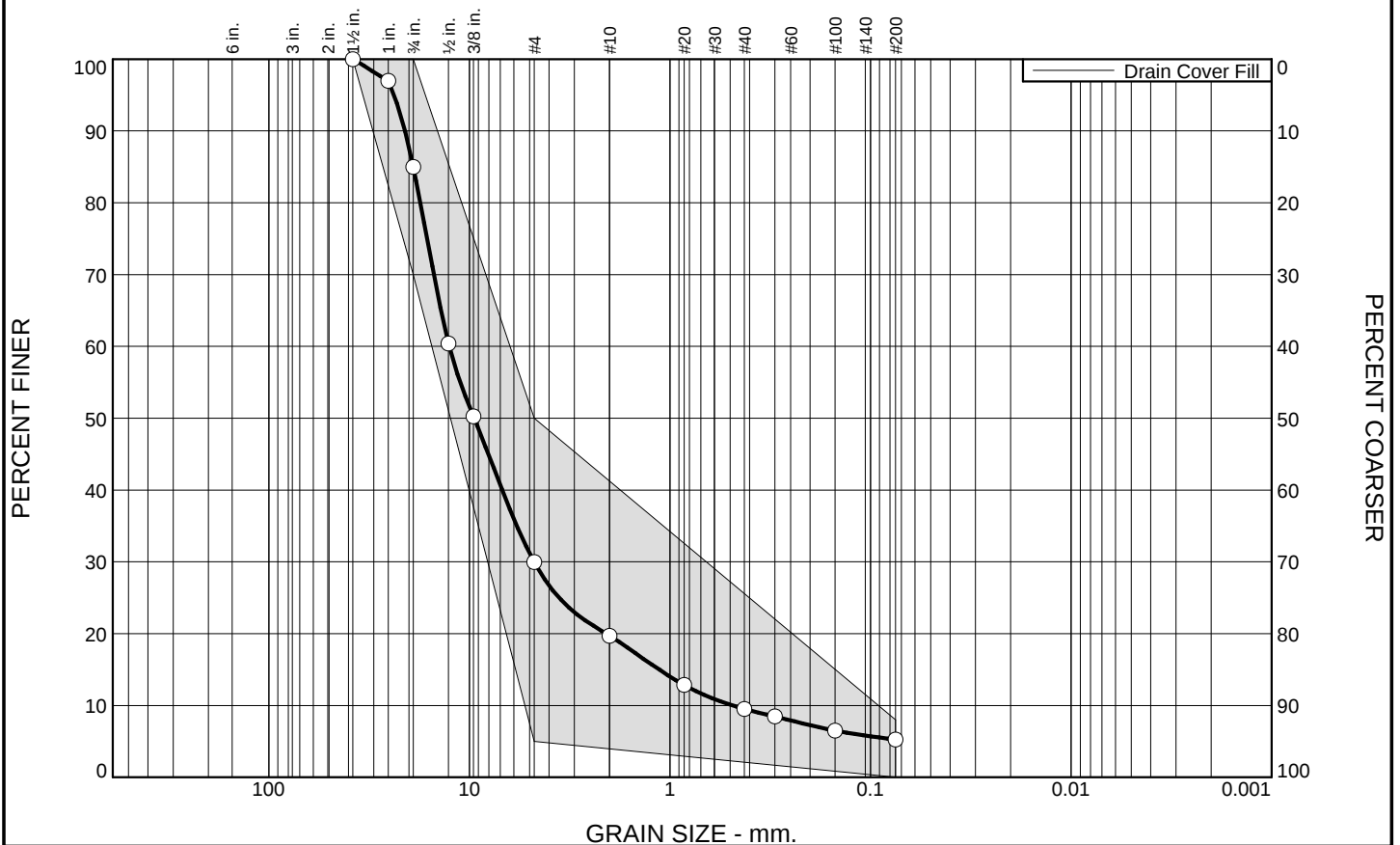
Project No: 74201125N0

Figure 1DCF-3-R

Tested By: EL

Checked By: BR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	15.0	55.0	10.3	10.2	4.2	5.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	97.0		
.75"	85.0	70.0 - 100.0	
.5"	60.4		
.375"	50.2		
#4	30.0	5.0 - 50.0	
#10	19.7		
#20	12.9		
#40	9.5		
#50	8.5		
#100	6.5		
#200	5.3	0.0 - 8.0	

* Drain Cover Fill

Material Description

Gray poorly graded gravel with silt and sand.

Atterberg Limits

PL= NP LL= NP PI= NP

Classification

USCS= GP-GM AASHTO= A-1-a

Remarks

Sample obtained from Phase 1 at approximate location N 54,975.5 E 35,136.5 at an elevation of 9,458.5'

Source of Sample: Phase 1 Drain Cover Fill
Sample Number: 1DCF-5-R

Date: 7/15/15



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

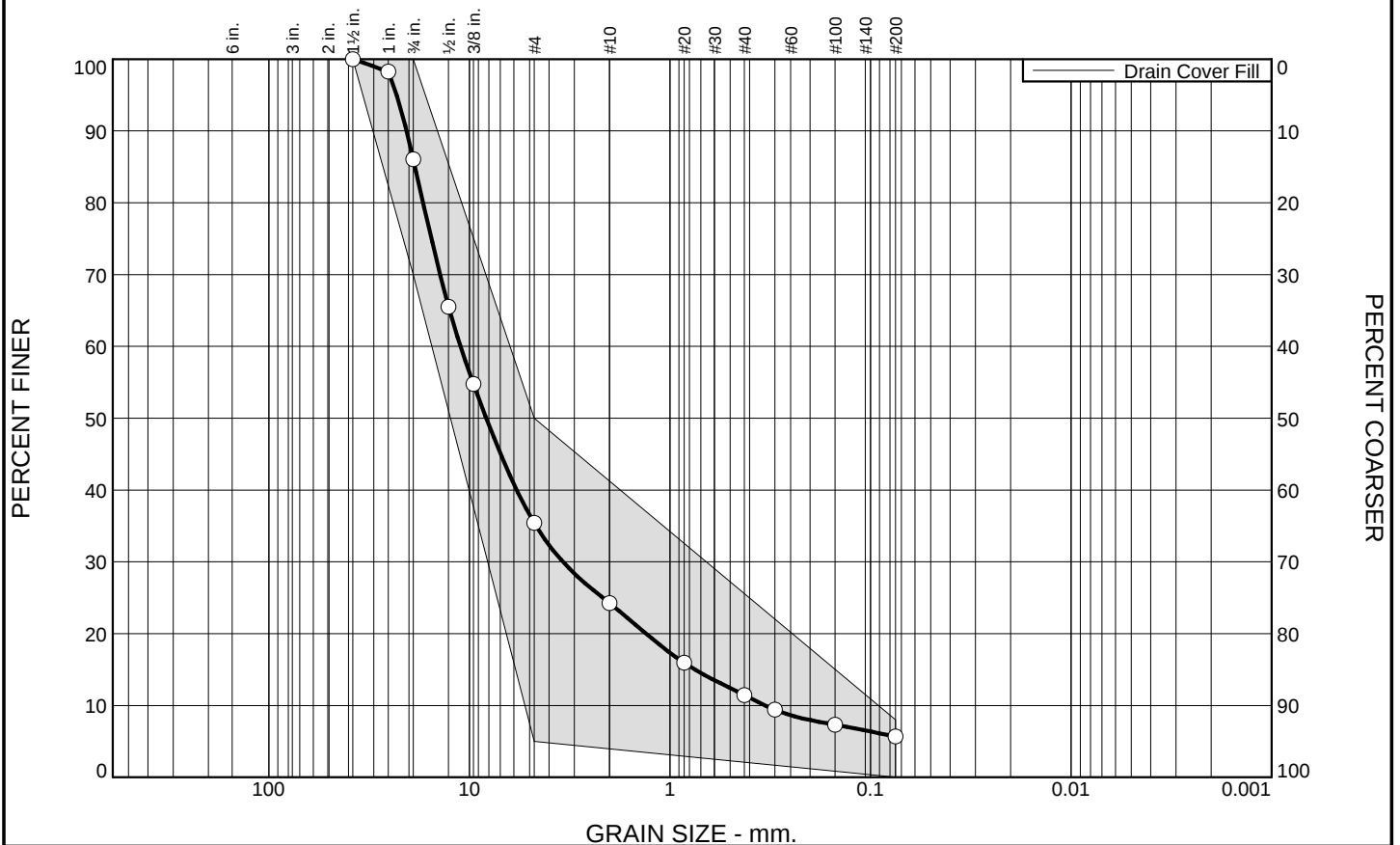
Project No: 74201125N0

Figure 1DCF-5-R

Tested By: EL

Checked By: BR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	14.0	50.6	11.2	12.8	5.7		5.7

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	98.3		
.75"	86.0	70.0 - 100.0	
.5"	65.5		
.375"	54.8		
#4	35.4	5.0 - 50.0	
#10	24.2		
#20	16.0		
#40	11.4		
#50	9.4		
#100	7.3		
#200	5.7	0.0 - 8.0	

* Drain Cover Fill

Material Description

Gray poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NP PI= NP

Classification

USCS= GP-GM AASHTO= A-1-a

Remarks

Sample obtained from Phase 1 at approximate location N 55,811.2 E 35,744.2 at an elevation of 9,476.6'

Source of Sample: Phase 1 Drain Cover Fill
Sample Number: 1DCF-6-R

Date: 7/30/15



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company

Project: VLF Squaw Gulch

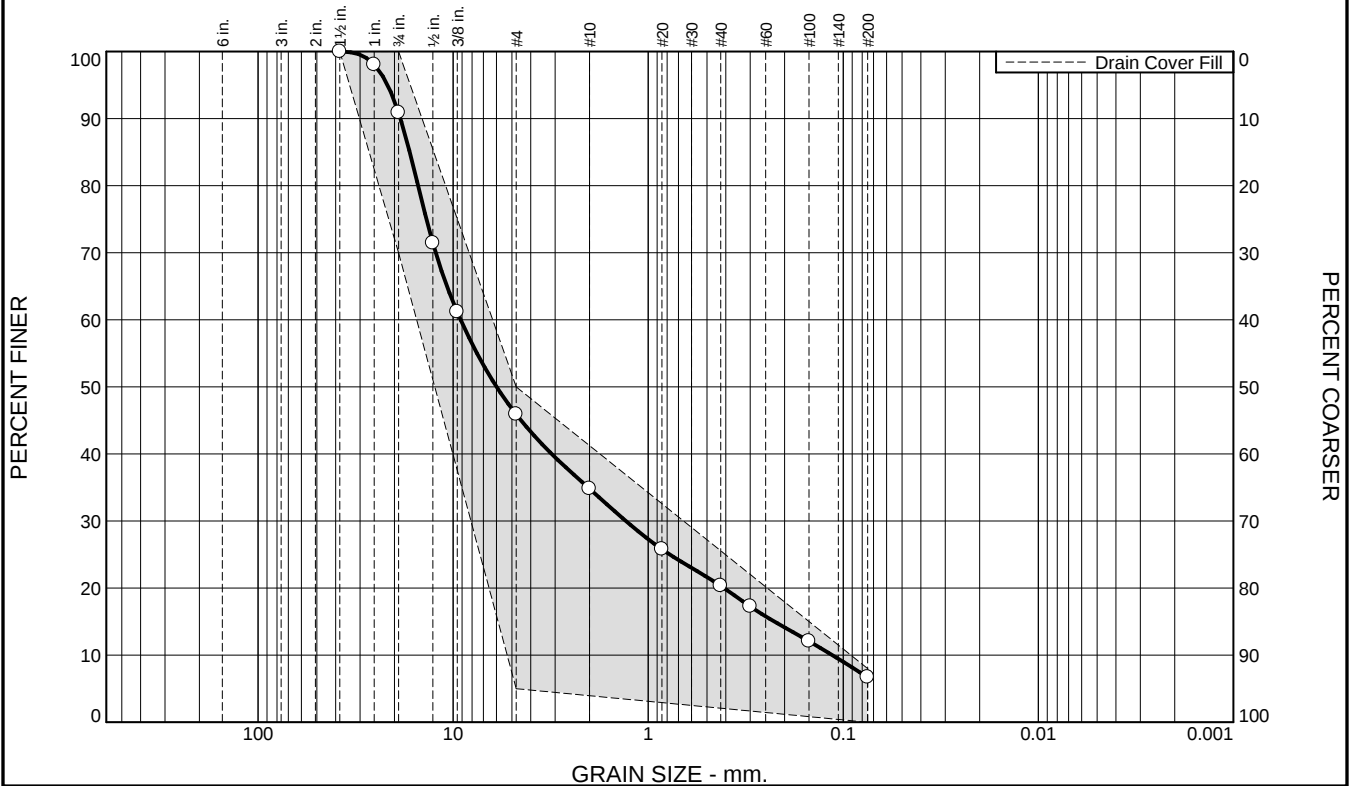
Project No: 74201125N0

Figure 1DCF-6-R

Tested By: EL

Checked By: BR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	9.1	45.0	11.1	14.5	13.6	6.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	98.1		
.75"	90.9	70.0 - 100.0	
.5"	71.4		
.375"	61.2		
#4	45.9	5.0 - 50.0	
#10	34.8		
#20	25.8		
#40	20.3		
#50	17.3		
#100	12.1		
#200	6.7	0.0 - 8.0	

