

Appendix H

Earthworks CQA Laboratory Test Results

Appendix H.1 – Grain Size Distribution and Atterberg Limits

Appendix H.2 – Compaction Testing

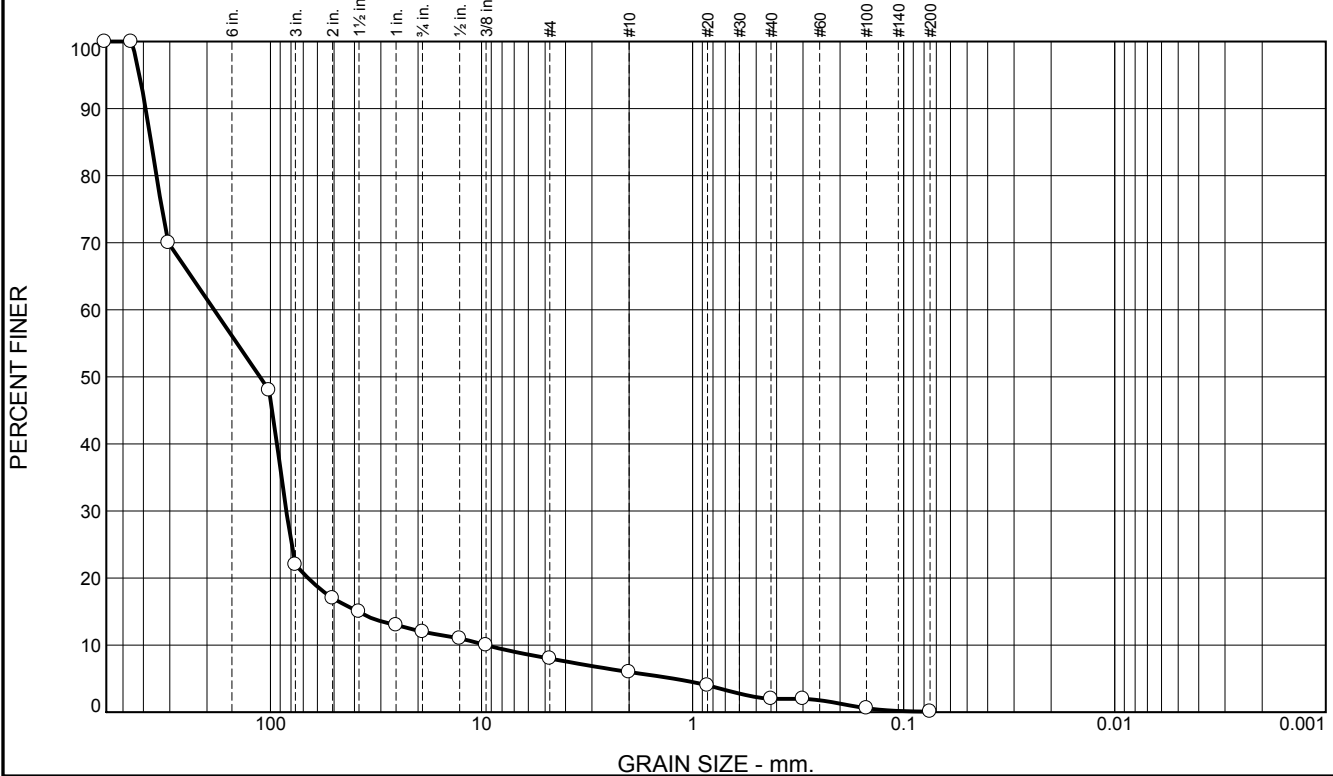
Appendix H.3 – Soil Liner Fill Permeability Test Results

Appendix H.1

Grain Size Distribution and Atterberg Limits

Structural Fill

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
78.0	10.0	4.0	2.0	4.0	1.9	0.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	70.0		
4"	48.0		
3"	22.0		
2"	17.0		
1.5"	15.0		
1"	13.0		
.75"	12.0		
.5"	11.0		
.375"	10.0		
#4	8.0		
#10	6.0		
#20	4.0		
#40	2.0		
#50	2.0		
#100	0.6		
#200	0.1		
		0.0 - 25.0	

Material Description

Medium brown poorly graded gravel with sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

USCS= GP AASHTO= A-1-a

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,428'

* Structural Fill

Source of Sample: Structural Fill
Sample Number: SF-11-R

Date: 2/27/2014



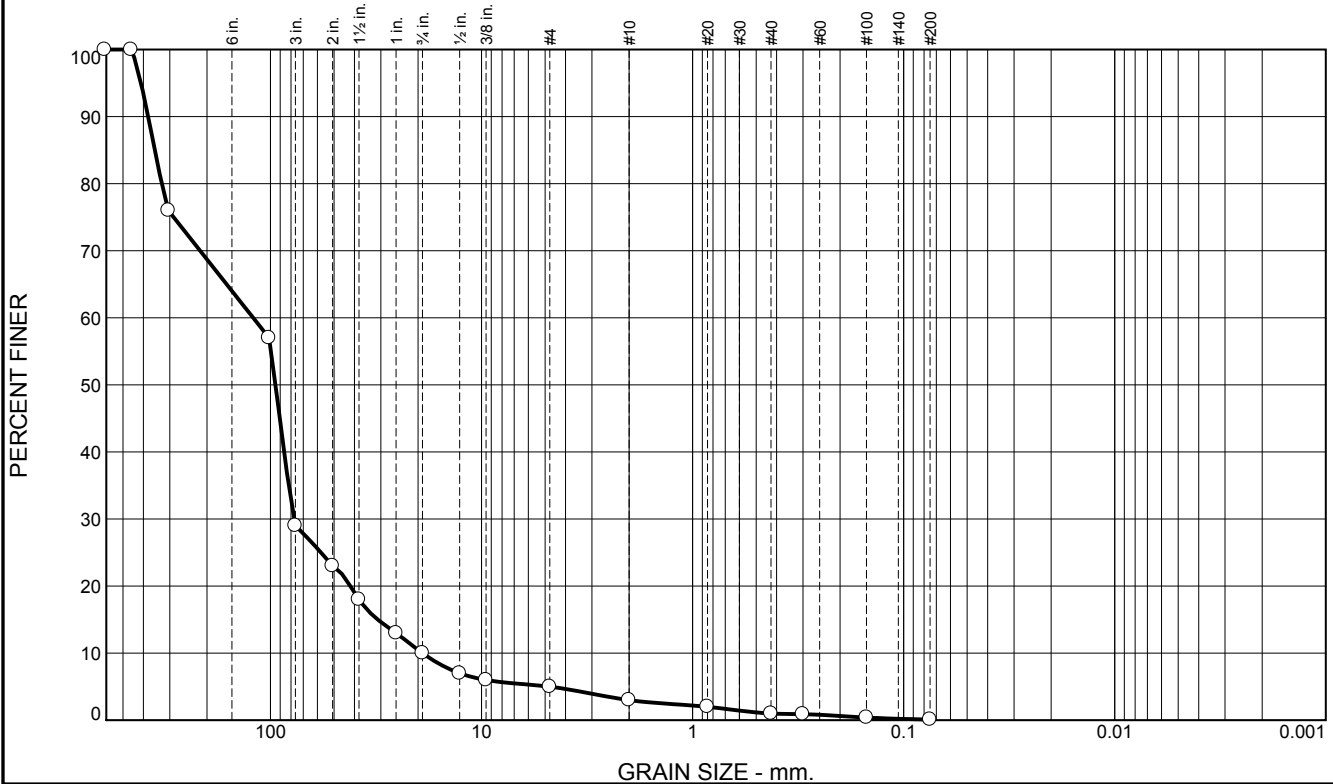
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-11-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
71.0	19.0	5.0	2.0	2.0	0.9	0.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	76.0		
4"	57.0		
3"	29.0		
2"	23.0		
1.5"	18.0		
1"	13.0		
.75"	10.0		
.5"	7.0		
.375"	6.0		
#4	5.0		
#10	3.0		
#20	2.0		
#40	1.0		
#50	0.9		
#100	0.4		
#200	0.1	0.0 - 25.0	

* Structural Fill

Material Description

Medium brown well-graded gravel with sand

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= GW

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment Fill at an elevation of 9,431'

Source of Sample: Structural Fill
Sample Number: SF-12-R

Date: 2/27/2014



Client: Cripple Creek & Victor Gold Mining Company

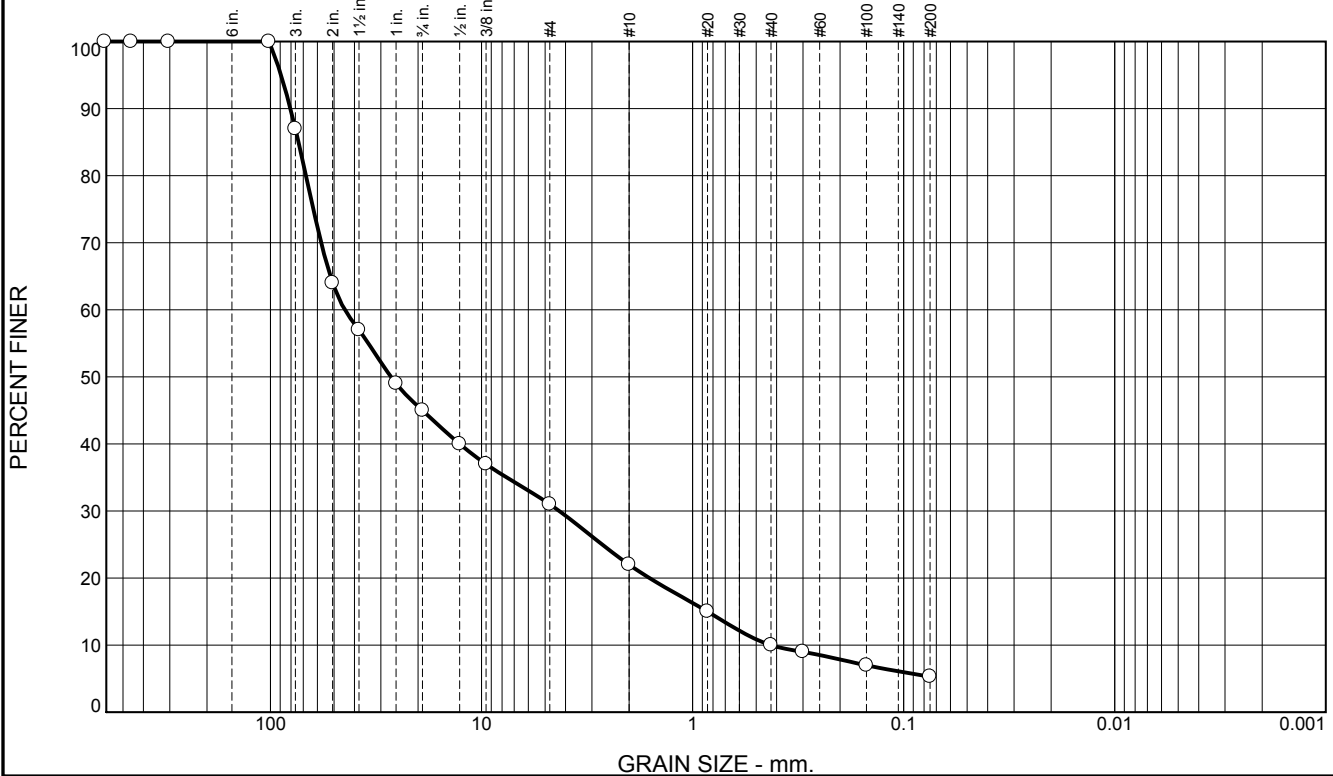
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-12-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
13.0	42.0	14.0	9.0	12.0	4.7	5.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	100.0		
4"	100.0		
3"	87.0		
2"	64.0		
1.5"	57.0		
1"	49.0		
.75"	45.0		
.5"	40.0		
.375"	37.0		
#4	31.0		
#10	22.0		
#20	15.0		
#40	10.0		
#50	9.0		
#100	7.0		
#200	5.3	0.0 - 25.0	

* Structural Fill

Material Description

Medium brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment Fill at an elevation of 9,425'

Source of Sample: Structural Fill
Sample Number: SF-13-R

Date: 2/27/2014



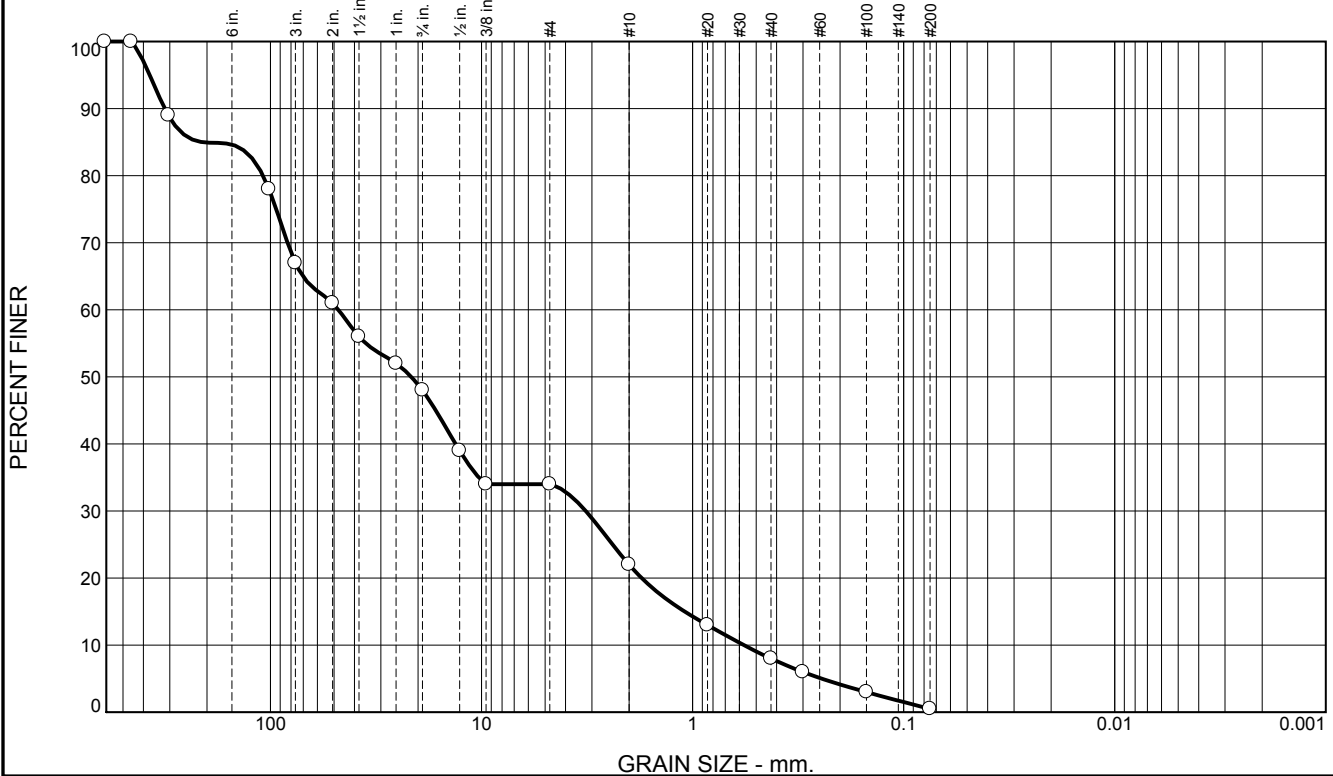
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-13-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
33.0	19.0	14.0	12.0	14.0	7.5	0.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	89.0		
4"	78.0		
3"	67.0		
2"	61.0		
1.5"	56.0		
1"	52.0		
.75"	48.0		
.5"	39.0		
.375"	34.0		
#4	34.0		
#10	22.0		
#20	13.0		
#40	8.0		
#50	6.0		
#100	3.0		
#200	0.5	0.0 - 25.0	

* Structural Fill

Material Description

Medium brown poorly graded sand with gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SP

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment Fill at an elevation of 9,425'