* Drain Cover Fill

Material Description

Gray well-graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NP PI= NP

Classification

USCS= GW-GM AASHTO= A-1-a

Remarks

Sample obtained from Phase 1 at approximate location N 56,286.4 E 34,861.2 at an elevation of 9,547.4'

Source of Sample: Phase 1 Drain Cover Fill
Sample Number: 1DCF-7-R

Date: 9/23/15



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company

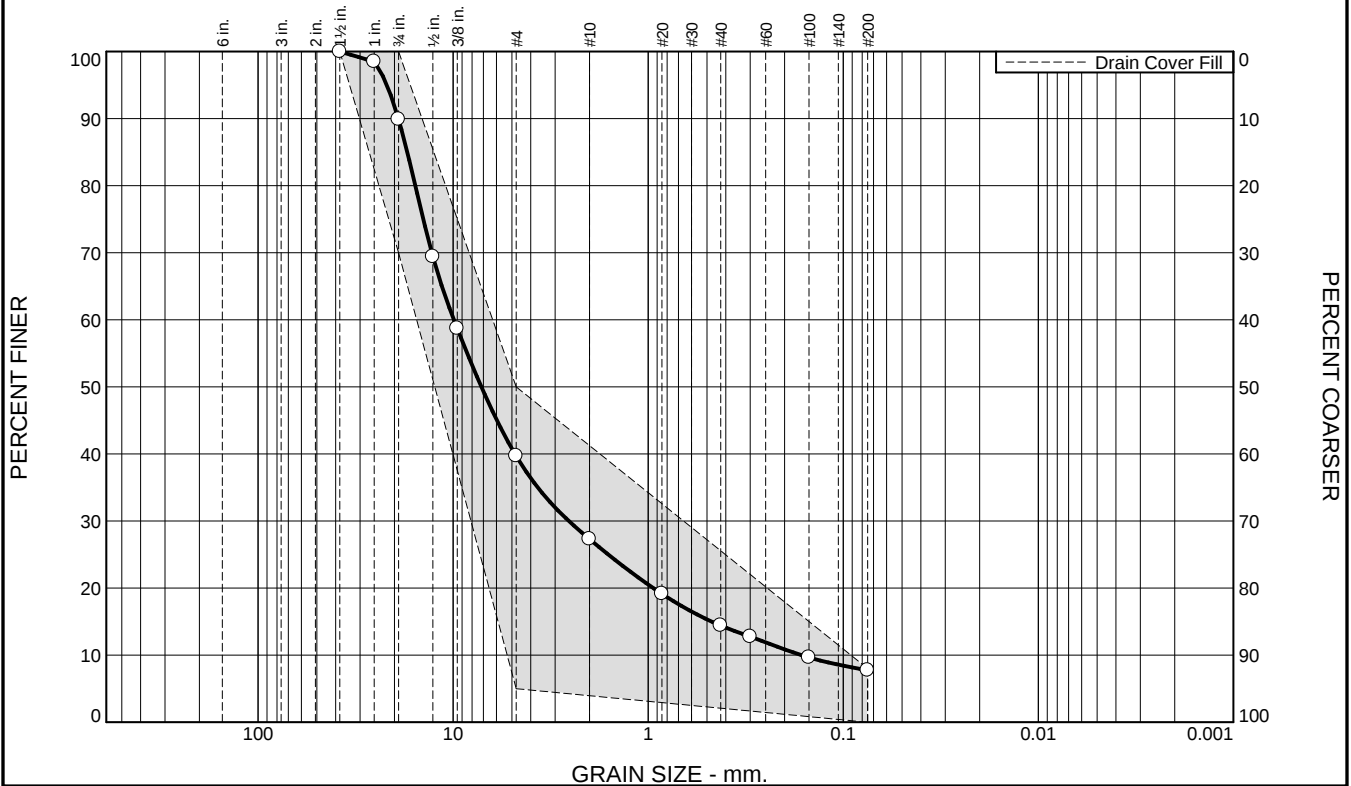
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure 1DCF-7-R

Tested By: EL Checked By: BR

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	10.1	50.2	12.4	12.9	6.6	7.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	98.5	70.0 - 100.0	
.75"	89.9		
.5"	69.4	5.0 - 50.0	
.375"	58.7		
#4	39.7		
#10	27.3	0.0 - 8.0	
#20	19.1		
#40	14.4		
#50	12.8		
#100	9.7		
#200	7.8		

* Drain Cover Fill

Material Description

Gray poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NP PI= NP

Classification

USCS= GP-GM AASHTO= A-1-a

Remarks

Sample obtained from Phase 1 at approximate location N 55,158.3 E 35,581.6 at an elevation of 9,551.9'

Source of Sample: Phase 1 Drain Cover Fill
Sample Number: 1DCF-8-R

Date: 9/23/15



Amec Foster Wheeler

Client: Cripple Creek & Victor Gold Mining Company

Project: VLF Squaw Gulch

Project No: 74201125N0

Figure 1DCF-8-R

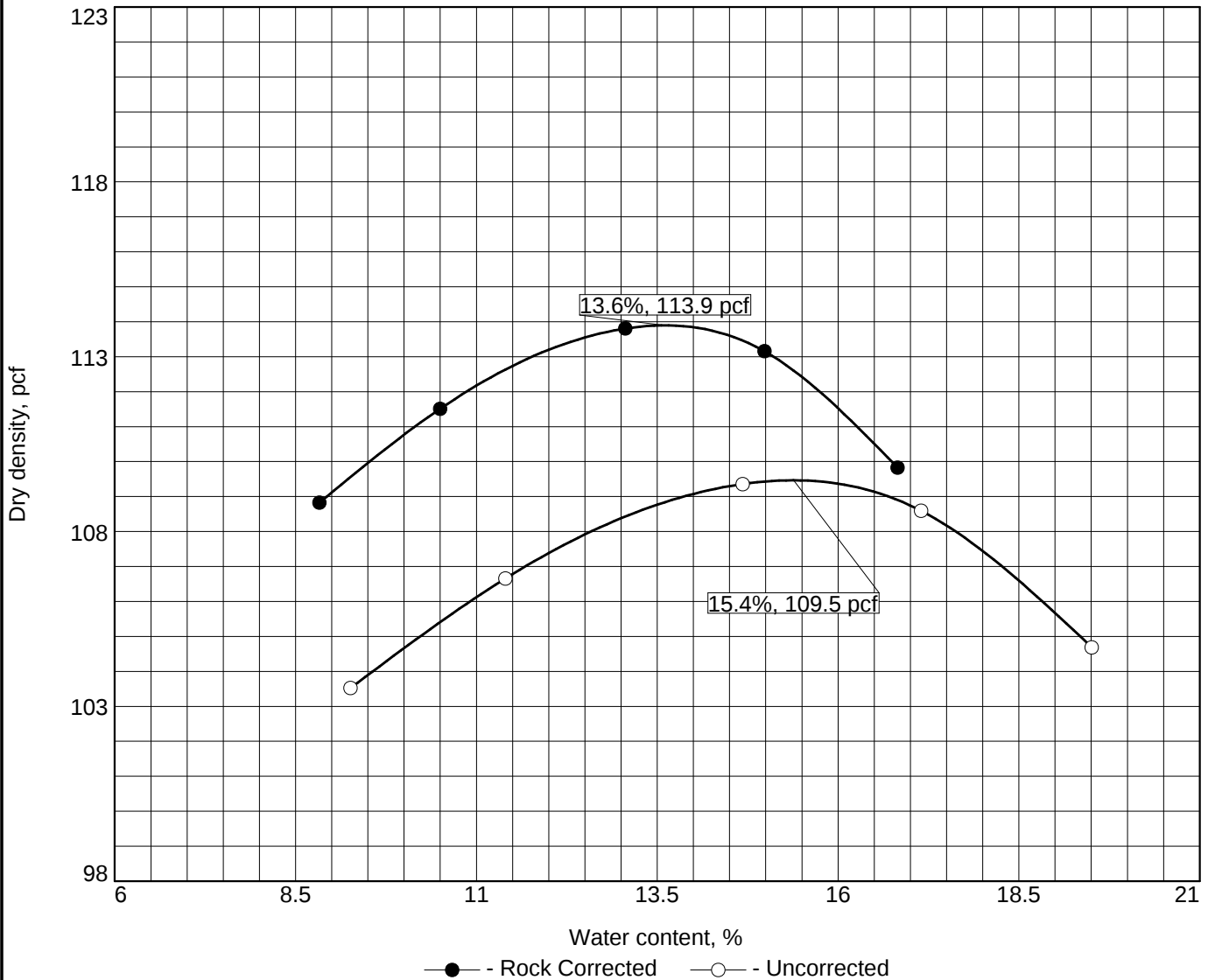
Tested By: EL Checked By: BR

Appendix H.2

Compaction Testing

Soil Liner Fill

COMPACTION TEST REPORT



Test specification: ASTM D 698-07 Method A Standard
 ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

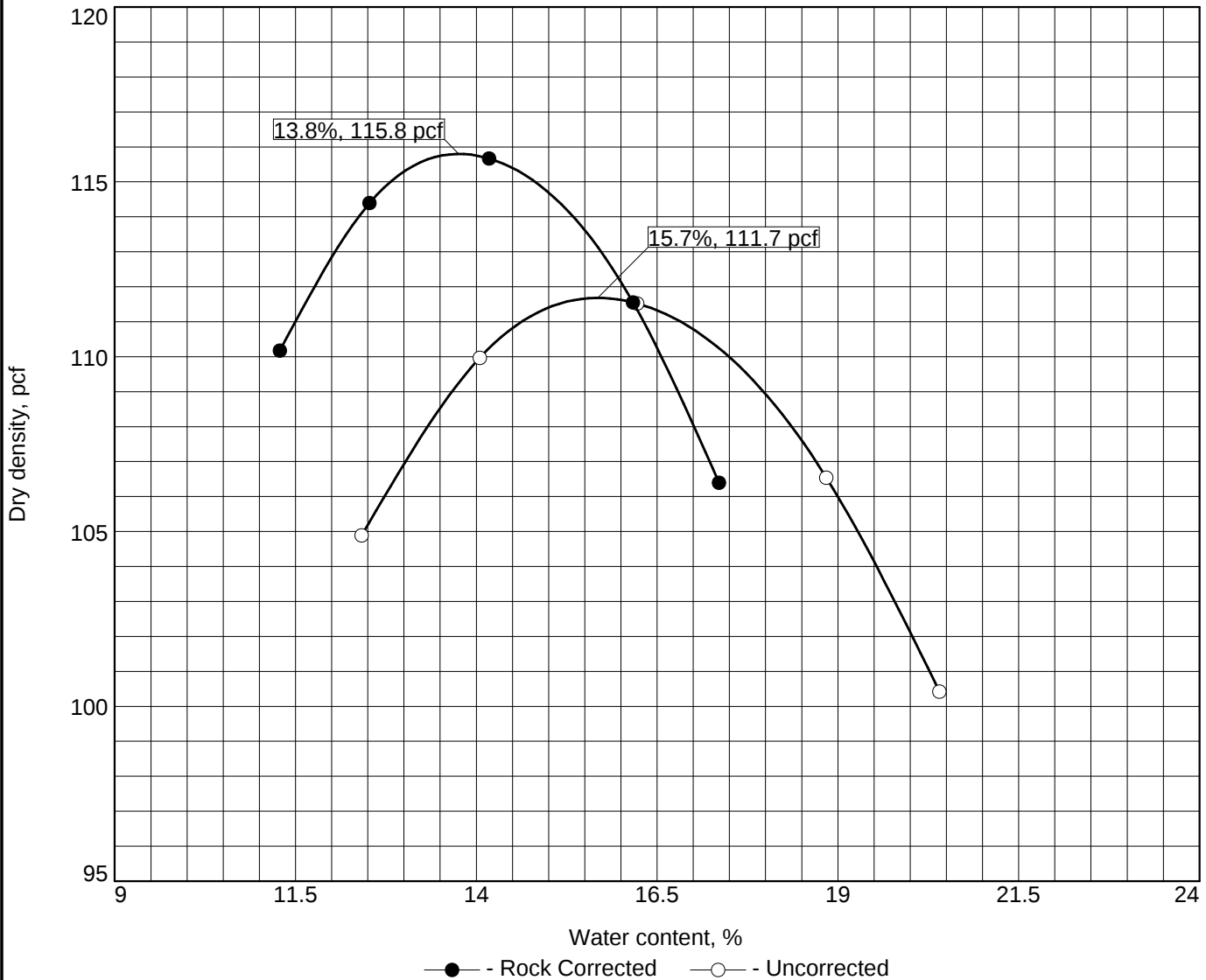
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	SC	A-6(4)	13.5		34	17	22.0	46.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 113.9 pcf		109.5 pcf	Brown clayey sand with gravel
Optimum moisture = 13.6 %		15.4 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch ☐ Source of Sample: Phase 1-Soil Liner Fill Sample Number: 1SLF-1-R			Remarks:
 Amec Foster Wheeler			

Figure 1SLF-1-R

Tested By: RM Checked By: TB

COMPACTION TEST REPORT



Test specification: ASTM D 698-07 Method A Standard
ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

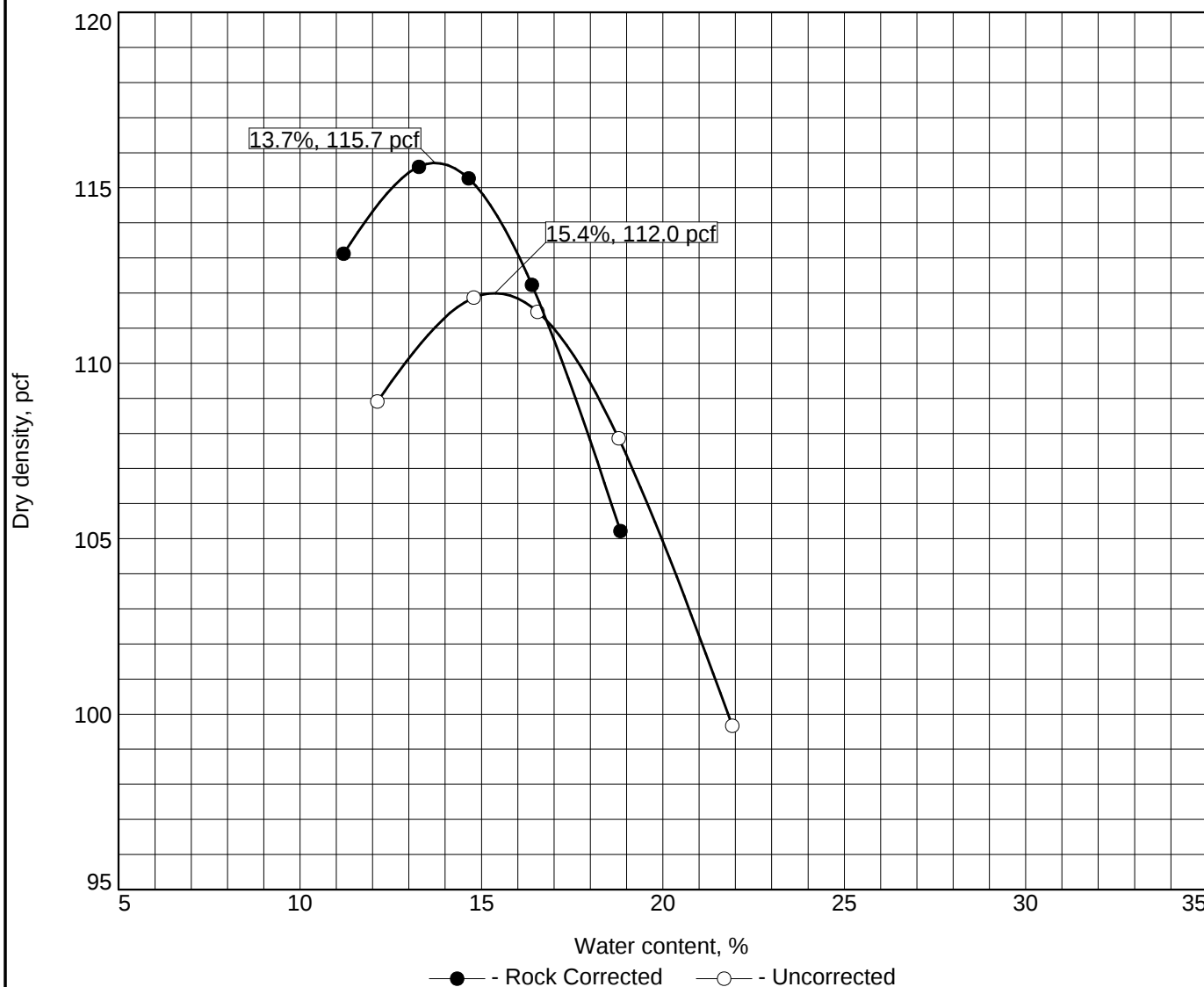
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	SC	A-6(4)	14.6		36	18	24.0	45.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 115.8 pcf		111.7 pcf	Brown clayey sand with gravel
Optimum moisture = 13.8 %		15.7 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch ☐ Source of Sample: Phase 1-Soil Liner Fill Sample Number: 1SLF-2-R			Remarks:
 Amec Foster Wheeler			

Figure 1SLF-2-R

Tested By: RM Checked By: TB

COMPACTION TEST REPORT



Test specification: ASTM D 698-07 Method A Standard
ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

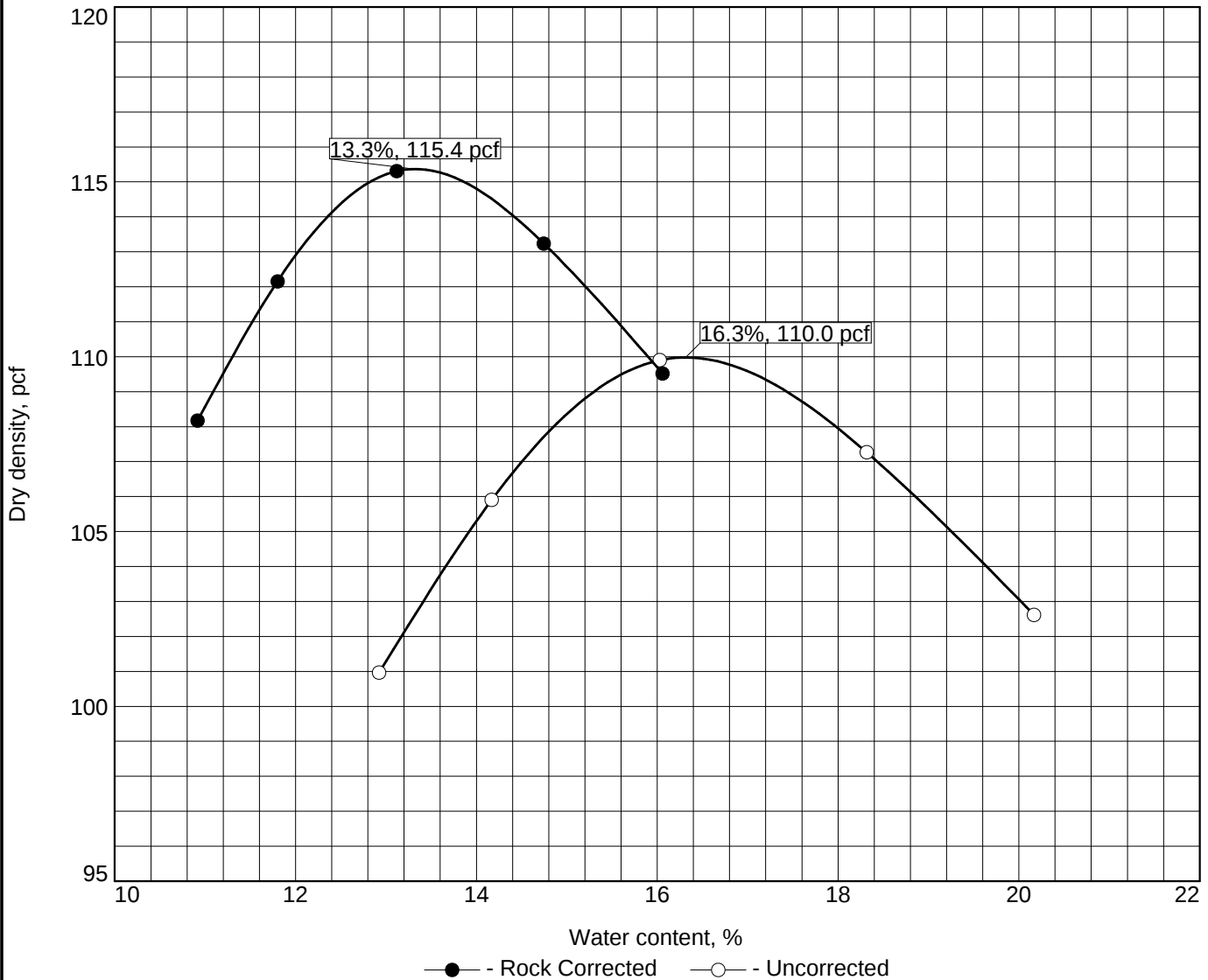
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	SC	A-6(3)	10.1		33	15	22.0	46.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 115.7 pcf		112.0 pcf	Brown clayey sand with gravel
Optimum moisture = 13.7 %		15.4 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch ☐ Source of Sample: Phase 1-Soil Liner Fill Sample Number: 1SLF-3-R			Remarks:
 Amec Foster Wheeler			

Figure 1SLF-3-R

Tested By: RM Checked By: TB

COMPACTION TEST REPORT



Test specification: ASTM D 698-07 Method A Standard
 ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