Source of Sample: Structural Fill
Sample Number: SF-14-R

Date: 2/27/2014



Client: Cripple Creek & Victor Gold Mining Company

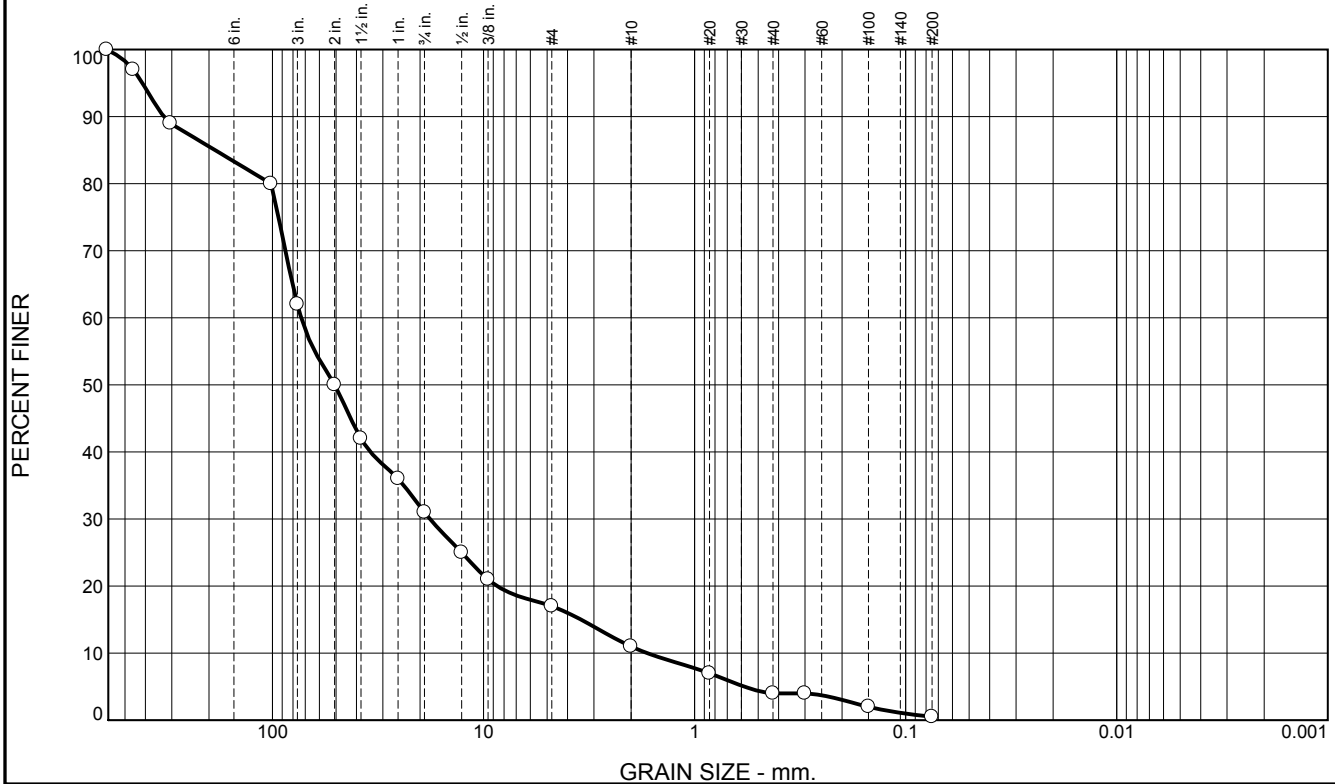
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-14-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
38.0	31.0	14.0	6.0	7.0	3.5	0.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	97.0		
12"	89.0		
4"	80.0		
3"	62.0		
2"	50.0		
1.5"	42.0		
1"	36.0		
.75"	31.0		
.5"	25.0		
.375"	21.0		
#4	17.0		
#10	11.0		
#20	7.0		
#40	4.0		
#50	4.0		
#100	2.0		
#200	0.5	0.0 - 25.0	

Material Description

Medium brown well-graded gravel with sand

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= GW

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment Fill at an elevation of 9,430'

* Structural Fill

Source of Sample: Structural Fill
Sample Number: SF-15-R

Date: 2/27/2014



Client: Cripple Creek & Victor Gold Mining Company

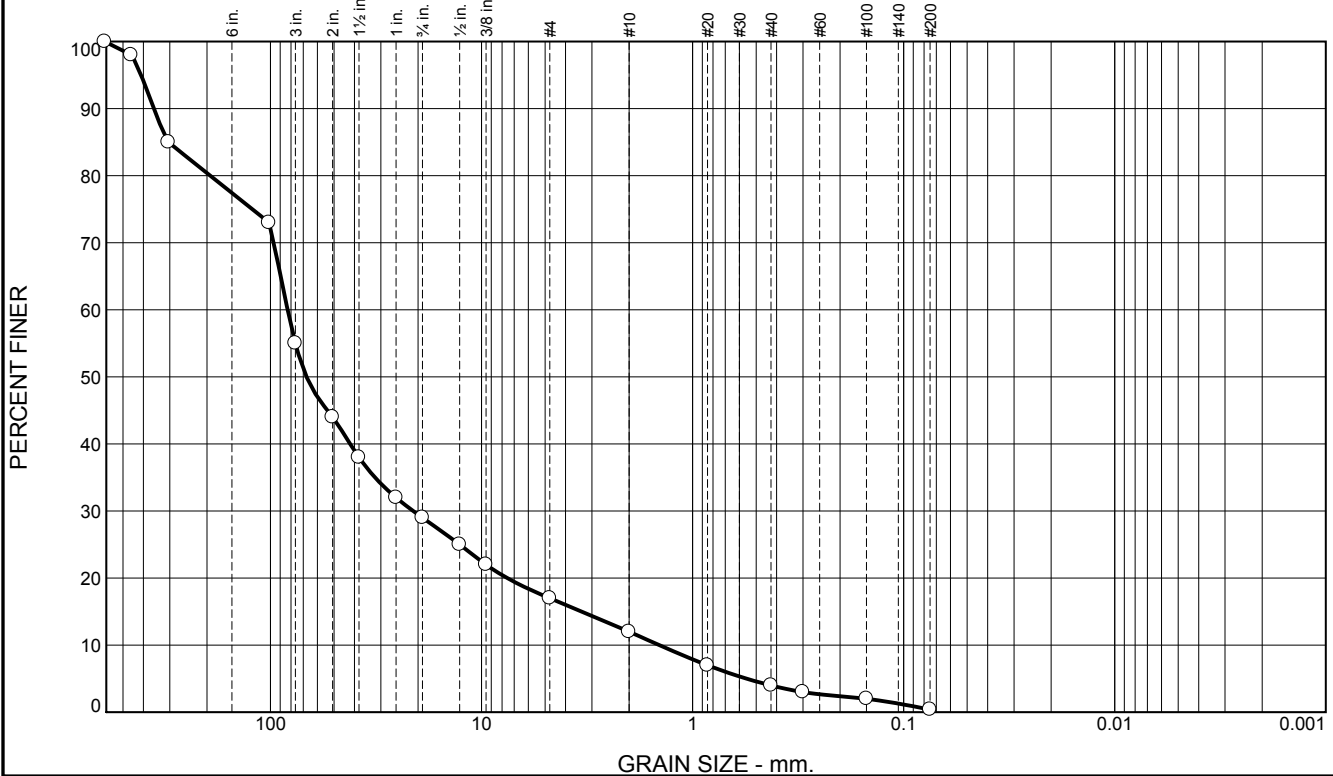
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-15-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
45.0	26.0	12.0	5.0	8.0	3.6	0.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	98.0		
12"	85.0		
4"	73.0		
3"	55.0		
2"	44.0		
1.5"	38.0		
1"	32.0		
.75"	29.0		
.5"	25.0		
.375"	22.0		
#4	17.0		
#10	12.0		
#20	7.0		
#40	4.0		
#50	3.0		
#100	2.0		
#200	0.4		
		0.0 - 25.0	

Material Description

Medium brown poorly graded gravel with sand

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= GP

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,435'

* Structural Fill

Source of Sample: Structural Fill
Sample Number: SF-16-R

Date: 2/27/2014



Client: Cripple Creek & Victor Gold Mining Company

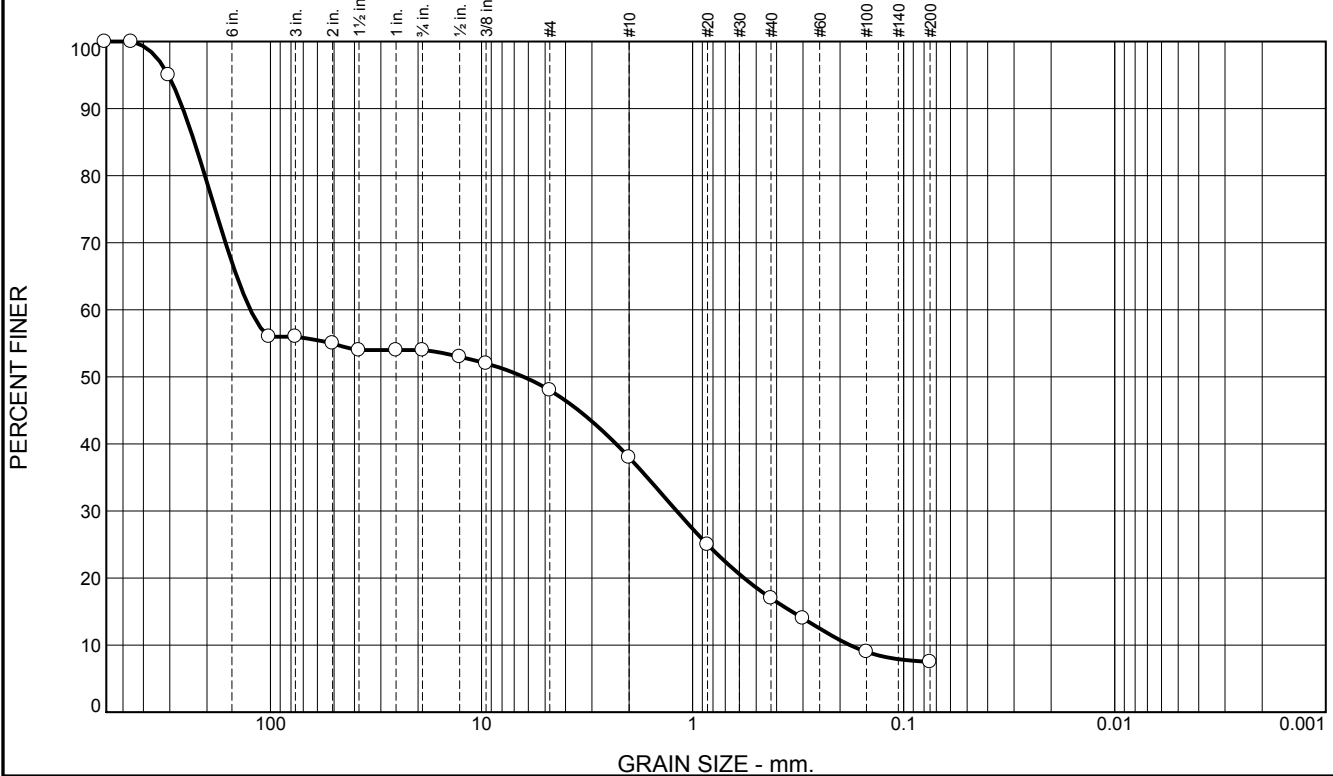
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-16-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
44.0	2.0	6.0	10.0	21.0	9.5	7.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	95.0		
4"	56.0		
3"	56.0		
2"	55.0		
1.5"	54.0		
1"	54.0		
.75"	54.0		
.5"	53.0		
.375"	52.0		
#4	48.0		
#10	38.0		
#20	25.0		
#40	17.0		
#50	14.0		
#100	9.0		
#200	7.5	0.0 - 25.0	

* Structural Fill

Material Description

Brown silty sand

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SM

AASHTO= A-1-b

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment Fill at an elevation of 9,460'

Source of Sample: Structural Fill
Sample Number: SF-38-R

Date: 3/11/2014



Client: Cripple Creek & Victor Gold Mining Company

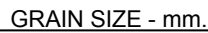
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-38-R

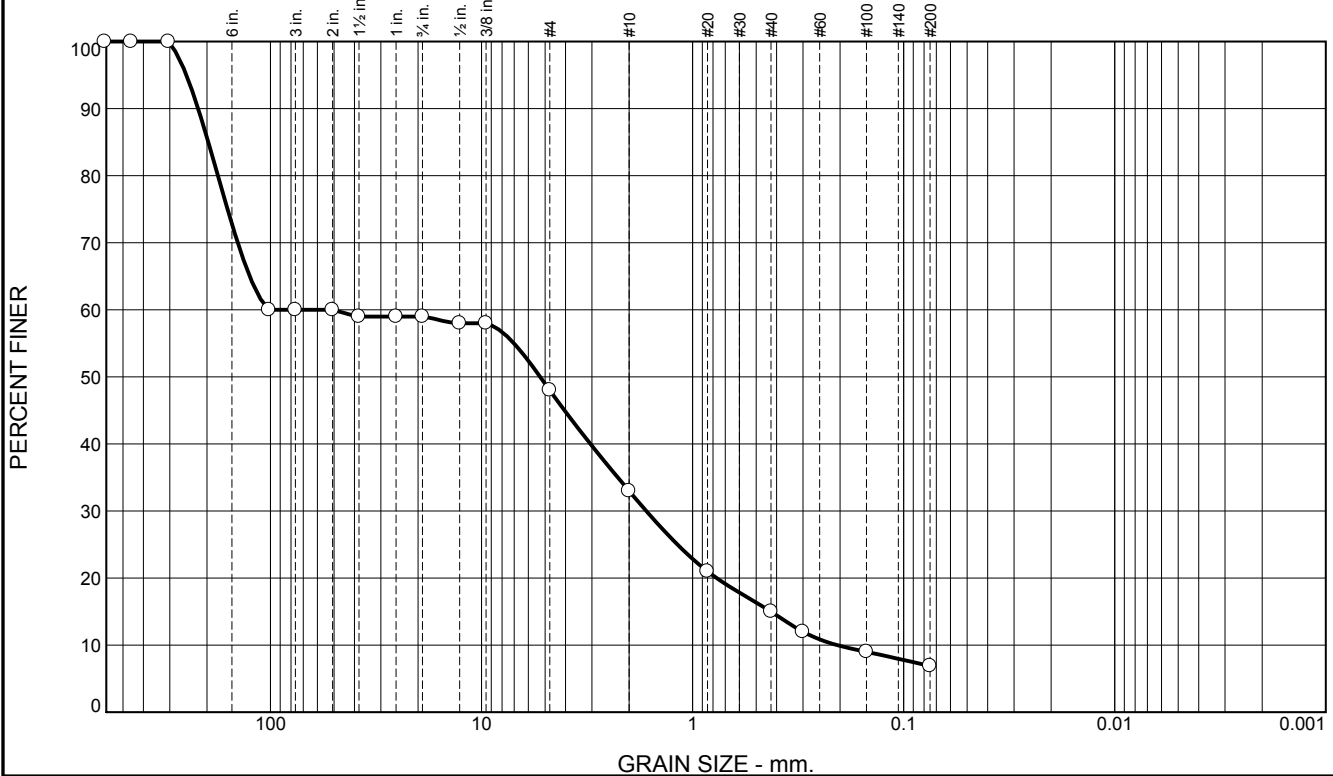
Tested By: RM Checked By: TB

PERCENT FINER



Tested By: RM **Checked By:** TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
40.0	1.0	11.0	15.0	18.0	8.1	6.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	100.0		
4"	60.0		
3"	60.0		
2"	60.0		
1.5"	59.0		
1"	59.0		
.75"	59.0		
.5"	58.0		
.375"	58.0		
#4	48.0		
#10	33.0		
#20	21.0		
#40	15.0		
#50	12.0		
#100	9.0		
#200	6.9	0.0 - 25.0	

* Structural Fill

Material Description

Brown poorly graded sand with silt and gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SP-SM

AASHTO= A-1-b

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,472'

Source of Sample: Structural Fill
Sample Number: SF-40-R

Date: 3/12/2014



Client: Cripple Creek & Victor Gold Mining Company

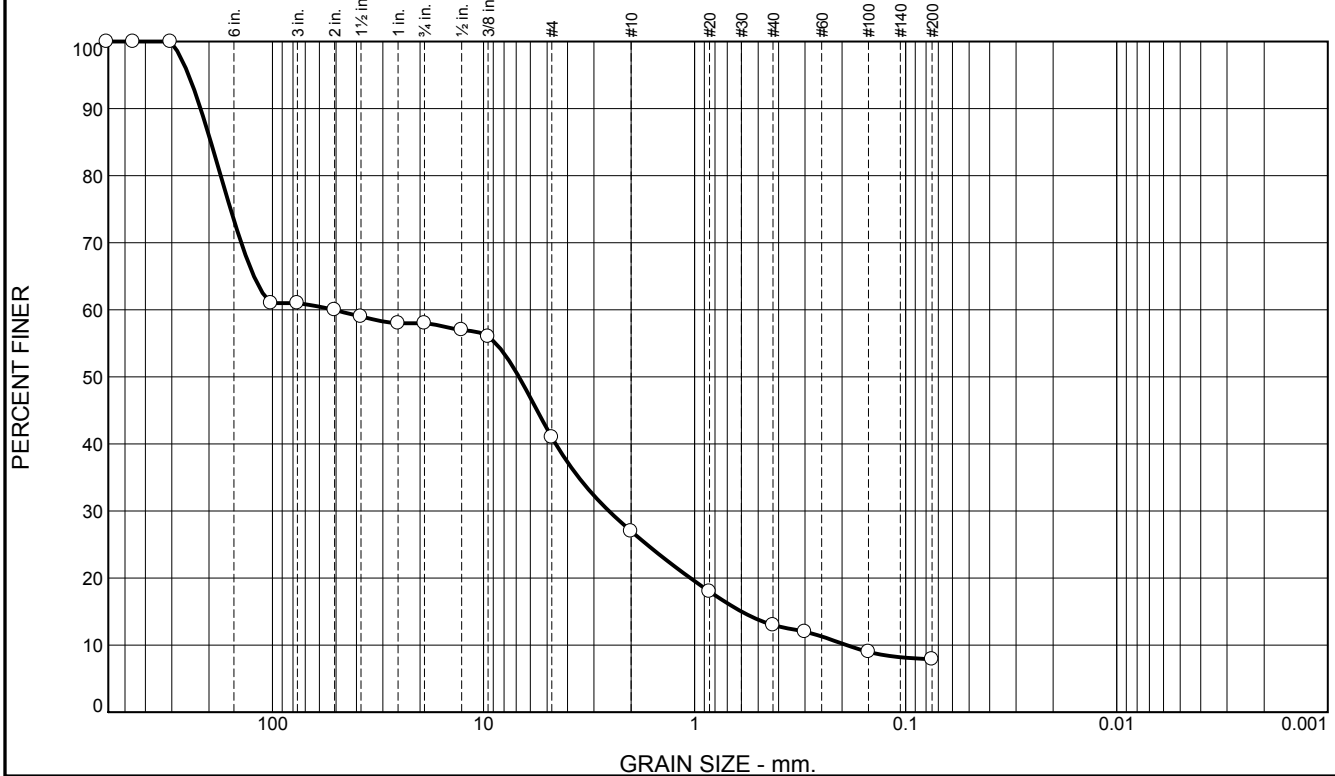
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-40-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
39.0	3.0	17.0	14.0	14.0	5.1	7.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	100.0		
4"	61.0		
3"	61.0		
2"	60.0		
1.5"	59.0		
1"	58.0		
.75"	58.0		
.5"	57.0		
.375"	56.0		
#4	41.0		
#10	27.0		
#20	18.0		
#40	13.0		
#50	12.0		
#100	9.0		
#200	7.9	0.0 - 25.0	