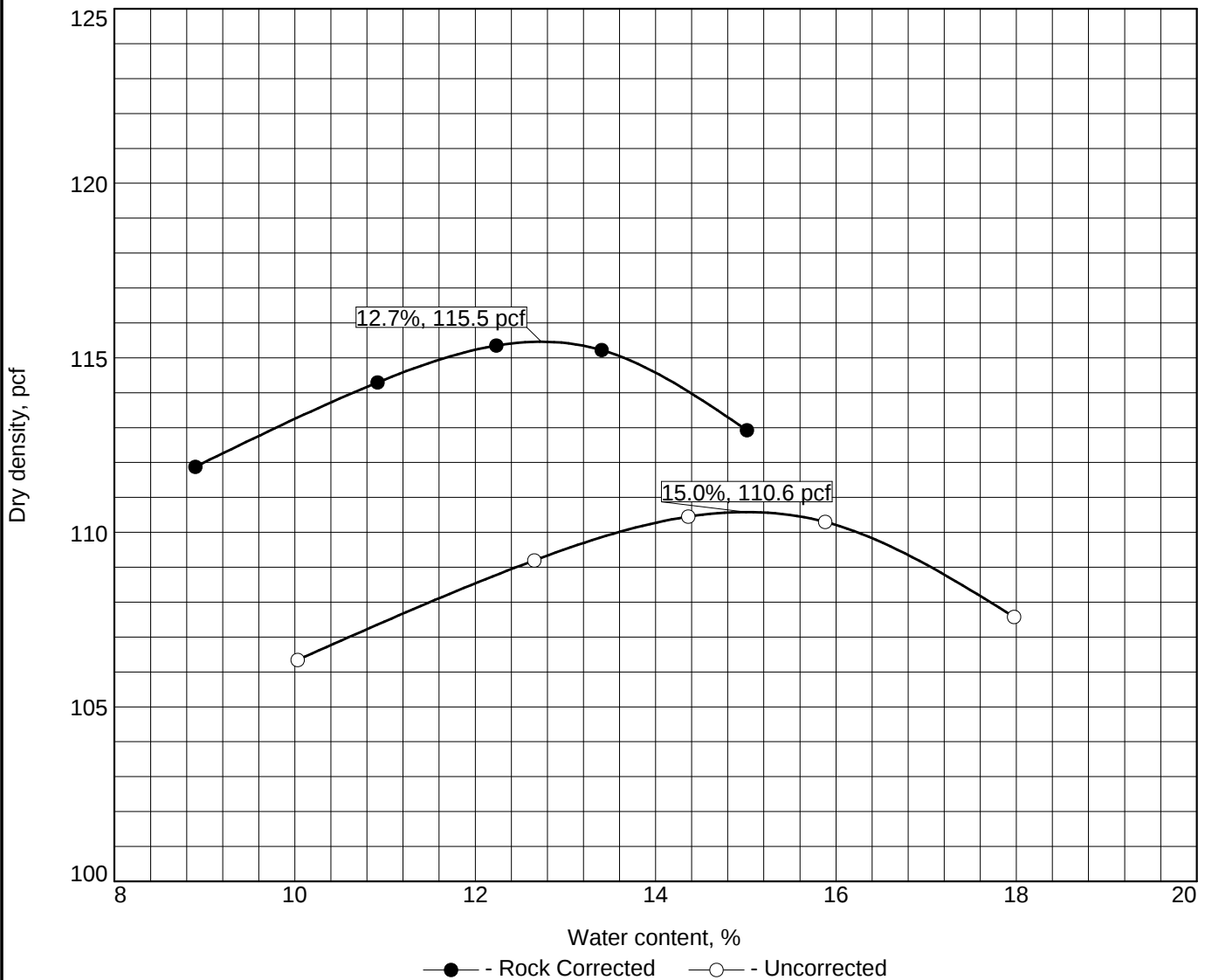
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	GC	A-6(3)	13.8		34	16	29.0	42.3

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 115.4 pcf		110.0 pcf	Brown clayey gravel with sand
Optimum moisture = 13.3 %		16.3 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch ☐ Source of Sample: Phase 1-Soil Liner Fill Sample Number: 1SLF-4-R			Remarks:
 Amec Foster Wheeler			

Figure 1SLF-4-R

Tested By: RM Checked By: MM

COMPACTION TEST REPORT



Test specification: ASTM D 698-07 Method A Standard
 ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

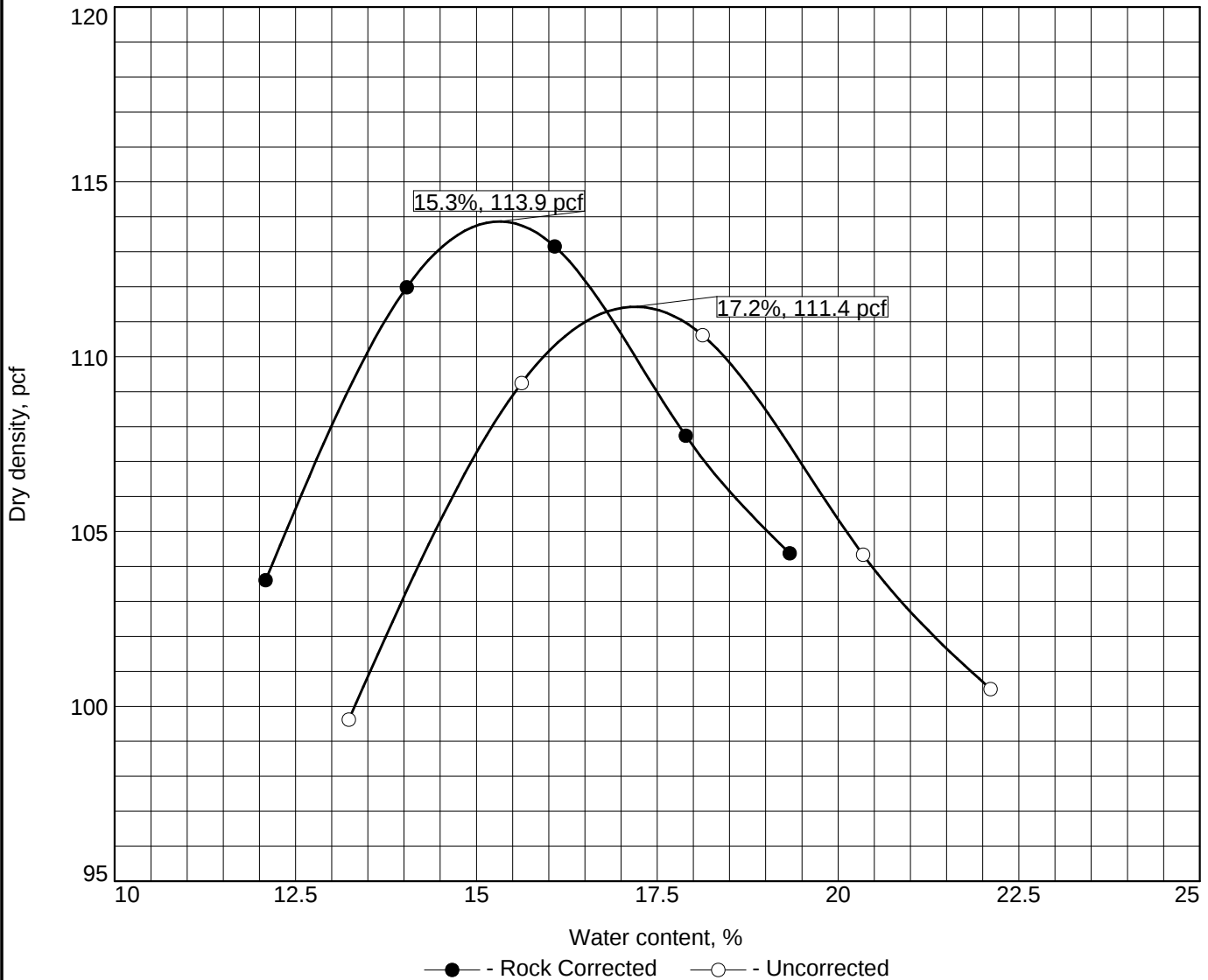
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	SC	A-6(5)	14.9		36	20	23.0	47.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 115.5 pcf		110.6 pcf	Brown clayey sand with gravel
Optimum moisture = 12.7 %		15.0 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch ☐ Source of Sample: Phase 1-Soil Liner Fill Sample Number: 1SLF-5-R			Remarks:
 Amec Foster Wheeler			

Figure 1SLF-5-R

Tested By: RM Checked By: MM

COMPACTION TEST REPORT



Test specification: ASTM D 698-07 Method A Standard
 ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

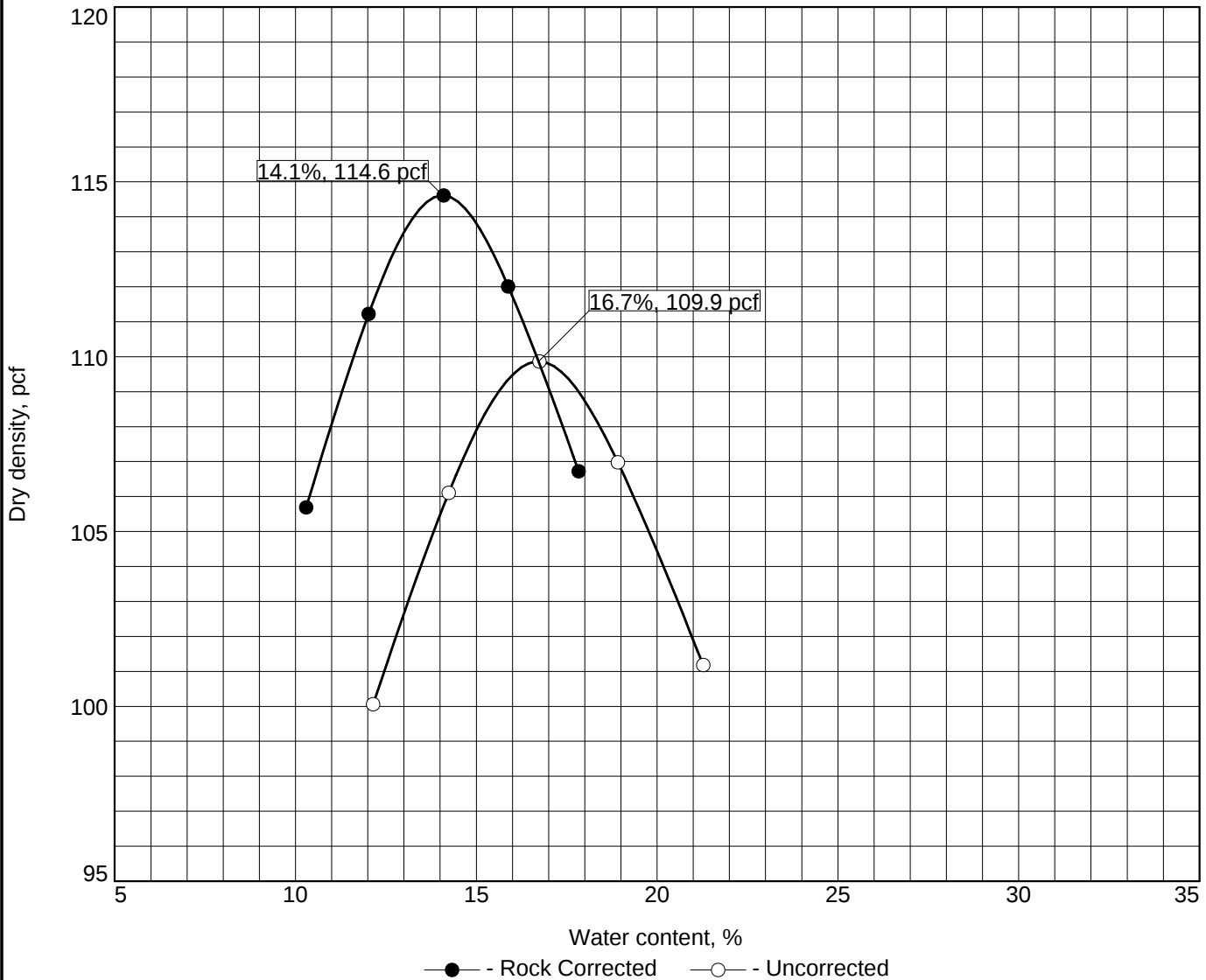
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	CL	A-6(7)	17.6		37	23	18.3	50.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 113.9 pcf		111.4 pcf	Brown sandy lean clay with gravel
Optimum moisture = 15.3 %		17.2 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch ☐ Source of Sample: Phase 1-Soil Liner Fill Sample Number: 1SLF-9-R			Remarks:
 Amec Foster Wheeler			