Material Description

Brown silty sand with gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SM

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,293'

* Structural Fill

Source of Sample: Structural Fill
Sample Number: SF-41-R

Date: 3/12/2014



Client: Cripple Creek & Victor Gold Mining Company

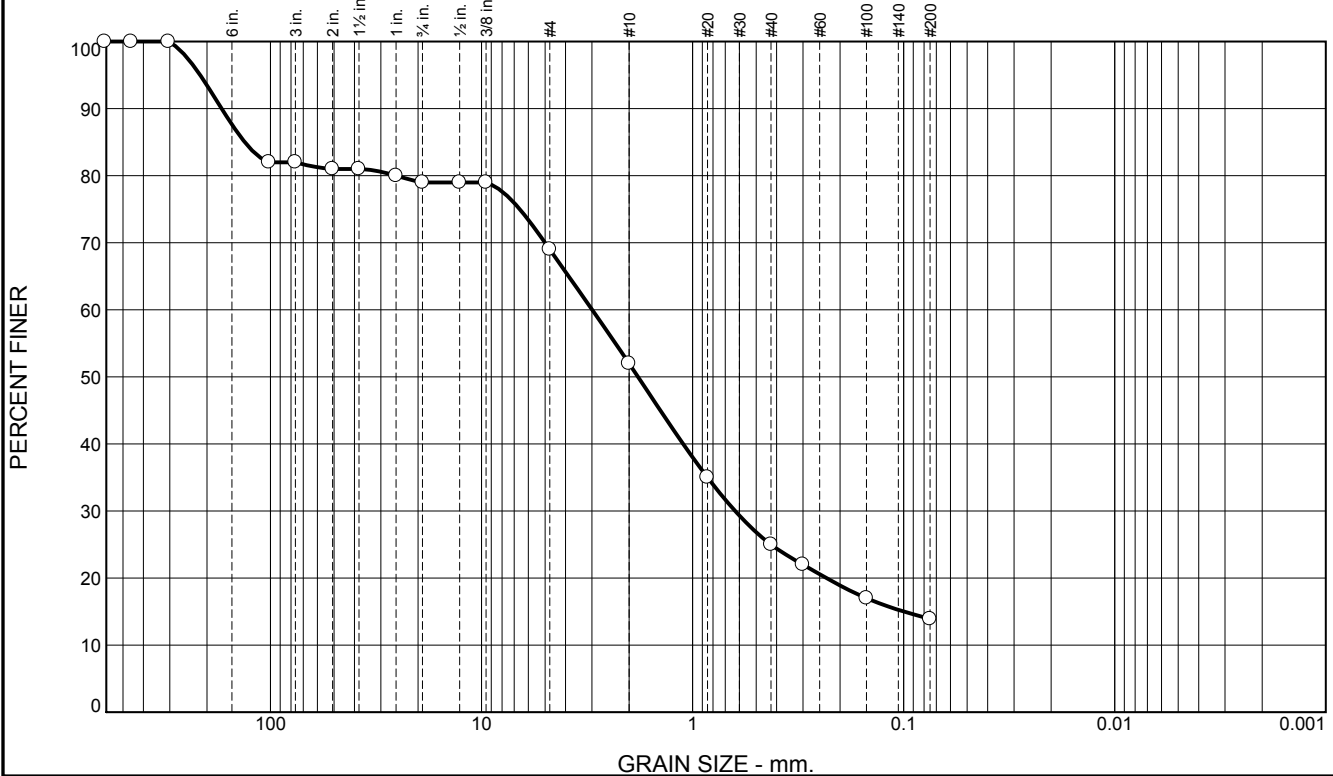
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-41-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
18.0	3.0	10.0	17.0	27.0	11.1	13.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	100.0		
4"	82.0		
3"	82.0		
2"	81.0		
1.5"	81.0		
1"	80.0		
.75"	79.0		
.5"	79.0		
.375"	79.0		
#4	69.0		
#10	52.0		
#20	35.0		
#40	25.0		
#50	22.0		
#100	17.0		
#200	13.9	0.0 - 25.0	

* Structural Fill

Material Description

Brown silty sand with gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SM

AASHTO= A-1-b

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,470'

Source of Sample: Structural Fill
Sample Number: SF-42-R

Date: 3/12/2014



Client: Cripple Creek & Victor Gold Mining Company

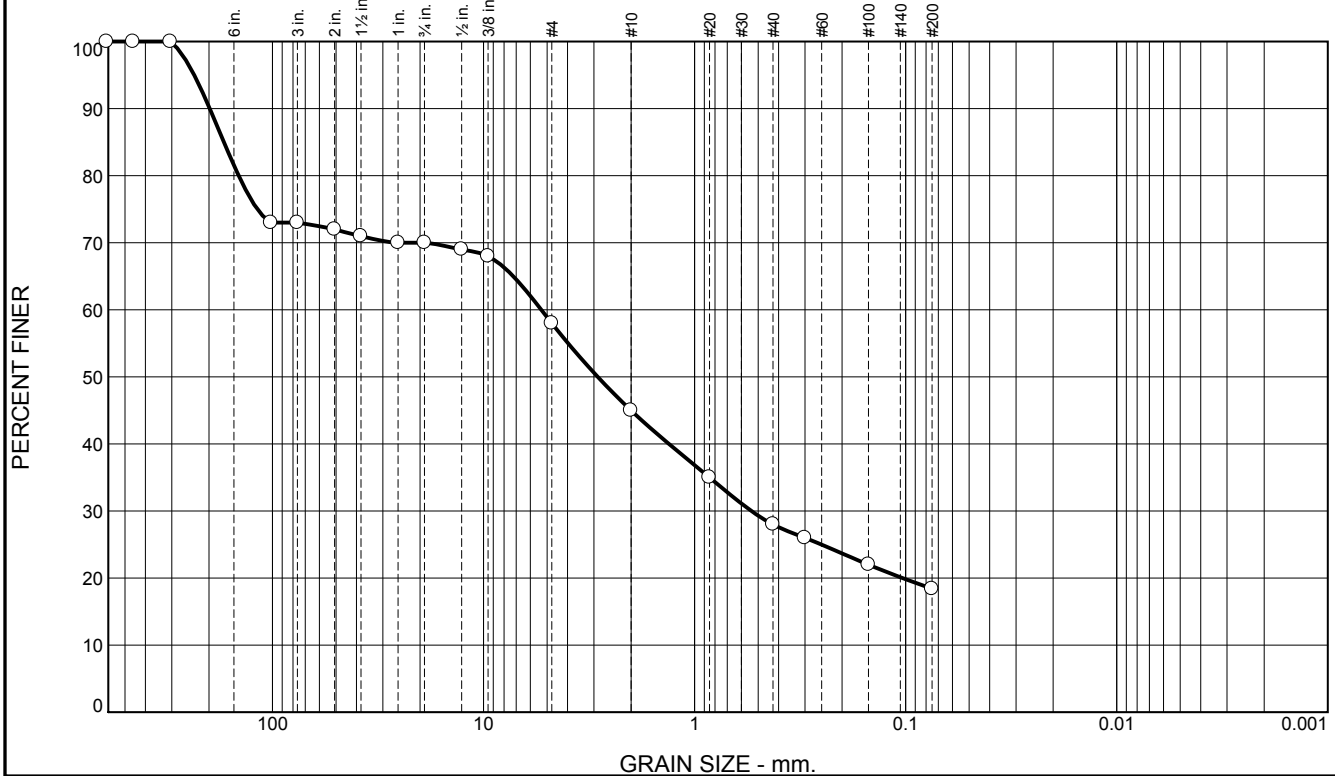
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-42-R

Tested By: Rm Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
27.0	3.0	12.0	13.0	17.0	9.6	18.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	100.0		
4"	73.0		
3"	73.0		
2"	72.0		
1.5"	71.0		
1"	70.0		
.75"	70.0		
.5"	69.0		
.375"	68.0		
#4	58.0		
#10	45.0		
#20	35.0		
#40	28.0		
#50	26.0		
#100	22.0		
#200	18.4	0.0 - 25.0	

* Structural Fill

Material Description

Brown silty sand with gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SM

AASHTO= A-1-b

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,469'

Source of Sample: Structural Fill
Sample Number: SF-43-R

Date: 3/12/2014



Client: Cripple Creek & Victor Gold Mining Company

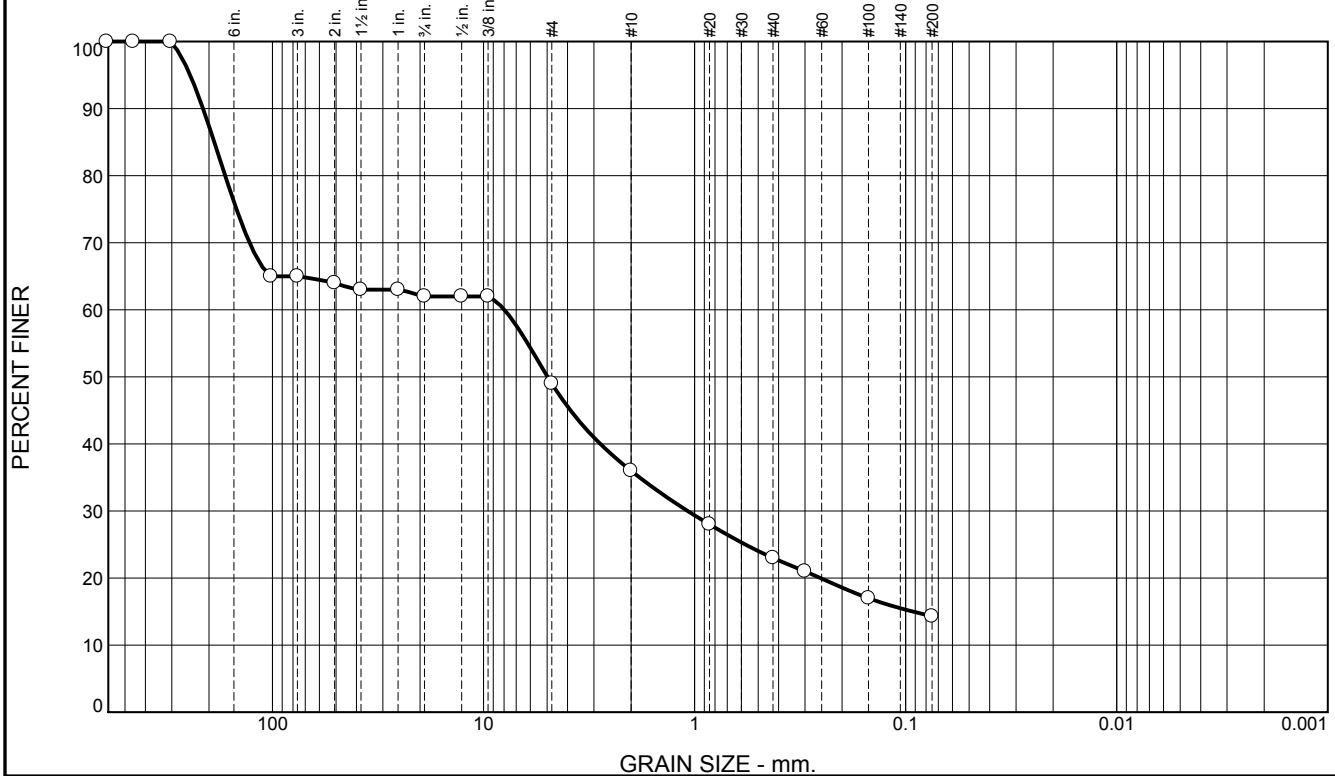
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-43-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
35.0	3.0	13.0	13.0	13.0	8.7	14.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	100.0		
4"	65.0		
3"	65.0		
2"	64.0		
1.5"	63.0		
1"	63.0		
.75"	62.0		
.5"	62.0		
.375"	62.0		
#4	49.0		
#10	36.0		
#20	28.0		
#40	23.0		
#50	21.0		
#100	17.0		
#200	14.3		
		0.0 - 25.0	

* Structural Fill

Material Description

Brown silty sand with gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SM

AASHTO= A-1-b

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,465'

Source of Sample: Structural Fill
Sample Number: SF-44-R

Date: 3/12/2014



Client: Cripple Creek & Victor Gold Mining Company

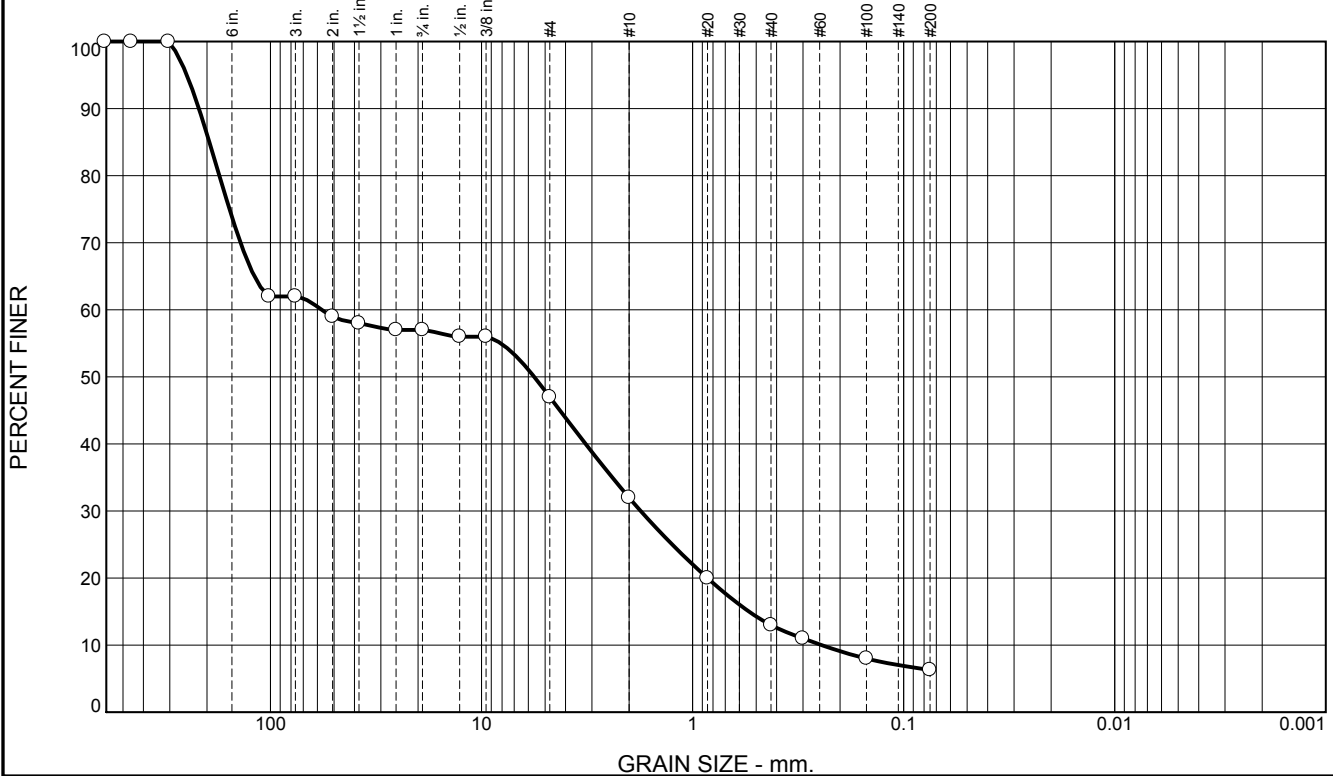
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-44-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
38.0	5.0	10.0	15.0	19.0	6.7	6.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	100.0		
4"	62.0		
3"	62.0		
2"	59.0		
1.5"	58.0		
1"	57.0		
.75"	57.0		
.5"	56.0		
.375"	56.0		
#4	47.0		
#10	32.0		
#20	20.0		
#40	13.0		
#50	11.0		
#100	8.0		
#200	6.3	0.0 - 25.0	

* Structural Fill

Material Description

Brown poorly graded sand with silt and gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,464'

Source of Sample: Structural Fill
Sample Number: SF-45-R

Date: 3/12/2014



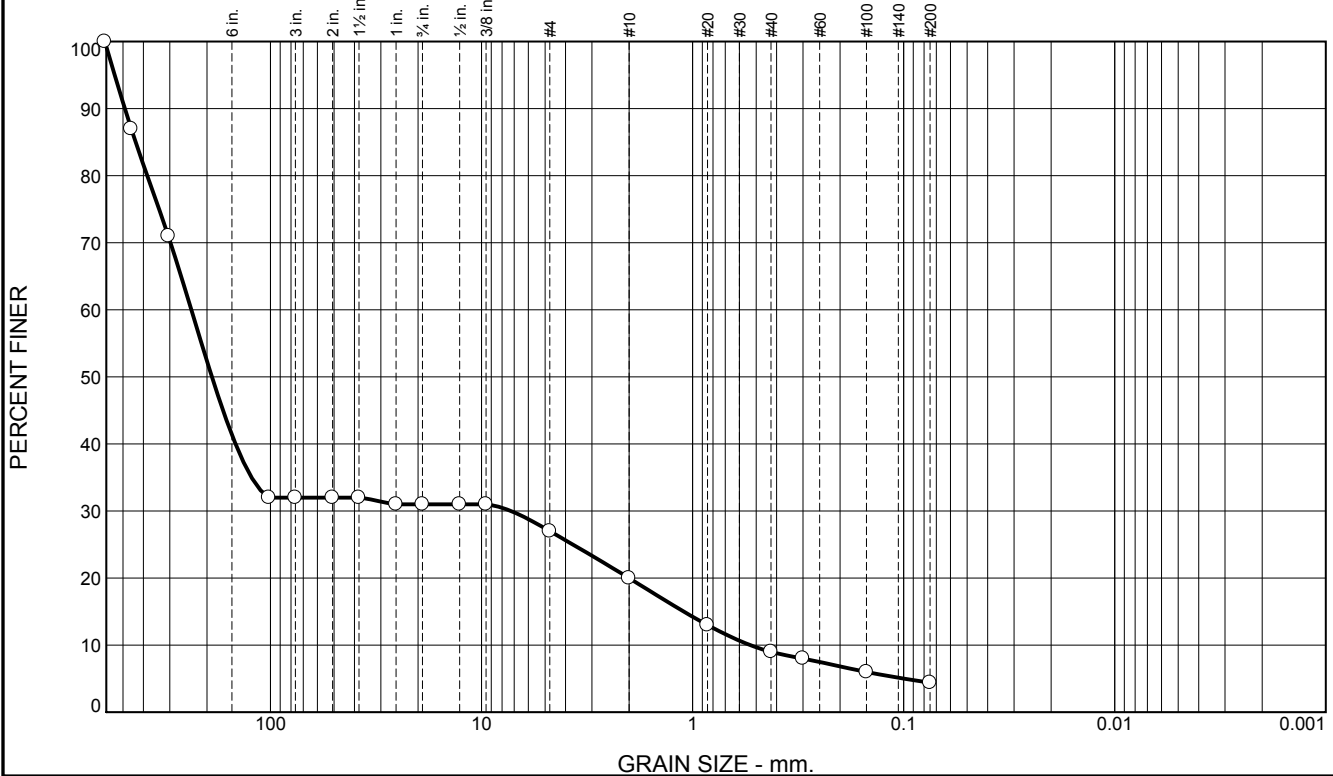
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-45-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
68.0	1.0	4.0	7.0	11.0	4.6	4.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	87.0		
12"	71.0		
4"	32.0		
3"	32.0		
2"	32.0		
1.5"	32.0		
1"	31.0		
.75"	31.0		
.5"	31.0		
.375"	31.0		
#4	27.0		
#10	20.0		
#20	13.0		
#40	9.0		
#50	8.0		
#100	6.0		
#200	4.4	0.0 - 25.0	

* Structural Fill

Material Description

Brown silty sand with gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SM

AASHTO= A-1-b

Remarks

Sample obtained from the PSSA Pond Sump Fill

Source of Sample: Structural Fill
Sample Number: SF-48-R

Date: 3/27/2014



Client: Cripple Creek & Victor Gold Mining Company

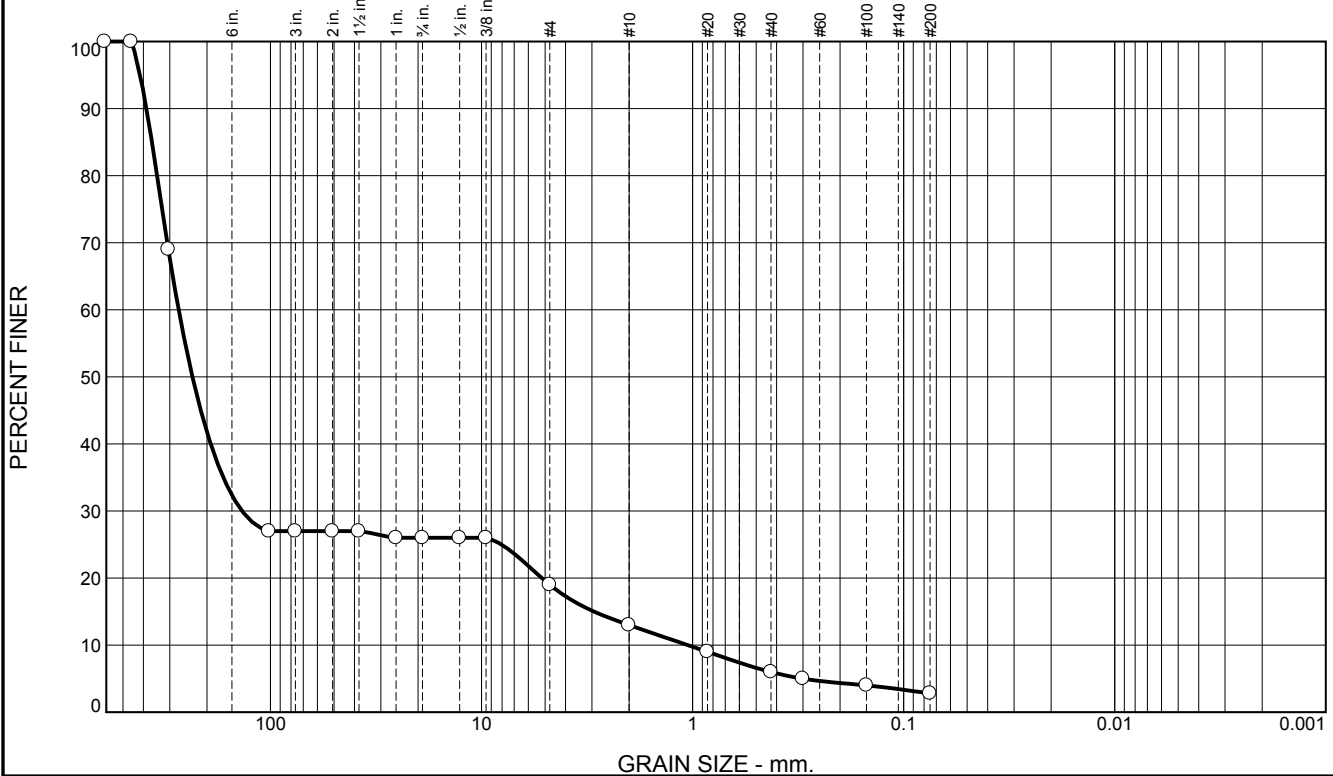
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-48-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
73.0	1.0	7.0	6.0	7.0	3.2	2.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	69.0		
4"	27.0		
3"	27.0		
2"	27.0		
1.5"	27.0		
1"	26.0		
.75"	26.0		
.5"	26.0		
.375"	26.0		
#4	19.0		
#10	13.0		
#20	9.0		
#40	6.0		
#50	5.0		
#100	4.0		
#200	2.8	0.0 - 25.0	

* Structural Fill

Material Description

Brown poorly graded sand with silt and gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA Pond Sump Fill

Source of Sample: Structural Fill
Sample Number: SF-49-R

Date: 3/27/2014



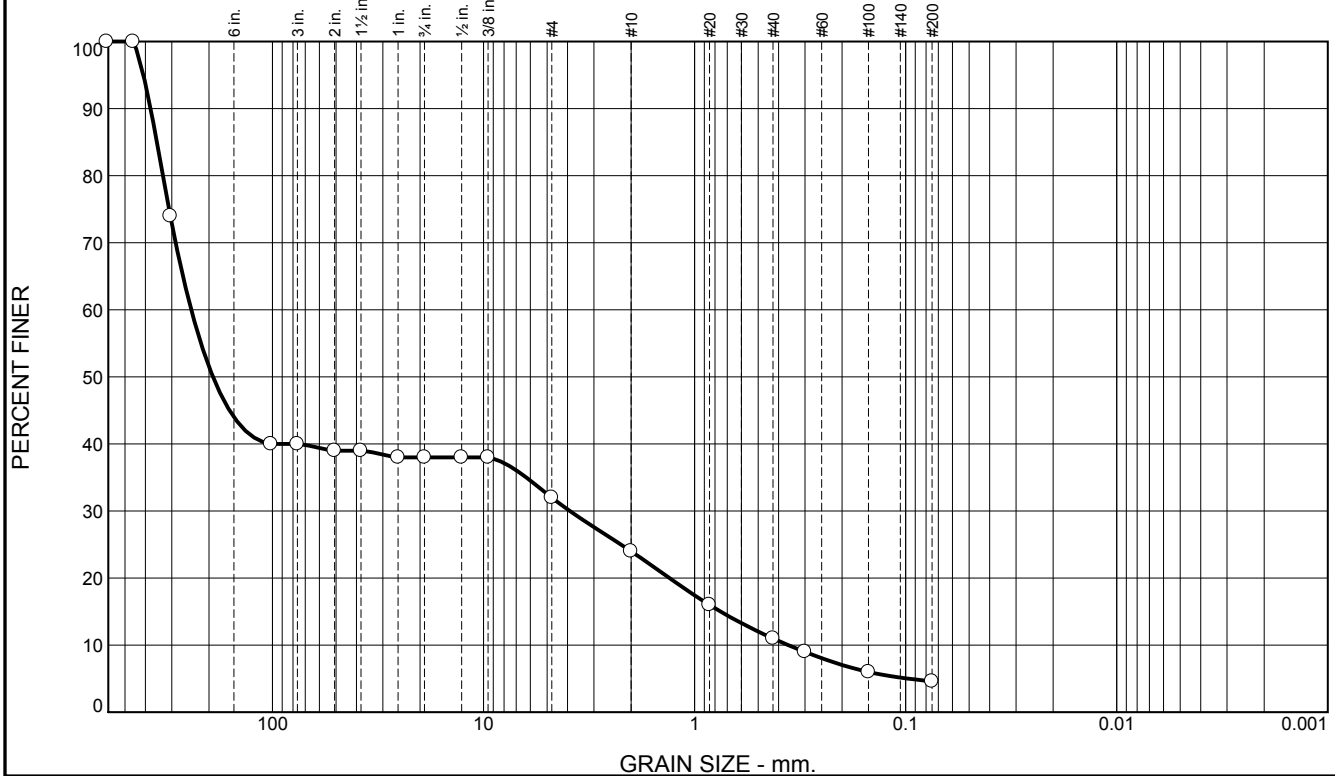
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-49-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
60.0	2.0	6.0	8.0	13.0	6.4	4.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	74.0		
4"	40.0		
3"	40.0		
2"	39.0		
1.5"	39.0		
1"	38.0		
.75"	38.0		
.5"	38.0		
.375"	38.0		
#4	32.0		
#10	24.0		
#20	16.0		
#40	11.0		
#50	9.0		
#100	6.0		
#200	4.6		
		0.0 - 25.0	

* Structural Fill

Material Description

Brown poorly graded sand with silt and gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SP-SM

AASHTO= A-1-b

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,438'

Source of Sample: Structural Fill
Sample Number: SF-50-R

Date: 3/27/2014



Client: Cripple Creek & Victor Gold Mining Company

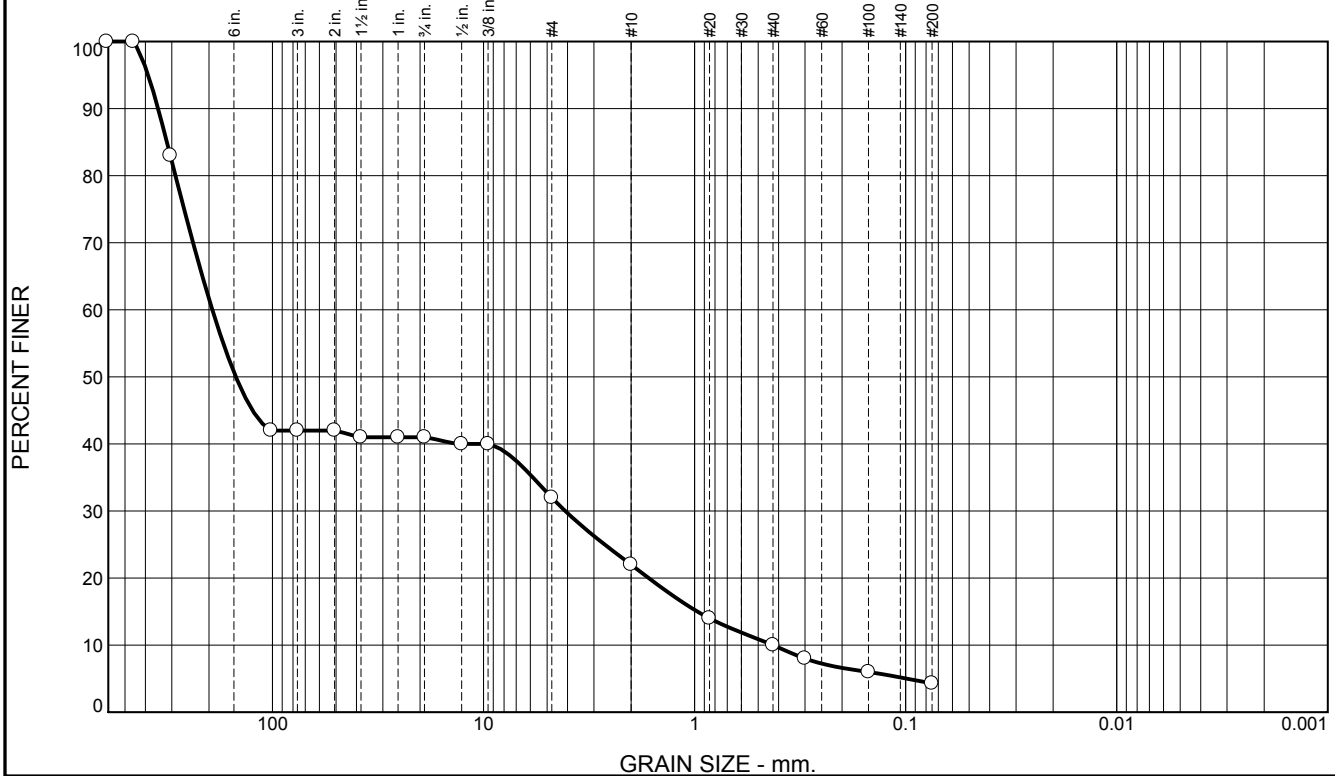
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-50-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
58.0	1.0	9.0	10.0	12.0	5.7	4.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	83.0		
4"	42.0		
3"	42.0		
2"	42.0		
1.5"	41.0		
1"	41.0		
.75"	41.0		
.5"	40.0		
.375"	40.0		
#4	32.0		
#10	22.0		
#20	14.0		
#40	10.0		
#50	8.0		
#100	6.0		
#200	4.3	0.0 - 25.0	

* Structural Fill

Material Description

Brown poorly graded sand with silt and gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,437'

Source of Sample: Structural Fill
Sample Number: SF-51-R

Date: 3/27/2014



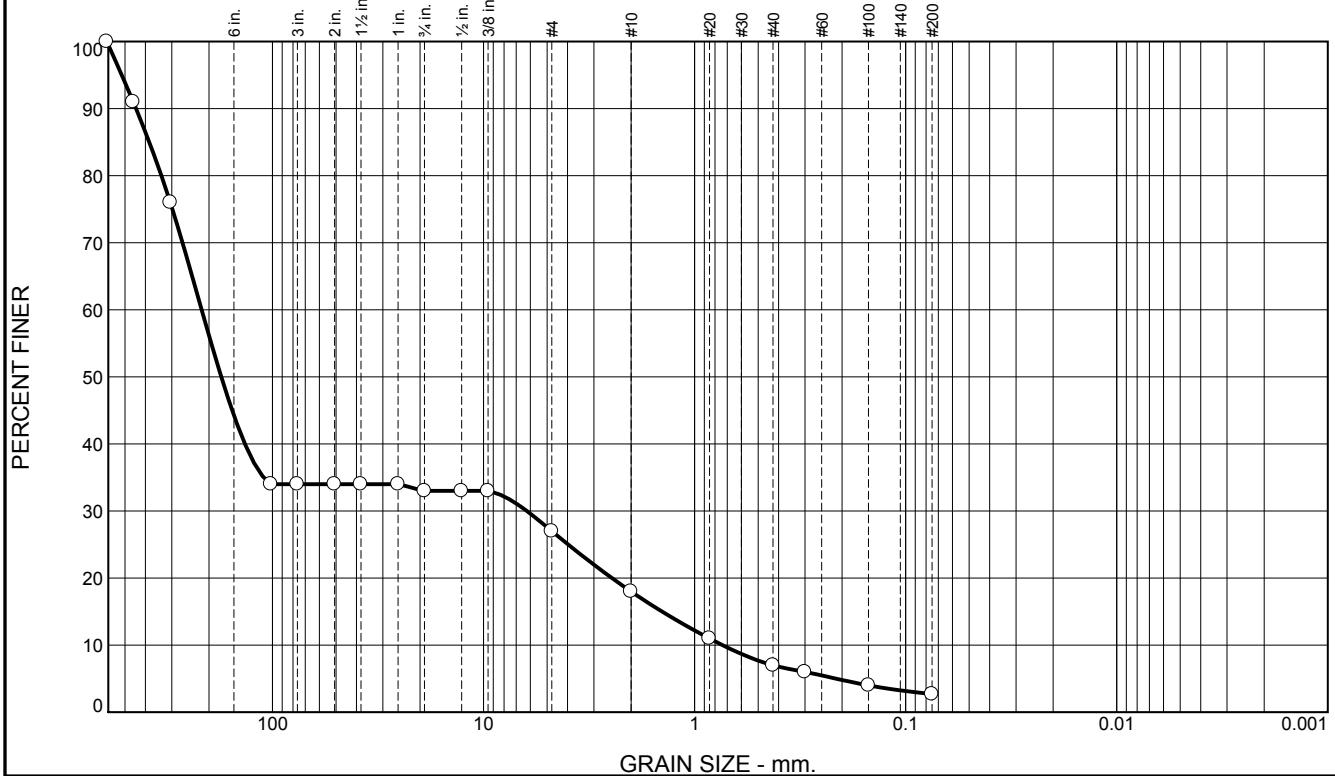
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-51-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
66.0	1.0	6.0	9.0	11.0	4.3	2.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	91.0		
12"	76.0		
4"	34.0		
3"	34.0		
2"	34.0		
1.5"	34.0		
1"	34.0		
.75"	33.0		
.5"	33.0		
.375"	33.0		
#4	27.0		
#10	18.0		
#20	11.0		
#40	7.0		
#50	6.0		
#100	4.0		
#200	2.7	0.0 - 25.0	