Figure 1SLF-9-R

Tested By: EL Checked By: BR

COMPACTION TEST REPORT



Test specification: ASTM D 698-07 Method A Standard
 ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

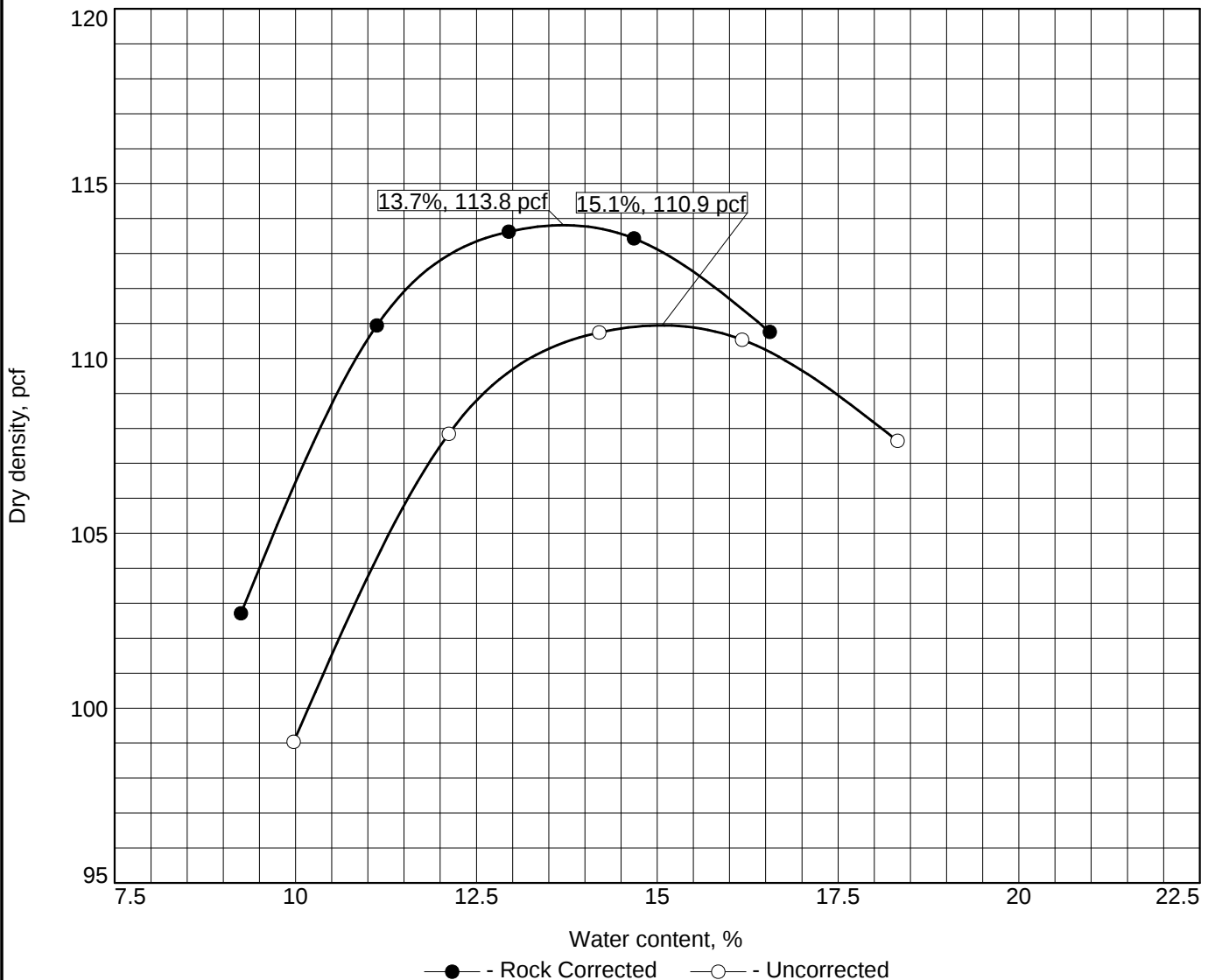
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	CL	A-6(7)	14.9		36	21	17.4	50.5

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 114.6 pcf		109.9 pcf	Brown sandy lean clay with gravel
Optimum moisture = 14.1 %		16.7 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch ☐ Source: Phase 1-Soil Liner Fill Sample No.: 1SLF-11-R			Remarks:
 Amec Foster Wheeler			

Figure 1SLF-11-R

Tested By: EL Checked By: BR

COMPACTION TEST REPORT



Test specification: ASTM D 698-07 Method A Standard
 ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

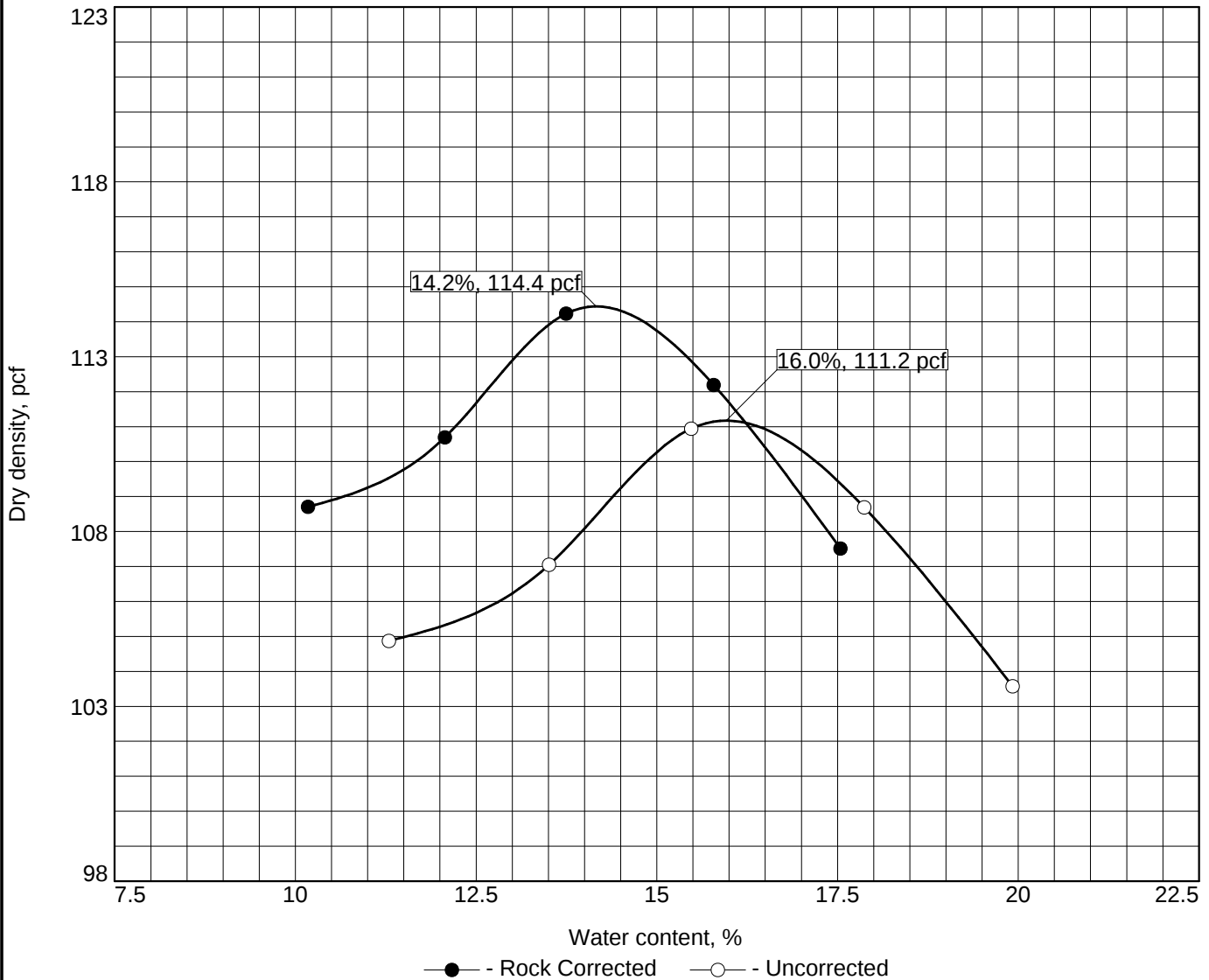
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	CL	A-6(8)	10.5		36	21	12.4	55.1

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 113.8 pcf		110.9 pcf	
Optimum moisture = 13.7 %		15.1 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch ☐ Source: Phase 1-Soil Liner Fill Sample No.: 1SLF-13-R			Remarks:
 Amec Foster Wheeler			

Figure 1SLF-13-R

Tested By: EL Checked By: BR

COMPACTION TEST REPORT



Test specification: ASTM D 698-07 Method A Standard
 ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	CL	A-6(7)	11.7		35	21	14.7	52.4

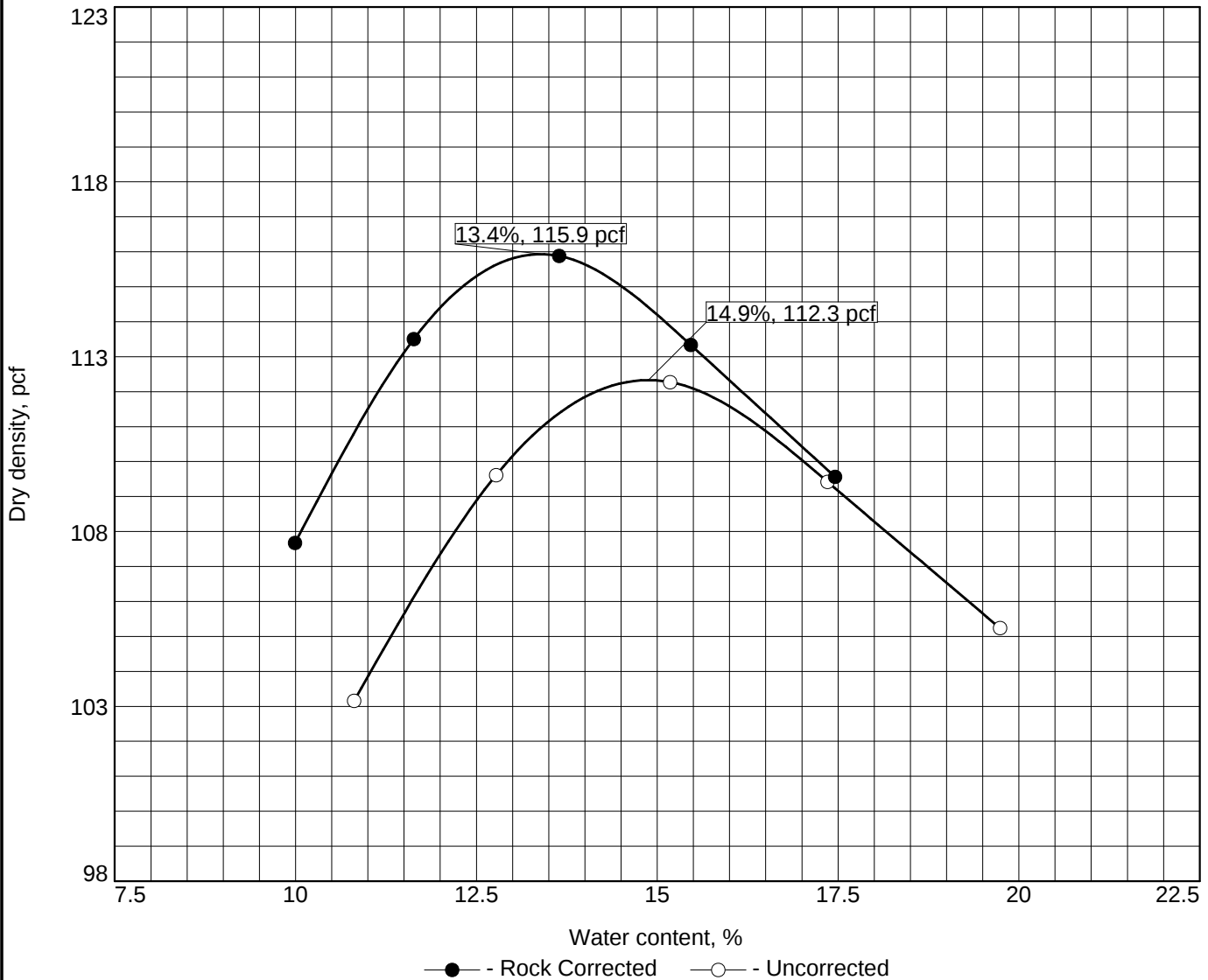
ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 114.4 pcf		111.2 pcf	
Optimum moisture = 14.2 %		16.0 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch ☐ Source: Phase 1-Soil Liner Fill Sample No.: 1SLF-14-R			Remarks:
 Amec Foster Wheeler			