* Structural Fill

Material Description

Brown poorly graded sand with silt and gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,441'

Source of Sample: Structural Fill
Sample Number: SF-52-R

Date: 3/28/2014



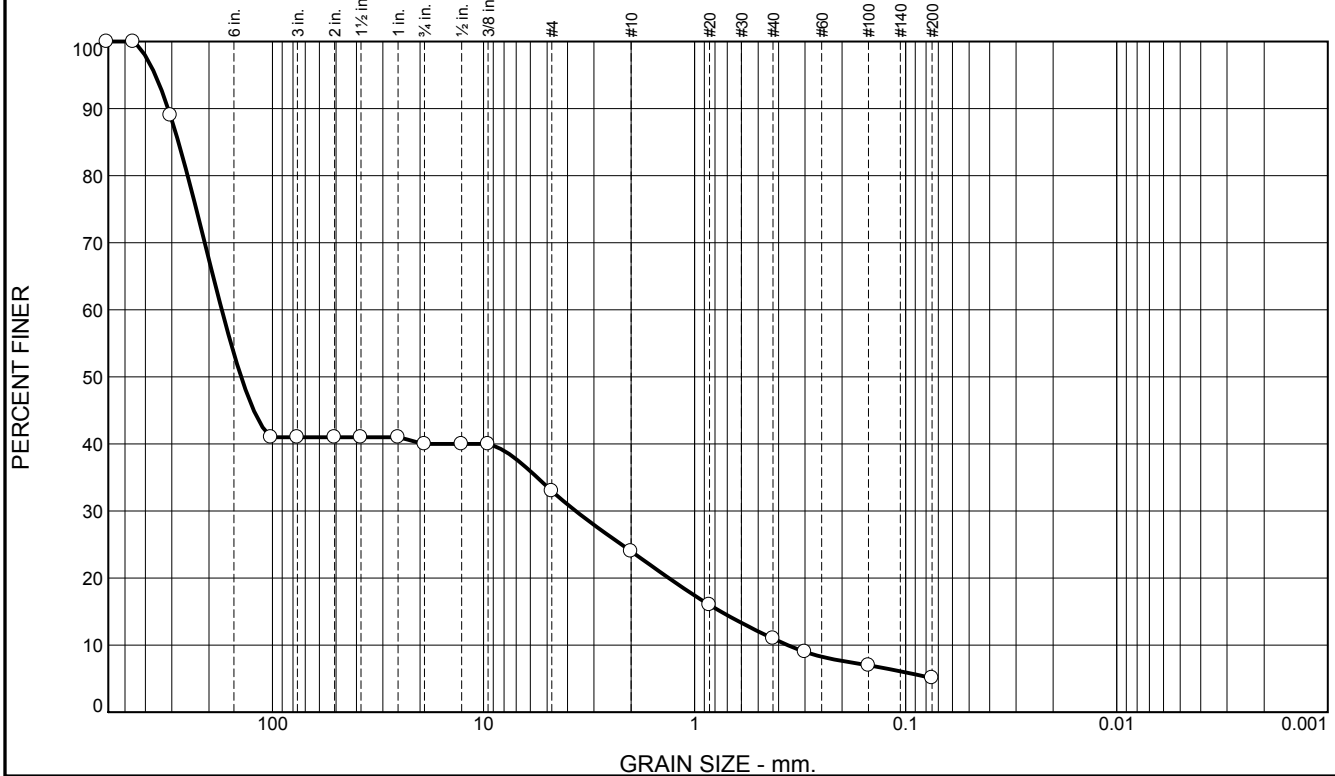
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-52-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
59.0	1.0	7.0	9.0	13.0	5.9	5.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	89.0		
4"	41.0		
3"	41.0		
2"	41.0		
1.5"	41.0		
1"	41.0		
.75"	40.0		
.5"	40.0		
.375"	40.0		
#4	33.0		
#10	24.0		
#20	16.0		
#40	11.0		
#50	9.0		
#100	7.0		
#200	5.1	0.0 - 25.0	

* Structural Fill

Material Description

Brown silty sand with gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SM

AASHTO= A-1-b

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,443'

Source of Sample: Structural Fill
Sample Number: SF-53-R

Date: 3/28/2014



Client: Cripple Creek & Victor Gold Mining Company

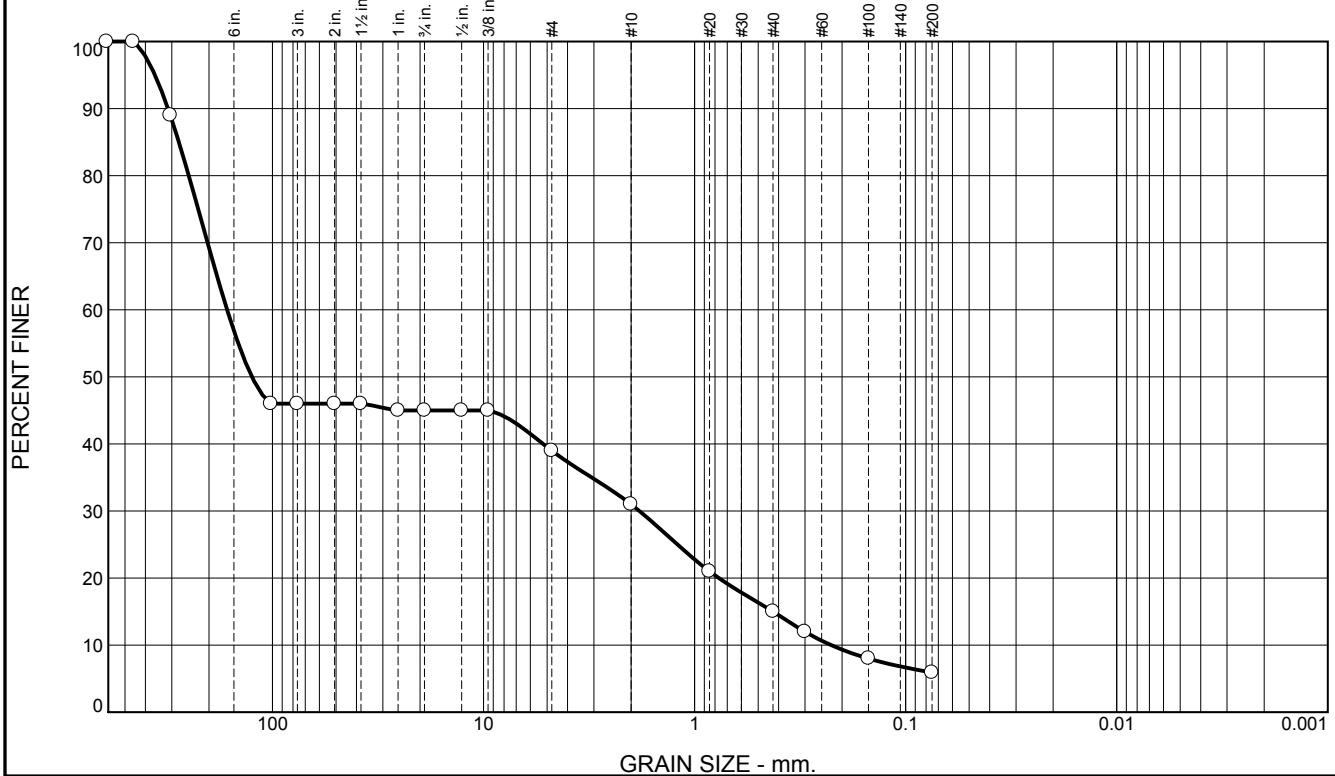
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-53-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
54.0	1.0	6.0	8.0	16.0	9.1	5.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	89.0		
4"	46.0		
3"	46.0		
2"	46.0		
1.5"	46.0		
1"	45.0		
.75"	45.0		
.5"	45.0		
.375"	45.0		
#4	39.0		
#10	31.0		
#20	21.0		
#40	15.0		
#50	12.0		
#100	8.0		
#200	5.9	0.0 - 25.0	

Material Description

Brown silty sand with gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SM

AASHTO= A-1-b

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,443'

* Structural Fill

Source of Sample: Structural Fill
Sample Number: SF-54-R

Date: 3/31/2014



Client: Cripple Creek & Victor Gold Mining Company

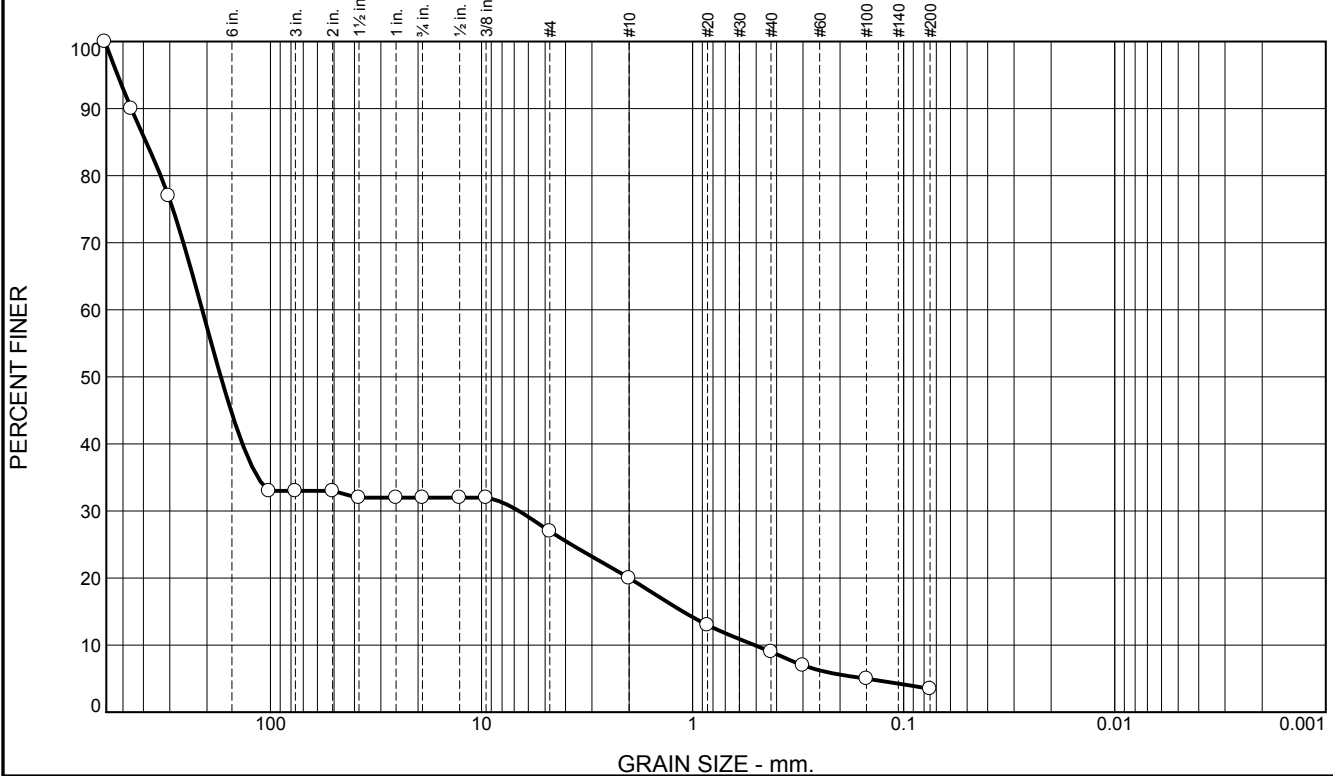
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-54-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
67.0	1.0	5.0	7.0	11.0	5.5	3.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	90.0		
12"	77.0		
4"	33.0		
3"	33.0		
2"	33.0		
1.5"	32.0		
1"	32.0		
.75"	32.0		
.5"	32.0		
.375"	32.0		
#4	27.0		
#10	20.0		
#20	13.0		
#40	9.0		
#50	7.0		
#100	5.0		
#200	3.5	0.0 - 25.0	

* Structural Fill

Material Description

Brown poorly graded sand with silt and gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SP-SM

AASHTO= A-1-b

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,443'

Source of Sample: Structural Fill
Sample Number: SF-55-R

Date: 3/31/2014



Client: Cripple Creek & Victor Gold Mining Company

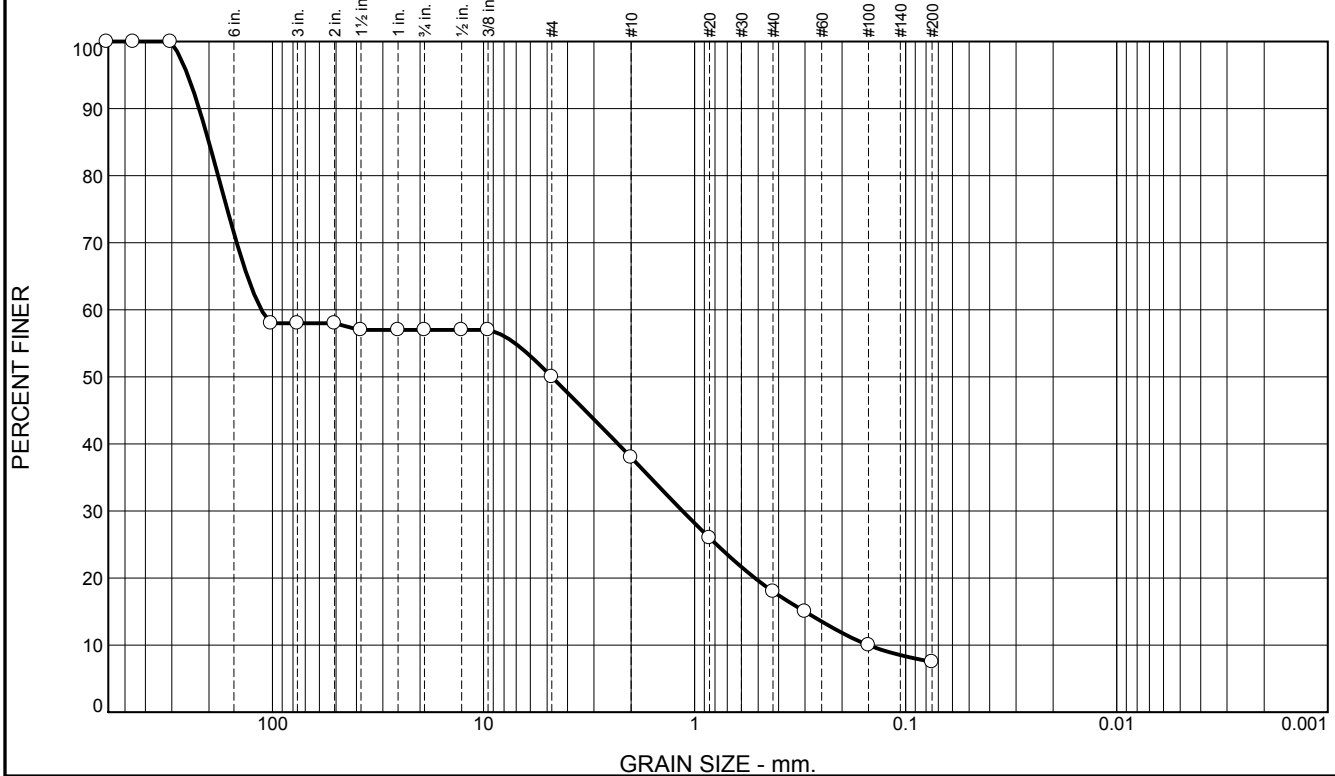
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-55-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
42.0	1.0	7.0	12.0	20.0	10.5	7.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	100.0		
4"	58.0		
3"	58.0		
2"	58.0		
1.5"	57.0		
1"	57.0		
.75"	57.0		
.5"	57.0		
.375"	57.0		
#4	50.0		
#10	38.0		
#20	26.0		
#40	18.0		
#50	15.0		
#100	10.0		
#200	7.5	0.0 - 25.0	

* Structural Fill

Material Description

Brown silty sand

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SM

AASHTO= A-1-b

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,445'

Source of Sample: Structural Fill
Sample Number: SF-56-R

Date: 3/31/2014



Client: Cripple Creek & Victor Gold Mining Company

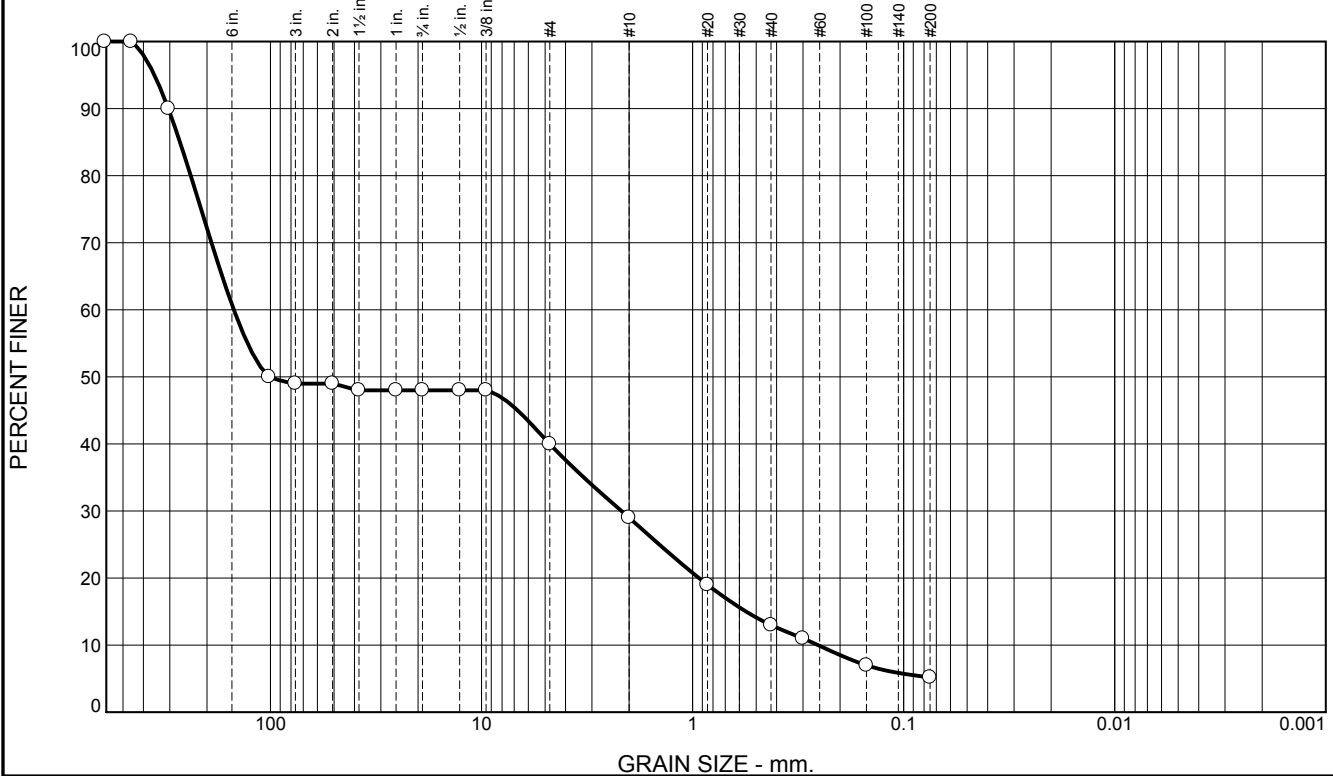
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-56-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
51.0	1.0	8.0	11.0	16.0	7.8	5.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	90.0		
4"	50.0		
3"	49.0		
2"	49.0		
1.5"	48.0		
1"	48.0		
.75"	48.0		
.5"	48.0		
.375"	48.0		
#4	40.0		
#10	29.0		
#20	19.0		
#40	13.0		
#50	11.0		
#100	7.0		
#200	5.2	0.0 - 25.0	

Material Description

Brown poorly graded sand with silt and gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,444'

* Structural Fill

Source of Sample: Structural Fill
Sample Number: SF-57-R

Date: 4/1/2014



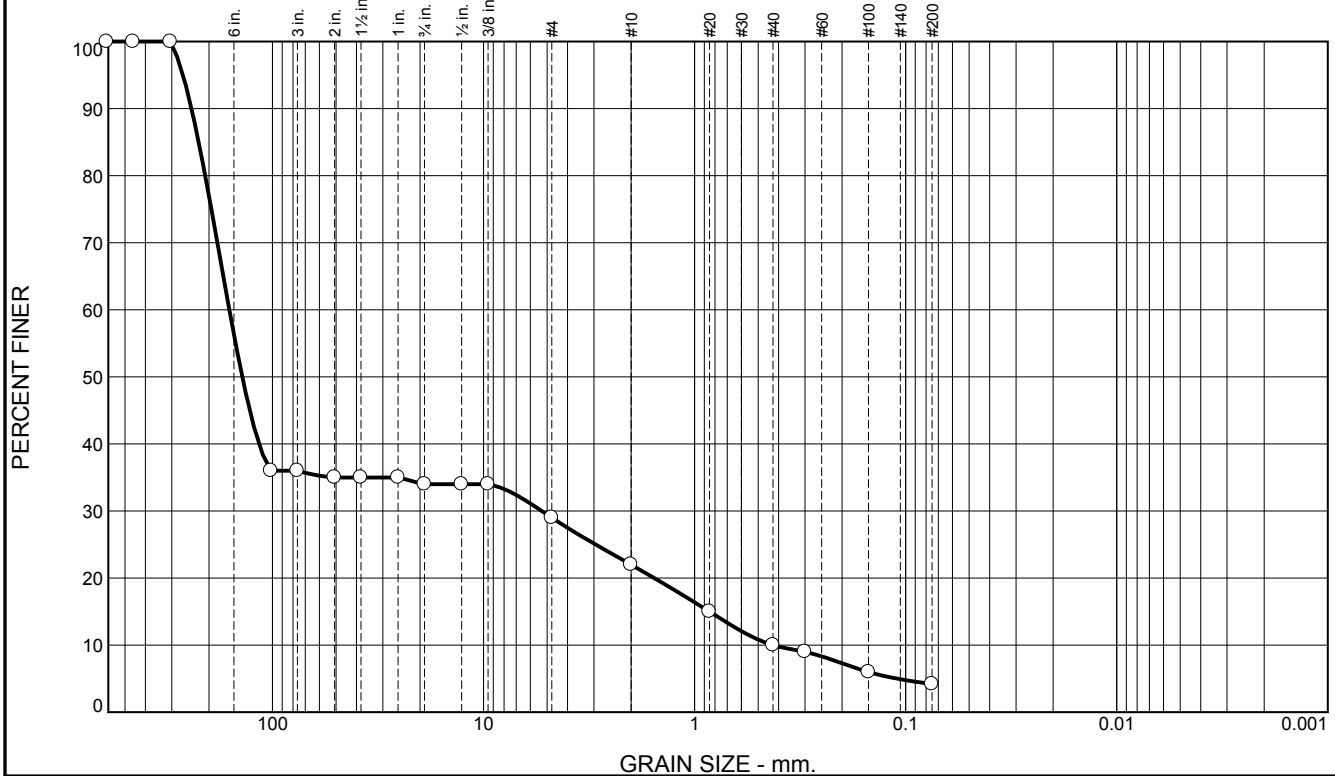
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-57-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
64.0	2.0	5.0	7.0	12.0	5.8	4.2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	100.0		
4"	36.0		
3"	36.0		
2"	35.0		
1.5"	35.0		
1"	35.0		
.75"	34.0		
.5"	34.0		
.375"	34.0		
#4	29.0		
#10	22.0		
#20	15.0		
#40	10.0		
#50	9.0		
#100	6.0		
#200	4.2		
		0.0 - 25.0	

* Structural Fill

Material Description

Brown poorly graded sand with silt and gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SP-SM

AASHTO= A-1-b

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,444'

Source of Sample: Structural Fill
Sample Number: SF-58-R

Date: 4/01/2014



Client: Cripple Creek & Victor Gold Mining Company

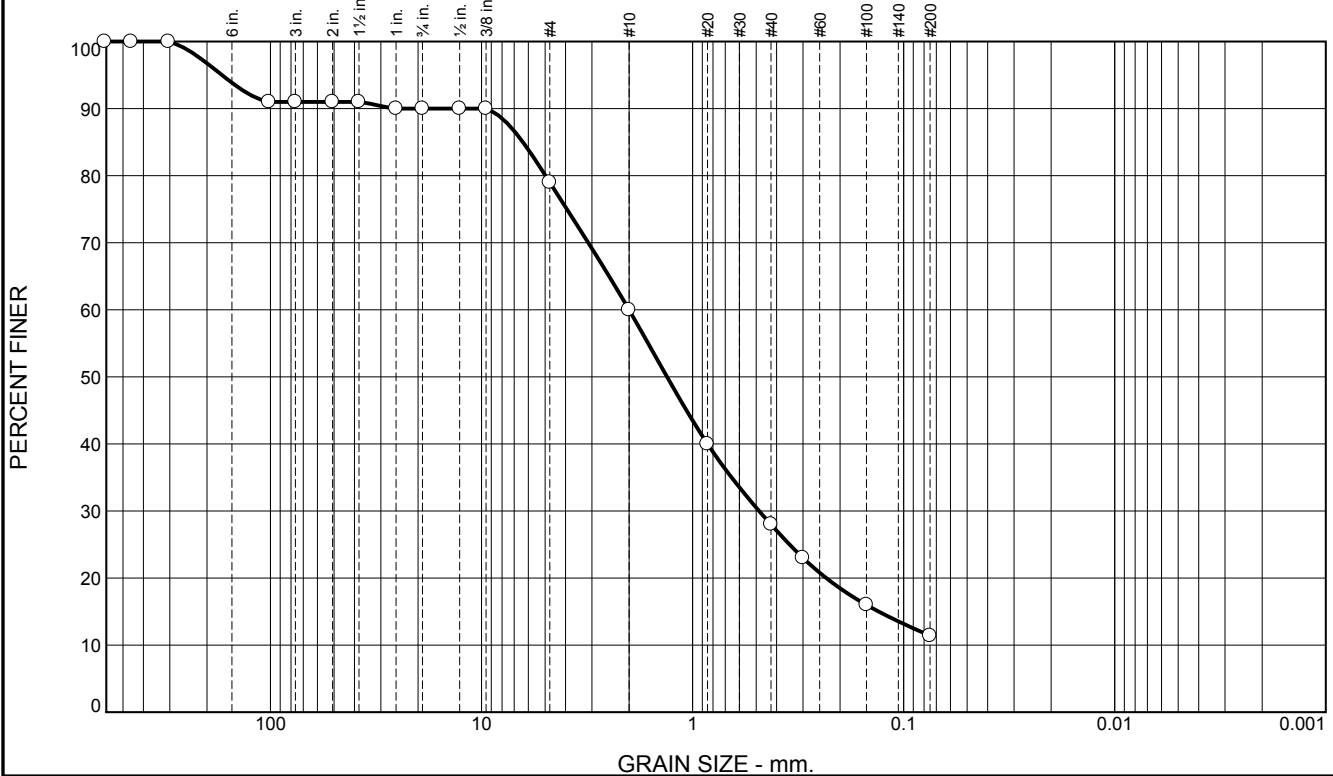
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-58-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
9.0	1.0	11.0	19.0	32.0	16.6	11.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	100.0		
4"	91.0		
3"	91.0		
2"	91.0		
1.5"	91.0		
1"	90.0		
.75"	90.0		
.5"	90.0		
.375"	90.0		
#4	80.0		
#10	60.0		
#20	40.0		
#40	28.0		
#50	23.0		
#100	16.0		
#200	11.4	0.0 - 25.0	

Material Description

Brown silty sand

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SM

AASHTO= A-1-b

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,445'

* Structural Fill

Source of Sample: Structural Fill
Sample Number: SF-59-R

Date: 4/01/2014



Client: Cripple Creek & Victor Gold Mining Company

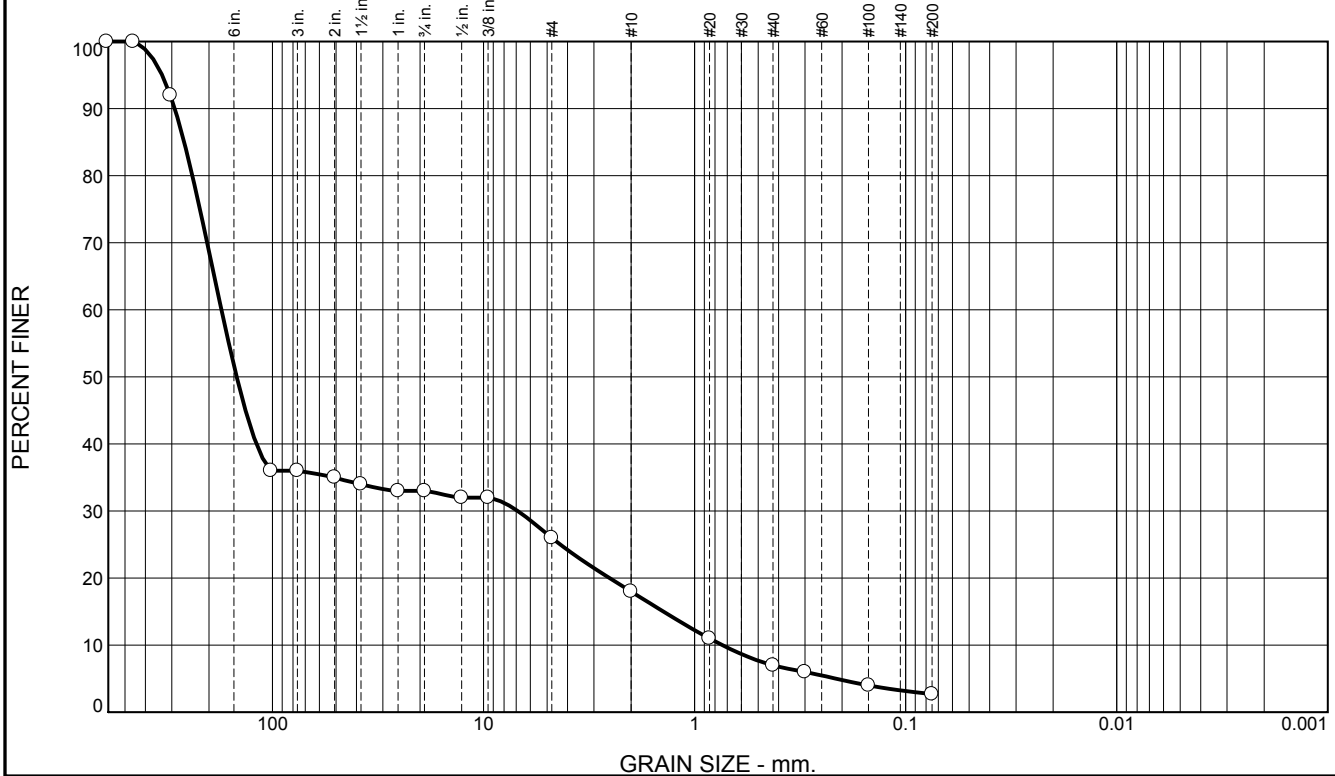
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-59-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
64.0	3.0	7.0	8.0	11.0	4.3	2.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	92.0		
4"	36.0		
3"	36.0		
2"	35.0		
1.5"	34.0		
1"	33.0		
.75"	33.0		
.5"	32.0		
.375"	32.0		
#4	26.0		
#10	18.0		
#20	11.0		
#40	7.0		
#50	6.0		
#100	4.0		
#200	2.7	0.0 - 25.0	

* Structural Fill

Material Description

Brown poorly graded sand with silt and gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SP-SM

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,445'

Source of Sample: Structural Fill
Sample Number: SF-60-R

Date: 4/01/2014



Client: Cripple Creek & Victor Gold Mining Company

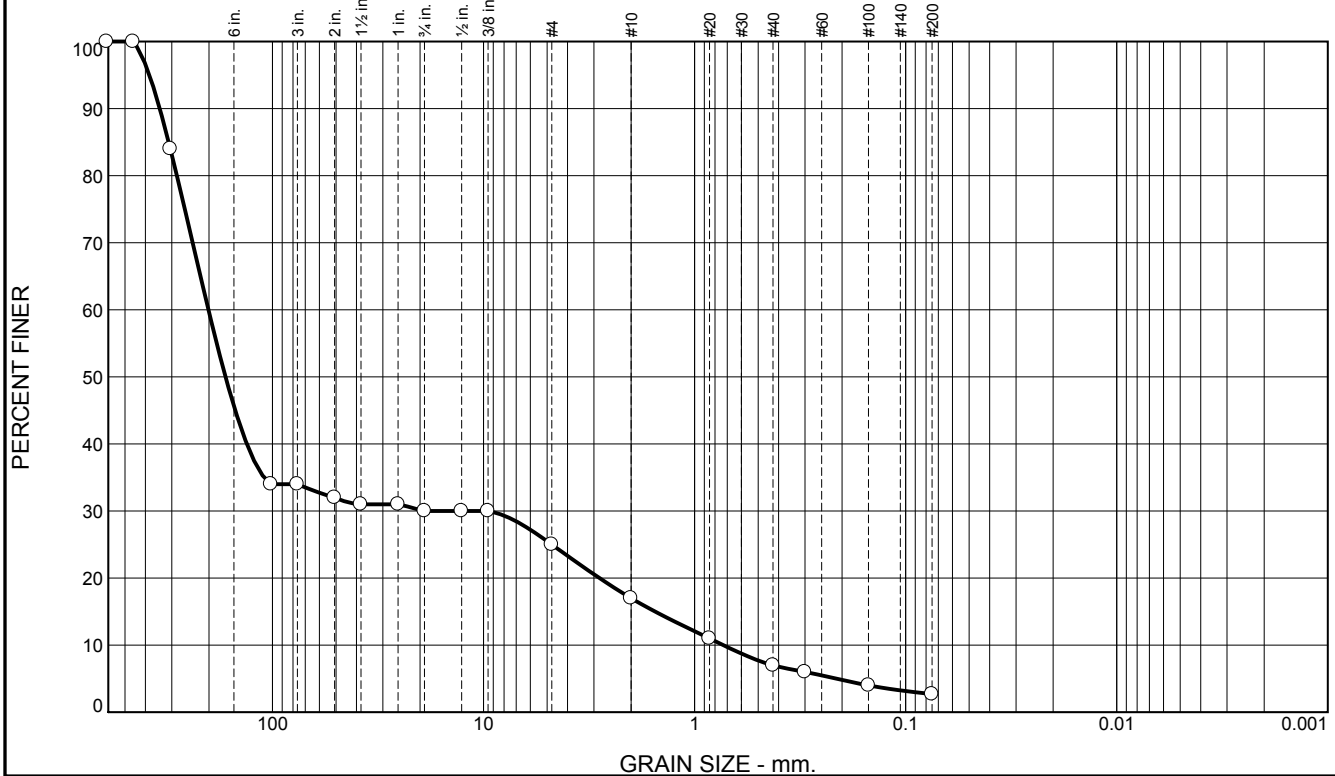
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-60-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
66.0	4.0	5.0	8.0	10.0	4.3	2.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	84.0		
4"	34.0		
3"	34.0		
2"	32.0		
1.5"	31.0		
1"	31.0		
.75"	30.0		
.5"	30.0		
.375"	30.0		
#4	25.0		
#10	17.0		
#20	11.0		
#40	7.0		
#50	6.0		
#100	4.0		
#200	2.7	0.0 - 25.0	