Figure 1SLF-14-R

Figure 1SLF-14-R

Tested By: EL/RB Checked By: BR

COMPACTION TEST REPORT



Test specification: ASTM D 698-07 Method A Standard
 ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

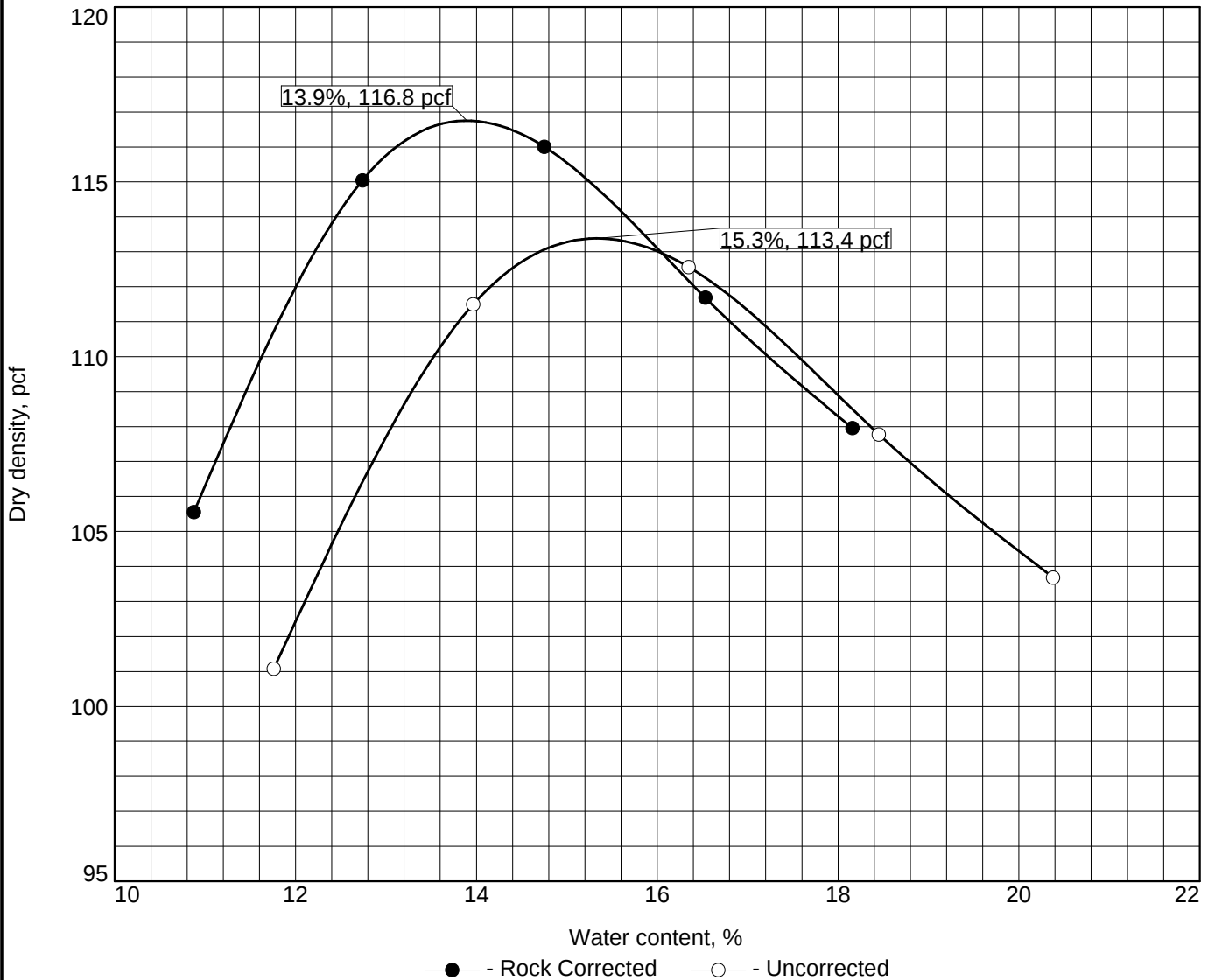
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	SC	A-6(7)	12.8		35	23	16.4	48.7

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 115.9 pcf		112.3 pcf	Brown clayey sand with gravel
Optimum moisture = 13.4 %		14.9 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch ○ Source: Phase 1-Soil Liner Fill Sample No.: 1SLF-17-R			Remarks:
 Amec Foster Wheeler			

Figure 1SLF-17-R

Tested By: EL Checked By: BR

COMPACTION TEST REPORT



Test specification: ASTM D 698-07 Method A Standard
 ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

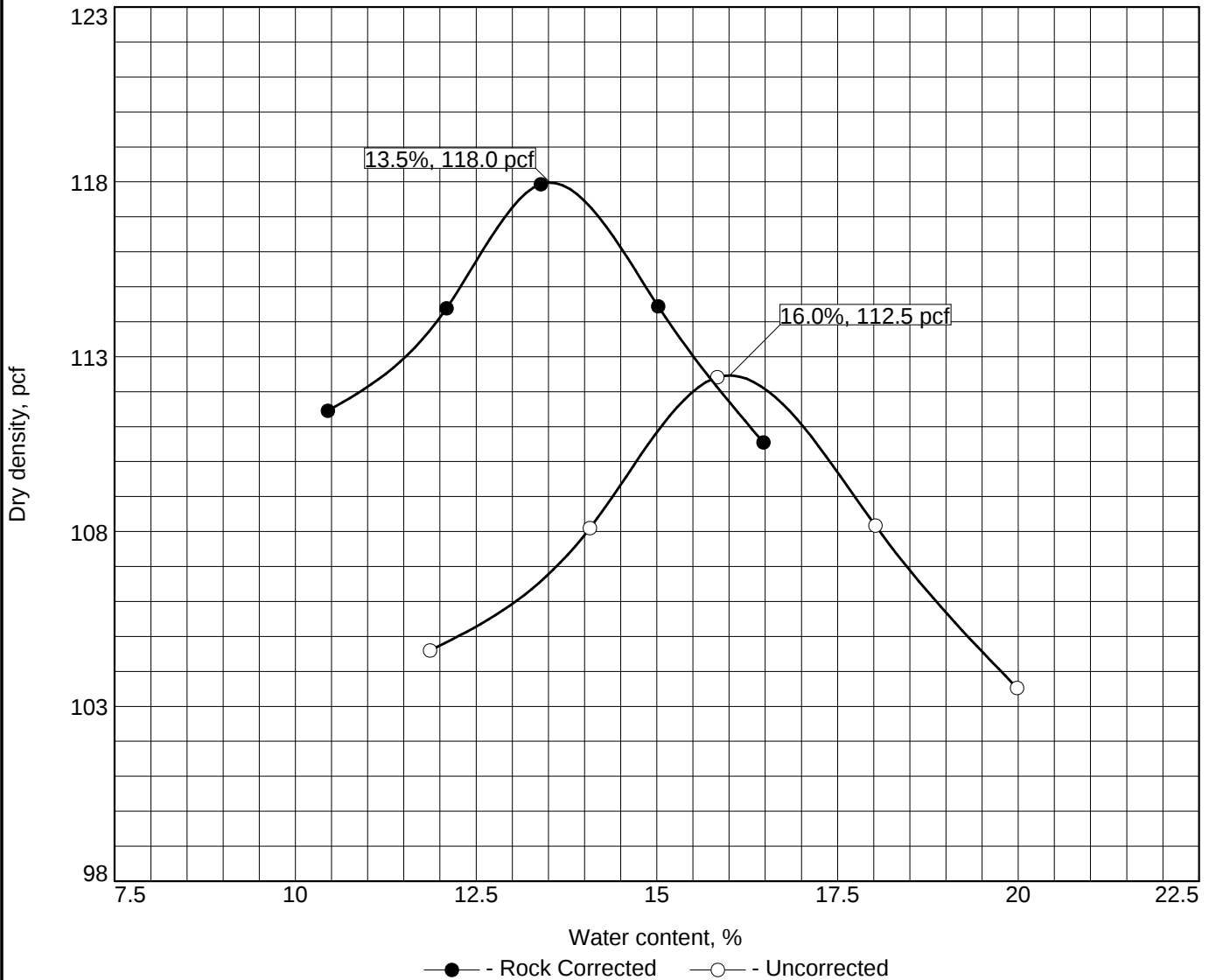
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	CL	A-6(8)	13.5		35	24	15.5	53.2

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 116.8 pcf		113.4 pcf	Brown sandy lean clay with gravel
Optimum moisture = 13.9 %		15.3 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch ☐ Source: Phase 1-Soil Liner Fill Sample No.: 1SLF-19-R			Remarks:
 Amec Foster Wheeler			

Figure 1SLF-19-R

Tested By: EL Checked By: BR

COMPACTION TEST REPORT



Test specification: ASTM D 698-07 Method A Standard
 ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