* Structural Fill

Material Description

Brown well-graded sand with silt and gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,444'

Source of Sample: Structural Fill
Sample Number: SF-61-R

Date: 4/01/2014



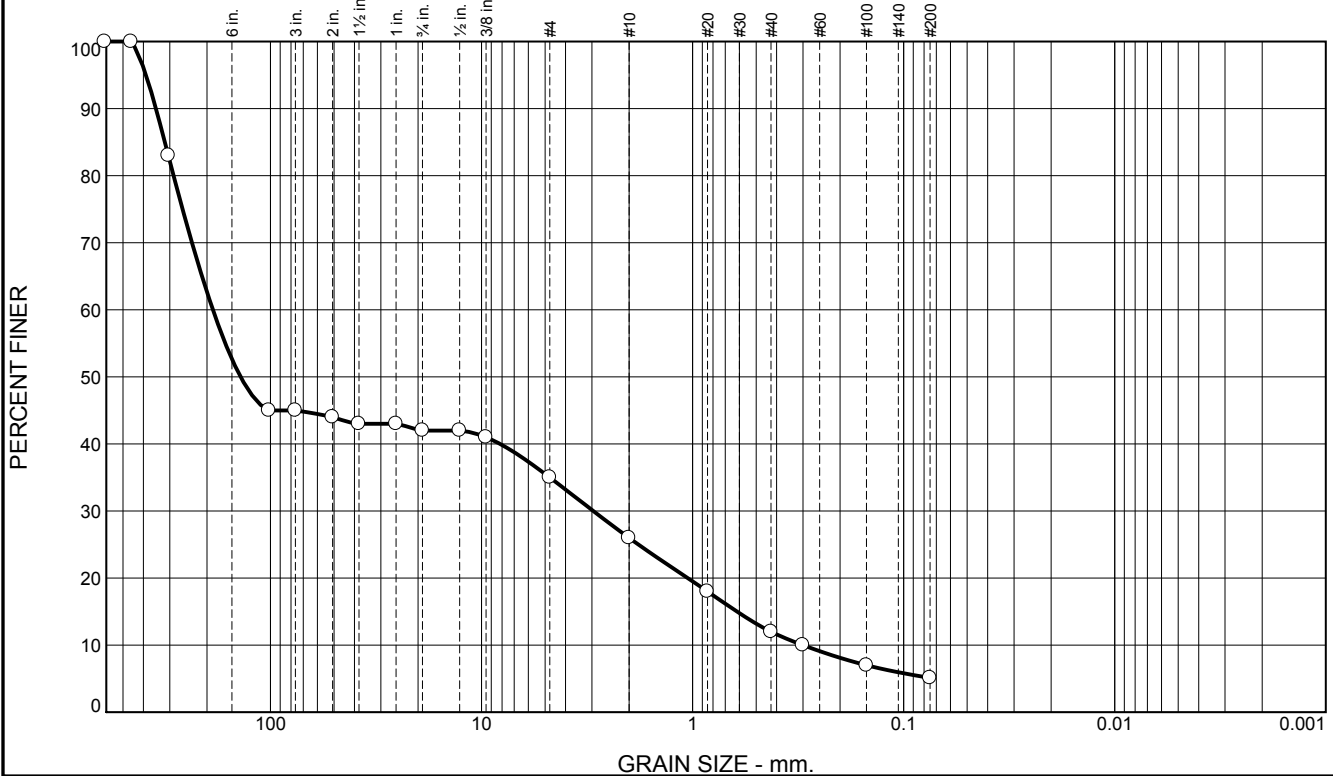
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-61-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
55.0	3.0	7.0	9.0	14.0	6.9	5.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	83.0		
4"	45.0		
3"	45.0		
2"	44.0		
1.5"	43.0		
1"	43.0		
.75"	42.0		
.5"	42.0		
.375"	41.0		
#4	35.0		
#10	26.0		
#20	18.0		
#40	12.0		
#50	10.0		
#100	7.0		
#200	5.1	0.0 - 25.0	

* Structural Fill

Material Description

Brown poorly graded sand with silt and gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SP-SM

AASHTO= A-1-b

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,446'

Source of Sample: Structural Fill
Sample Number: SF-62-R

Date: 4/01/2014



Client: Cripple Creek & Victor Gold Mining Company

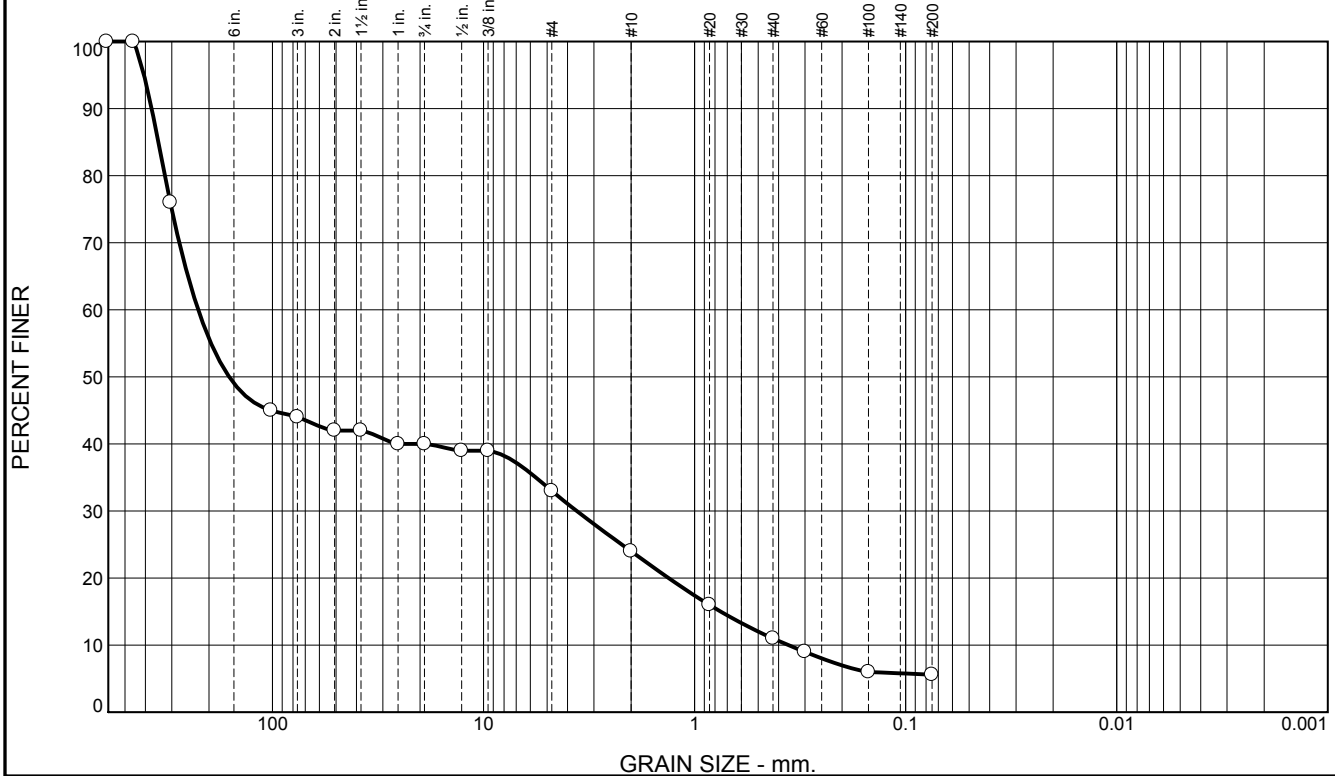
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-62-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
56.0	4.0	7.0	9.0	13.0	5.4	5.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	76.0		
4"	45.0		
3"	44.0		
2"	42.0		
1.5"	42.0		
1"	40.0		
.75"	40.0		
.5"	39.0		
.375"	39.0		
#4	33.0		
#10	24.0		
#20	16.0		
#40	11.0		
#50	9.0		
#100	6.0		
#200	5.6	0.0 - 25.0	

* Structural Fill

Material Description

Brown silty sand with gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SM

AASHTO= A-1-b

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,447'

Source of Sample: Structural Fill
Sample Number: SF-63-R

Date: 4/01/2014



Client: Cripple Creek & Victor Gold Mining Company

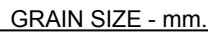
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-63-R

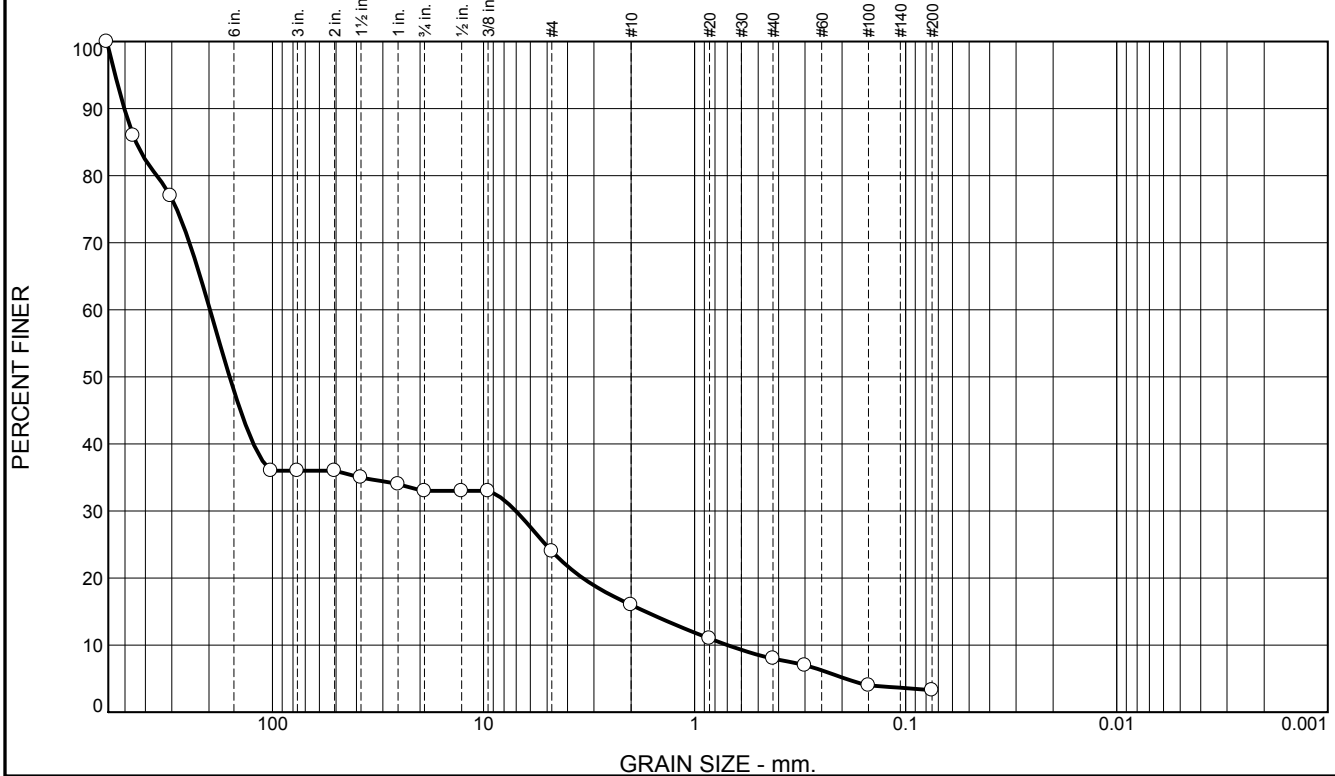
Tested By: RM Checked By: TB

PERCENT FINER



Tested By: RM **Checked By:** TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
64.0	3.0	9.0	8.0	8.0	4.7	3.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	86.0		
12"	77.0		
4"	36.0		
3"	36.0		
2"	36.0		
1.5"	35.0		
1"	34.0		
.75"	33.0		
.5"	33.0		
.375"	33.0		
#4	24.0		
#10	16.0		
#20	11.0		
#40	8.0		
#50	7.0		
#100	4.0		
#200	3.3	0.0 - 25.0	

* Structural Fill

Material Description

Brown poorly graded sand with silt and gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SP-SM

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,445'

Source of Sample: Structural Fill
Sample Number: SF-65-R

Date: 4/01/2014



Client: Cripple Creek & Victor Gold Mining Company

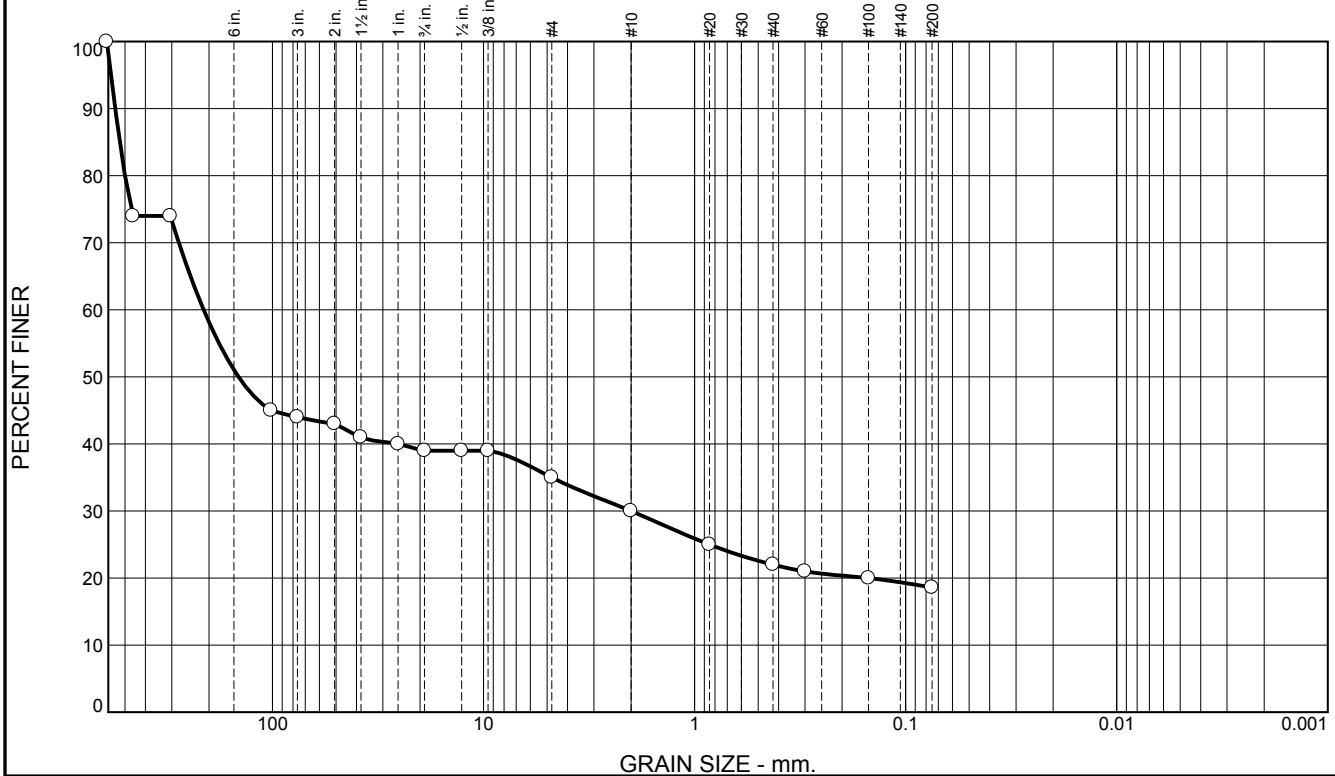
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-65-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
56.0	5.0	4.0	5.0	8.0	3.4	18.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	74.0		
12"	74.0		
4"	45.0		
3"	44.0		
2"	43.0		
1.5"	41.0		
1"	40.0		
.75"	39.0		
.5"	39.0		
.375"	39.0		
#4	35.0		
#10	30.0		
#20	25.0		
#40	22.0		
#50	21.0		
#100	20.0		
#200	18.6	0.0 - 25.0	