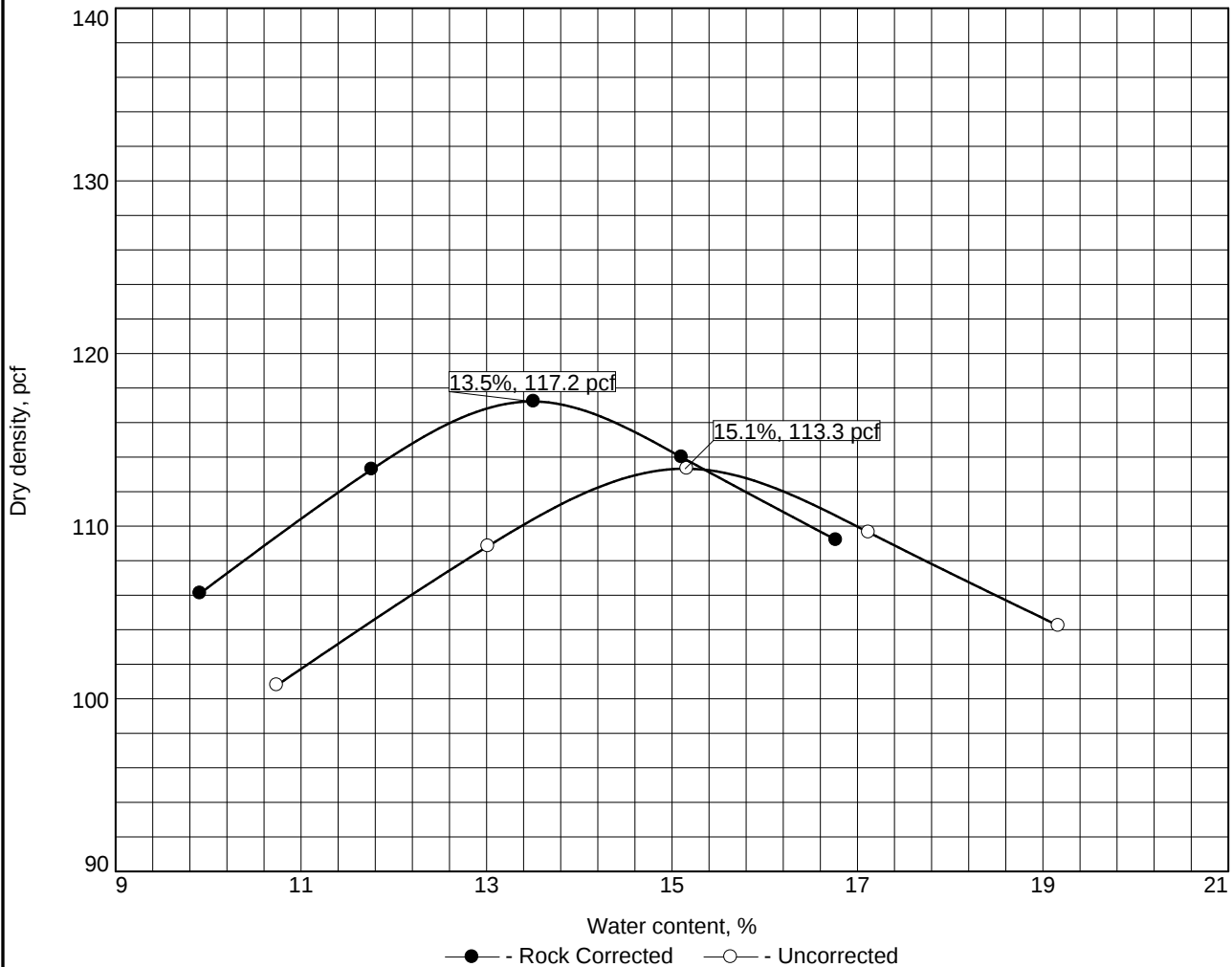
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	SC	A-6(6)	11.6		36	24	25.8	46.4

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 118.0 pcf		112.5 pcf	Brown clayey sand with gravel
Optimum moisture = 13.5 %		16.0 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch ○ Source: Phase 1-Soil Liner Fill Sample No.: 1SLF-21-R			Remarks:
 Amec Foster Wheeler			

Figure 1SLF-21-R

Tested By: EL Checked By: BR

COMPACTION TEST REPORT



Test specification: ASTM D 698-12 Method A Standard
 ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
	SC	A-6(6)	17.1		35	23	18.6	47.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 117.2 pcf		113.3 pcf	Brown clayey sand with gravel
Optimum moisture = 13.5 %		15.1 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch			Remarks:
○ Source of Sample: Phase 1-Soil Liner Fill Sample Number: 1SLF-32-R			
 Amec Foster Wheeler			

Figure 1SLF-32-R

Tested By: EL Checked By: BR

Appendix H.3

Soil Liner Fill Permeability Test Results

**Measurement of Hydraulic Conductivity of
Saturated Porous Material Using a
Flexible Wall Permeameter
(ASTM D5084-00)**



PROJECT: CC&V VLF
LOCATION: Phase 1
MATERIAL: Brown clayey sand with gravel
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST: Dry Density 113.1 at 12.1%

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: 1SLF-1-R
DATE SAMPLED: 9/27/2014

AVERAGE PERMEABILITY

5.25E-08 cm/sec

INITIAL LENGTH OF SPECIMEN			7.25 cm
INITIAL DIAMETER OF SPECIMEN			7.26 cm
INITIAL WATER CONTENT			12.4 %
INITIAL DRY UNIT WEIGHT			113.5 pcf
INITIAL VOLUME			300.1 cu.cm
PERMEANT LIQUID			Bottled Water
MAGNITUDE OF TOTAL BACK PRESSURE			60.0 psi
EFFECTIVE CONSOLIDATION STRESS			5.0 psi
RANGE OF HYDRAULIC GRADIENT USED	14.0	to	13.6
FINAL LENGTH OF SPECIMEN			7.31 cm
FINAL DIAMETER OF SPECIMEN			7.35 cm
FINAL WATER CONTENT			18.2 %
FINAL DRY UNIT WEIGHT			109.8 pcf
FINAL VOLUME			310.2 cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	75%	and	98%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION			2.610

TIME INTERVAL	K (cm/sec)	K (ft/yr)
1:52:08	3.30E-08	0.03
6:52:58	6.75E-08	0.07
9:21:27	6.02E-08	0.06
12:09:16	4.90E-08	0.05

REVIEWED BY

Measurement of Hydraulic Conductivity of Saturated Porous Material Using a Flexible Wall Permeameter (ASTM D5084-00)



PROJECT: CC&V VLF
LOCATION: Phase 1
MATERIAL: Brown clayey sand with gravel
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST: Dry Density 113.2 at 13.0%

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: 1SLF-2-R
DATE SAMPLED: 10/27/2014

AVERAGE PERMEABILITY

1.43E-07 cm/sec

INITIAL LENGTH OF SPECIMEN		7.25 cm
INITIAL DIAMETER OF SPECIMEN		7.27 cm
INITIAL WATER CONTENT		13.6 %
INITIAL DRY UNIT WEIGHT		113.0 pcf
INITIAL VOLUME		301.0 cu.cm
PERMEANT LIQUID		Bottled Water
MAGNITUDE OF TOTAL BACK PRESSURE		60.0 psi
EFFECTIVE CONSOLIDATION STRESS		5.0 psi
RANGE OF HYDRAULIC GRADIENT USED	11.1	to 16.7
FINAL LENGTH OF SPECIMEN		7.31 cm
FINAL DIAMETER OF SPECIMEN		7.27 cm
FINAL WATER CONTENT		18.6 %
FINAL DRY UNIT WEIGHT		112.1 pcf
FINAL VOLUME		303.4 cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	72%	and 96%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION		2.760

TIME INTERVAL	K (cm/sec)	K (ft/yr)
6:13:19	3.42E-07	0.35
9:28:19	9.46E-08	0.10
11:53:38	5.21E-08	0.05
16:20:19	8.50E-08	0.09

REVIEWED BY

Measurement of Hydraulic Conductivity of Saturated Porous Material Using a Flexible Wall Permeameter (ASTM D5084-00)



PROJECT: CC&V VLF
LOCATION: Phase 1
MATERIAL: Brown clayey sand with gravel
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST: Dry Density 110.9 at 12.5%

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: 1SLF-3-R
DATE SAMPLED: 10/27/2014

AVERAGE PERMEABILITY

1.49E-07 cm/sec

INITIAL LENGTH OF SPECIMEN			7.26 cm
INITIAL DIAMETER OF SPECIMEN			7.28 cm
INITIAL WATER CONTENT			12.7 %
INITIAL DRY UNIT WEIGHT			110.6 pcf
INITIAL VOLUME			302.2 cu.cm
PERMEANT LIQUID			Bottled Water
MAGNITUDE OF TOTAL BACK PRESSURE			60.0 psi
EFFECTIVE CONSOLIDATION STRESS			5.0 psi
RANGE OF HYDRAULIC GRADIENT USED	11.6	to	16.4
FINAL LENGTH OF SPECIMEN			7.32 cm
FINAL DIAMETER OF SPECIMEN			7.32 cm
FINAL WATER CONTENT			20.2 %
FINAL DRY UNIT WEIGHT			108.5 pcf
FINAL VOLUME			308.1 cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	63%	and	95%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION			2.760

TIME INTERVAL	K (cm/sec)	K (ft/yr)
5:27:58	3.63E-07	0.38
6:36:51	1.25E-07	0.13
10:00:15	4.80E-08	0.05
14:29:58	5.86E-08	0.06

REVIEWED BY

Measurement of Hydraulic Conductivity of Saturated Porous Material Using a Flexible Wall Permeameter (ASTM D5084-00)



PROJECT: CC&V VLF
LOCATION: Phase 1
MATERIAL: Brown sandy lean clay with gravel
SAMPLE SOURCE: Soil Liner Fill
DENSITY TEST: Dry Density 115.1 at 13.6%

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: 1SLF-4-R
DATE SAMPLED: 3/28/2015

AVERAGE PERMEABILITY

1.91E-07 cm/sec

INITIAL LENGTH OF SPECIMEN		7.32 cm
INITIAL DIAMETER OF SPECIMEN		7.28 cm
INITIAL WATER CONTENT		15.6 %
INITIAL DRY UNIT WEIGHT		114.0 pcf
INITIAL VOLUME		304.1 cu.cm
PERMEANT LIQUID		Bottled Water
MAGNITUDE OF TOTAL BACK PRESSURE		60.0 psi
EFFECTIVE CONSOLIDATION STRESS		5.0 psi
RANGE OF HYDRAULIC GRADIENT USED	7.0	to 2.8
FINAL LENGTH OF SPECIMEN		7.25 cm
FINAL DIAMETER OF SPECIMEN		7.34 cm
FINAL WATER CONTENT		17.1 %
FINAL DRY UNIT WEIGHT		113.0 pcf
FINAL VOLUME		306.8 cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	96%	and 102%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION		2.600

TIME INTERVAL	K (cm/sec)	K (ft/yr)
1:00:00	1.79E-07	0.19
3:00:00	1.84E-07	0.19
7:00:00	1.56E-07	0.16
9:25:00	2.43E-07	0.25

REVIEWED BY

**Measurement of Hydraulic Conductivity of
Saturated Porous Material Using a
Flexible Wall Permeameter
(ASTM D5084-00)**



PROJECT: CC&V SGVLF
LOCATION: Phase 1
MATERIAL: Brown sandy lean clay with gravel
SAMPLE SOURCE: Soil Liner Fill
DENSITY TEST: Dry Density 114.3 at 13.8% Moisture

JOB NO: 74201125N0.****.****
WORK ORDER NO:
LAB NO: 1SLF-5-R
DATE SAMPLED: 4/14/2015

AVERAGE PERMEABILITY

7.38E-07 cm/sec

INITIAL LENGTH OF SPECIMEN			7.34 cm
INITIAL DIAMETER OF SPECIMEN			7.32 cm
INITIAL WATER CONTENT			13.5 %
INITIAL DRY UNIT WEIGHT			112.0 pcf
INITIAL VOLUME			308.7 cu.cm
PERMEANT LIQUID			Bottled Water
MAGNITUDE OF TOTAL BACK PRESSURE			50.0 psi
EFFECTIVE CONSOLIDATION STRESS			5.0 psi
RANGE OF HYDRAULIC GRADIENT USED	9.9	to	3.1
FINAL LENGTH OF SPECIMEN			7.34 cm
FINAL DIAMETER OF SPECIMEN			7.37 cm
FINAL WATER CONTENT			19.2 %
FINAL DRY UNIT WEIGHT			110.4 pcf
FINAL VOLUME			313.1 cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	78%	and	106%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION			2.600

TIME INTERVAL	K (cm/sec)	K (ft/yr)
14:31:00	8.12E-07	0.84
16:15:00	8.34E-07	0.86
18:20:00	7.24E-07	0.75
19:40:00	5.83E-07	0.60

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**Measurement of Hydraulic Conductivity of
Saturated Porous Material Using a
Flexible Wall Permeameter
(ASTM D5084-00)**



PROJECT: CC&V SGVLF
LOCATION: Phase 1
MATERIAL: Brown sandy lean clay with gravel
SAMPLE SOURCE: Soil Liner Fill
DENSITY TEST: Dry Density 114.9 at 14.6% Moisture

JOB NO: 74201125N0.****.****
WORK ORDER NO:
LAB NO: 1SLF-6-R
DATE SAMPLED: 5/7/2015

AVERAGE PERMEABILITY

3.56E-07 cm/sec

INITIAL LENGTH OF SPECIMEN			7.26 cm
INITIAL DIAMETER OF SPECIMEN			7.30 cm
INITIAL WATER CONTENT			0.8 %
INITIAL DRY UNIT WEIGHT			130.7 pcf
INITIAL VOLUME			303.9 cu.cm
PERMEANT LIQUID			Bottled Water
MAGNITUDE OF TOTAL BACK PRESSURE			50.0 psi
EFFECTIVE CONSOLIDATION STRESS			5.0 psi
RANGE OF HYDRAULIC GRADIENT USED	11.0	to	4.2
FINAL LENGTH OF SPECIMEN			7.26 cm
FINAL DIAMETER OF SPECIMEN			7.39 cm
FINAL WATER CONTENT			2.5 %
FINAL DRY UNIT WEIGHT			127.6 pcf
FINAL VOLUME			311.4 cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	9%	and	24%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION			2.600

TIME INTERVAL	K (cm/sec)	K (ft/yr)
15:00:00	5.32E-07	0.55
17:15:00	3.89E-07	0.40
19:26:00	2.70E-07	0.28
20:42:00	2.32E-07	0.24

REVIEWED BY

**Measurement of Hydraulic Conductivity of
Saturated Porous Material Using a
Flexible Wall Permeameter
(ASTM D5084-00)**



PROJECT: CC&V SGVLF
LOCATION: Phase 1
MATERIAL: Brown sandy lean clay with gravel
SAMPLE SOURCE: Soil Liner Fill
DENSITY TEST: Dry Density 113.5 at 14.0% Moisture

JOB NO: 74201125N0.****.****
WORK ORDER NO:
LAB NO: 1SLF-9-R
DATE SAMPLED: 5/30/2015

AVERAGE PERMEABILITY

1.90E-07 cm/sec

INITIAL LENGTH OF SPECIMEN			7.28 cm
INITIAL DIAMETER OF SPECIMEN			7.33 cm
INITIAL WATER CONTENT			14.2 %
INITIAL DRY UNIT WEIGHT			111.1 pcf
INITIAL VOLUME			307.2 cu.cm
PERMEANT LIQUID			Bottled Water
MAGNITUDE OF TOTAL BACK PRESSURE			45.0 psi
EFFECTIVE CONSOLIDATION STRESS			5.0 psi
RANGE OF HYDRAULIC GRADIENT USED	9.6	to	9.1
FINAL LENGTH OF SPECIMEN			7.29 cm
FINAL DIAMETER OF SPECIMEN			7.32 cm
FINAL WATER CONTENT			17.2 %
FINAL DRY UNIT WEIGHT			111.2 pcf
FINAL VOLUME			306.8 cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	80%	and	98%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION			2.600

TIME INTERVAL	K (cm/sec)	K (ft/yr)
17:00:00	2.70E-07	0.28
18:00:00	1.34E-07	0.14
19:00:00	2.12E-07	0.22
20:00:00	1.47E-07	0.15

REVIEWED BY

Measurement of Hydraulic Conductivity of Saturated Porous Material Using a Flexible Wall Permeameter (ASTM D5084-00)



PROJECT: CC&V VLF
LOCATION: Phase 1
MATERIAL: Brown sandy lean clay with gravel
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST: Dry Density 113.5 @ 14.1% Moisture

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: 1SLF-11-R
DATE SAMPLED: 6/9/2015

AVERAGE PERMEABILITY

2.96E-07 cm/sec

INITIAL LENGTH OF SPECIMEN			7.20 cm
INITIAL DIAMETER OF SPECIMEN			7.29 cm
INITIAL WATER CONTENT			14.2 %
INITIAL DRY UNIT WEIGHT			113.8 pcf
INITIAL VOLUME			300.5 cu.cm
PERMEANT LIQUID			Bottled Water
MAGNITUDE OF TOTAL BACK PRESSURE			45.0 psi
EFFECTIVE CONSOLIDATION STRESS			5.0 psi
RANGE OF HYDRAULIC GRADIENT USED	10.1	to	9.4
FINAL LENGTH OF SPECIMEN			7.23 cm
FINAL DIAMETER OF SPECIMEN			7.34 cm
FINAL WATER CONTENT			17.3 %
FINAL DRY UNIT WEIGHT			111.8 pcf
FINAL VOLUME			305.9 cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	88%	and	100%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION			2.590

TIME INTERVAL	K (cm/sec)	K (ft/yr)
18:00:00	5.13E-07	0.53
19:00:00	2.57E-07	0.27
20:00:00	2.72E-07	0.28
22:00:00	1.42E-07	0.15

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Measurement of Hydraulic Conductivity of Saturated Porous Material Using a Flexible Wall Permeameter (ASTM D5084-00)



PROJECT: CC&V VLF
LOCATION: Phase 1
MATERIAL: Brown sandy lean clay with gravel
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST: Dry Density 110.4 @ 12.7% Moisture

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: 1SLF-13-R
DATE SAMPLED: 6/9/2015

AVERAGE PERMEABILITY

2.21E-07 cm/sec

INITIAL LENGTH OF SPECIMEN			7.15 cm
INITIAL DIAMETER OF SPECIMEN			7.30 cm
INITIAL WATER CONTENT			12.4 %
INITIAL DRY UNIT WEIGHT			111.6 pcf
INITIAL VOLUME			299.3 cu.cm
PERMEANT LIQUID			Bottled Water
MAGNITUDE OF TOTAL BACK PRESSURE			50.0 psi
EFFECTIVE CONSOLIDATION STRESS			5.0 psi
RANGE OF HYDRAULIC GRADIENT USED	17.7	to	14.0
FINAL LENGTH OF SPECIMEN			7.23 cm
FINAL DIAMETER OF SPECIMEN			7.23 cm
FINAL WATER CONTENT			16.7 %
FINAL DRY UNIT WEIGHT			112.5 pcf
FINAL VOLUME			296.8 cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	72%	and	100%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION			2.580

TIME INTERVAL	K (cm/sec)	K (ft/yr)
20:00:00	1.55E-07	0.16
22:00:00	1.45E-07	0.15
0:00:00	2.21E-07	0.23
2:00:00	3.65E-07	0.38

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Measurement of Hydraulic Conductivity of Saturated Porous Material Using a Flexible Wall Permeameter (ASTM D5084-00)



PROJECT: CC&V VLF
LOCATION: Phase 1
MATERIAL: Brown sandy lean clay with gravel
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST: Dry Density 111.8 @ 13.2% Moisture

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: 1SLF-14-R
DATE SAMPLED: 6/23/2015

AVERAGE PERMEABILITY

7.47E-07 cm/sec

INITIAL LENGTH OF SPECIMEN			7.23 cm
INITIAL DIAMETER OF SPECIMEN			7.32 cm
INITIAL WATER CONTENT			13.1 %
INITIAL DRY UNIT WEIGHT			110.9 pcf
INITIAL VOLUME			304.3 cu.cm
PERMEANT LIQUID			Bottled Water
MAGNITUDE OF TOTAL BACK PRESSURE			50.0 psi
EFFECTIVE CONSOLIDATION STRESS			5.0 psi
RANGE OF HYDRAULIC GRADIENT USED	9.1	to	6.7
FINAL LENGTH OF SPECIMEN			7.23 cm
FINAL DIAMETER OF SPECIMEN			7.34 cm
FINAL WATER CONTENT			18.1 %
FINAL DRY UNIT WEIGHT			110.3 pcf
FINAL VOLUME			305.9 cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	74%	and	100%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION			2.600

TIME INTERVAL	K (cm/sec)	K (ft/yr)
15:00:00	5.53E-07	0.57
17:15:00	7.03E-07	0.73
19:26:00	8.40E-07	0.87
20:42:00	8.90E-07	0.92

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Measurement of Hydraulic Conductivity of Saturated Porous Material Using a Flexible Wall Permeameter (ASTM D5084-00)



PROJECT: CC&V VLF
LOCATION: Phase 1
MATERIAL: Brown clayey sand with gravel
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST: Dry Density 117.1 @ 11.4% Moisture

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: 1SLF-17-R
DATE SAMPLED: 7/16/2015

AVERAGE PERMEABILITY

8.65E-07 cm/sec

INITIAL LENGTH OF SPECIMEN			7.23 cm
INITIAL DIAMETER OF SPECIMEN			7.32 cm
INITIAL WATER CONTENT			12.3 %
INITIAL DRY UNIT WEIGHT			117.2 pcf
INITIAL VOLUME			304.3 cu.cm
PERMEANT LIQUID			Bottled Water
MAGNITUDE OF TOTAL BACK PRESSURE			50.0 psi
EFFECTIVE CONSOLIDATION STRESS			5.0 psi
RANGE OF HYDRAULIC GRADIENT USED	5.6	to	1.9
FINAL LENGTH OF SPECIMEN			7.23 cm
FINAL DIAMETER OF SPECIMEN			7.32 cm
FINAL WATER CONTENT			15.6 %
FINAL DRY UNIT WEIGHT			117.2 pcf
FINAL VOLUME			304.3 cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	79%	and	100%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION			2.660

TIME INTERVAL	K (cm/sec)	K (ft/yr)
0:00:00	1.13E-06	1.17
2:00:00	9.50E-07	0.98
4:00:00	1.04E-07	0.11
6:00:00	1.28E-06	1.32

REVIEWED BY

Measurement of Hydraulic Conductivity of Saturated Porous Material Using a Flexible Wall Permeameter (ASTM D5084-00)



PROJECT: CC&V SGVLF
LOCATION: Phase 1
MATERIAL: Brown clayey sand with gravel
SAMPLE SOURCE: Soil Liner Fill
DENSITY TEST: Dry Density 117.5 at 13.2% Moisture

JOB NO: 74201125N0.****.****
WORK ORDER NO:
LAB NO: 1SLF-32-R
DATE SAMPLED: 8/15/2015

AVERAGE PERMEABILITY

4.69E-08 cm/sec

INITIAL LENGTH OF SPECIMEN	7.12	cm
INITIAL DIAMETER OF SPECIMEN	7.30	cm
INITIAL WATER CONTENT	12.9	%
INITIAL DRY UNIT WEIGHT	120.2	pcf
INITIAL VOLUME	298.0	cu.cm
PERMEANT LIQUID	Bottled Water	
MAGNITUDE OF TOTAL BACK PRESSURE	60.0	psi
EFFECTIVE CONSOLIDATION STRESS	5.0	psi
RANGE OF HYDRAULIC GRADIENT USED	14.1	to 6.4
FINAL LENGTH OF SPECIMEN	7.30	cm
FINAL DIAMETER OF SPECIMEN	7.23	cm
FINAL WATER CONTENT	14.8	%
FINAL DRY UNIT WEIGHT	119.5	pcf
FINAL VOLUME	299.7	cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	89%	and 99%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION	2.680	

TIME INTERVAL	K (cm/sec)	K (ft/yr)
14:00:00	6.84E-08	0.07
0:00:00	1.92E-08	0.02
15:00:00	7.70E-08	0.08
10:00:00	2.31E-08	0.02

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