Material Description

Brown silty sand with gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SM

AASHTO= A-4(0)

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,448'

* Structural Fill

Source of Sample: Structural Fill
Sample Number: SF-66-R

Date: 4/01/2014



Client: Cripple Creek & Victor Gold Mining Company

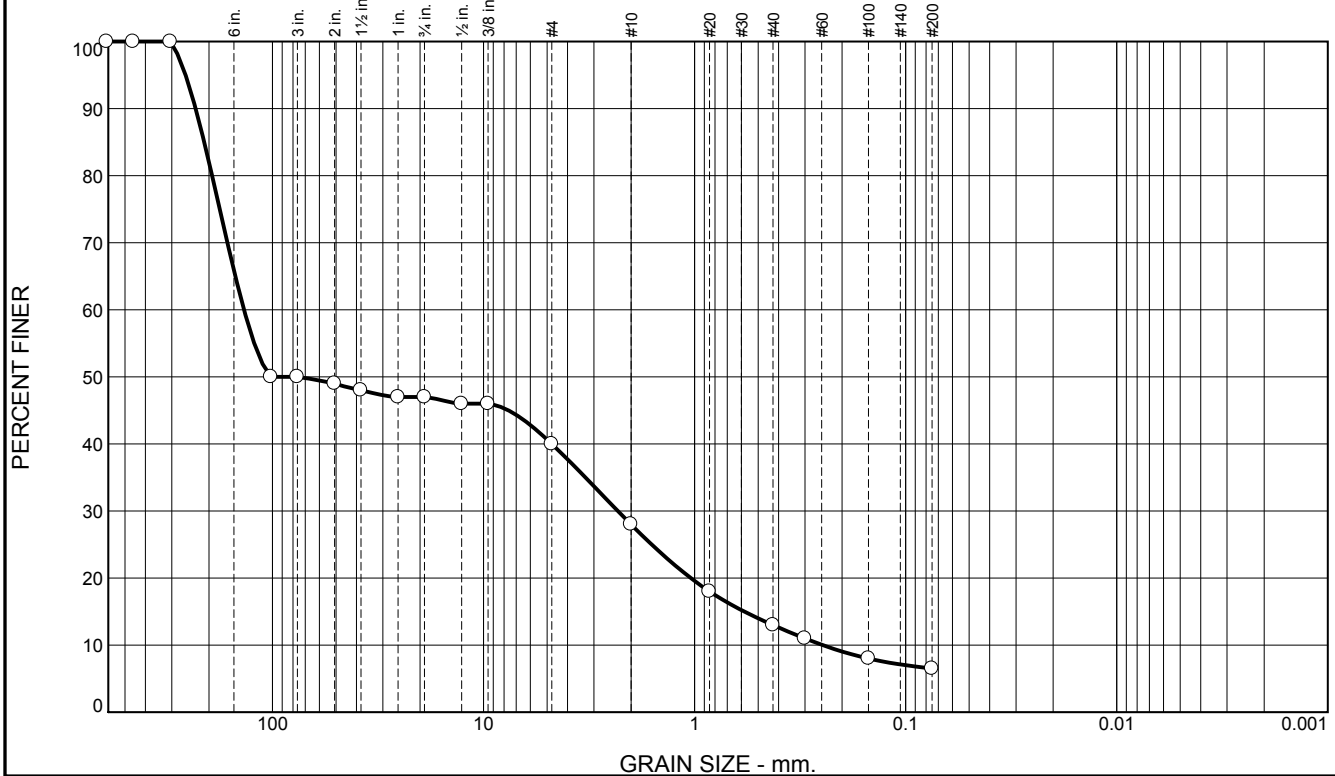
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-66-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
50.0	3.0	7.0	12.0	15.0	6.5	6.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	100.0		
4"	50.0		
3"	50.0		
2"	49.0		
1.5"	48.0		
1"	47.0		
.75"	47.0		
.5"	46.0		
.375"	46.0		
#4	40.0		
#10	28.0		
#20	18.0		
#40	13.0		
#50	11.0		
#100	8.0		
#200	6.5	0.0 - 25.0	

* Structural Fill

Material Description

Brown poorly silty sand with gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SM

AASHTO= A-1-b

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,446'

Source of Sample: Structural Fill
Sample Number: SF-67-R

Date: 4/01/2014



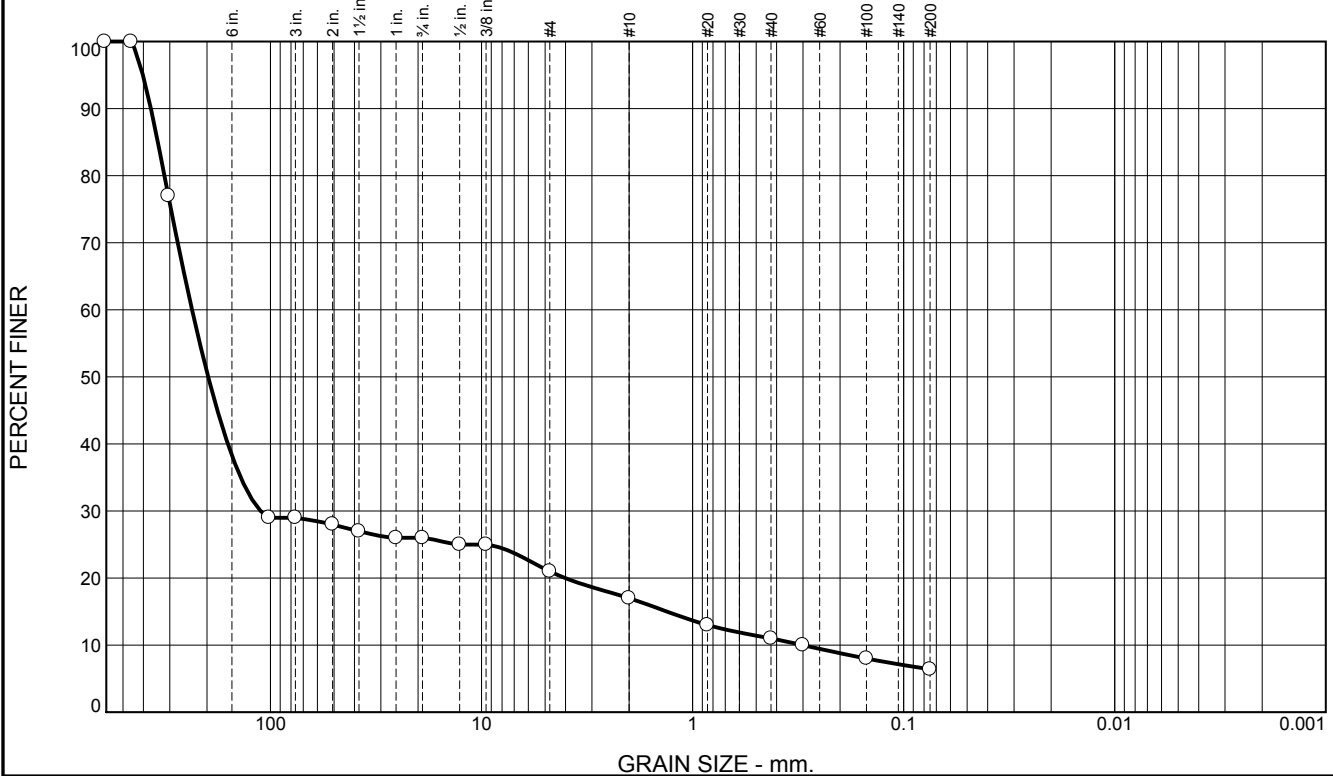
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-67-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
71.0	3.0	5.0	4.0	6.0	4.6	6.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	77.0		
4"	29.0		
3"	29.0		
2"	28.0		
1.5"	27.0		
1"	26.0		
.75"	26.0		
.5"	25.0		
.375"	25.0		
#4	21.0		
#10	17.0		
#20	13.0		
#40	11.0		
#50	10.0		
#100	8.0		
#200	6.4	0.0 - 25.0	

* Structural Fill

Material Description

Brown silty sand with gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SM

AASHTO= A-1-b

Remarks

Sample obtained from the west end of the PSSA/Hwy 67 Embankment at an elevation of 9,448'

Source of Sample: Structural Fill
Sample Number: SF-68-R

Date: 4/7/2014



Client: Cripple Creek & Victor Gold Mining Company

Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-68-R

Tested By: RM Checked By: TB

PERCENT FINER

GRAIN SIZE - mm.

Grain Size (mm)	Percent Finer (%)
100	100
60	47
42.5	33
25	16
15	11
75	7

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
53.0	3.0	11.0	10.0	10.0	6.3	6.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	88.0		
12"	78.0		
4"	47.0		
3"	47.0		
2"	46.0		
1.5"	46.0		
1"	45.0		
.75"	44.0		
.5"	44.0		
.375"	44.0		
#4	33.0		
#10	23.0		
#20	16.0		
#40	13.0		
#50	11.0		
#100	8.0		
#200	6.7	0.0 - 25.0	

Brown silty silty sand with gravel

$$PL = NP$$
$$\frac{\text{LL}}{\text{NV}} = \frac{\text{NV}}{\text{NV}}$$
$$P \models NP$$

USCS= SM

AASHTO= A-1-a

Sample obtained from the east end of the PSSA/Hwy 67
Embankment at an elevation of 9450'

Source of Sample: Structural Fill
Sample Number: SF-69-R

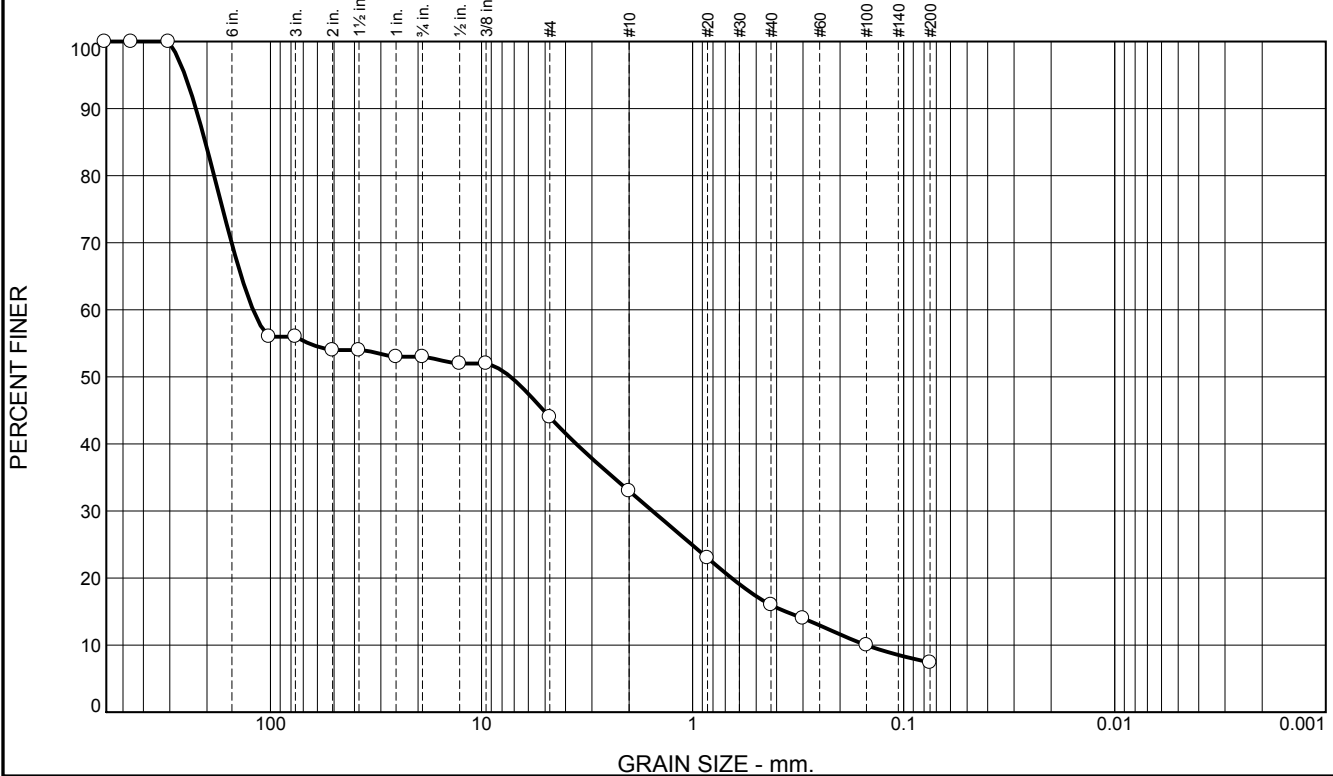


Project: VLF Squaw Gulch

Figure SF-69-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
44.0	3.0	9.0	11.0	17.0	8.6	7.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	100.0		
4"	56.0		
3"	56.0		
2"	54.0		
1.5"	54.0		
1"	53.0		
.75"	53.0		
.5"	52.0		
.375"	52.0		
#4	44.0		
#10	33.0		
#20	23.0		
#40	16.0		
#50	14.0		
#100	10.0		
#200	7.4	0.0 - 25.0	

* Structural Fill

Material Description

Brown poorly silty sand with gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SM

AASHTO= A-1-b

Remarks

Sample obtained from the center of the PSSA/Hwy 67 Embankment at an elevation of 9,452'

Source of Sample: Structural Fill
Sample Number: SF-70-R

Date: 4/7/2014



Client: Cripple Creek & Victor Gold Mining Company

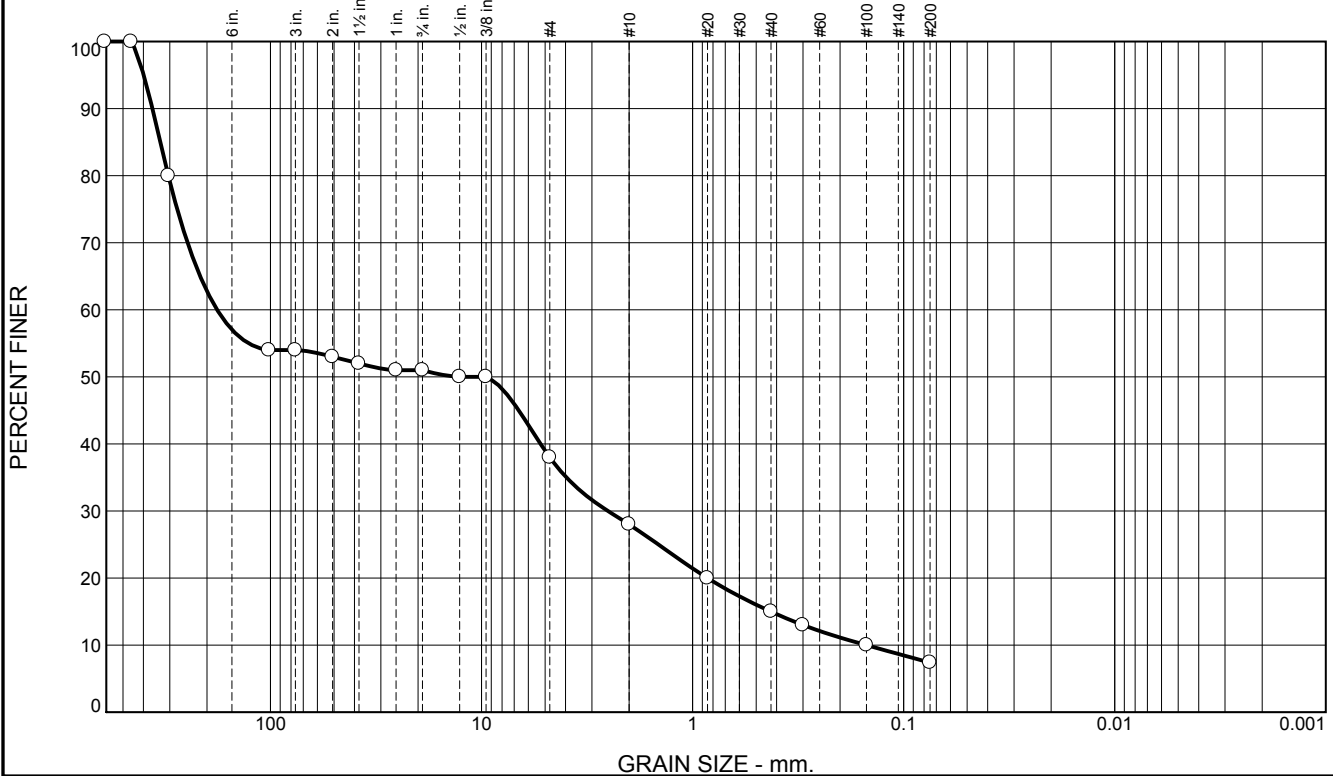
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-70-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
46.0	3.0	13.0	10.0	13.0	7.6	7.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	80.0		
4"	54.0		
3"	54.0		
2"	53.0		
1.5"	52.0		
1"	51.0		
.75"	51.0		
.5"	50.0		
.375"	50.0		
#4	38.0		
#10	28.0		
#20	20.0		
#40	15.0		
#50	13.0		
#100	10.0		
#200	7.4	0.0 - 25.0	

* Structural Fill

Material Description

Brown silty silty sand with gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

USCS= SM AASHTO= A-1-b

Remarks

Sample obtained from the west end of the PSSA/Hwy 67 Embankment at an elevation of 9,446'

Source of Sample: Structural Fill
Sample Number: SF-71-R

Date: 4/7/2014



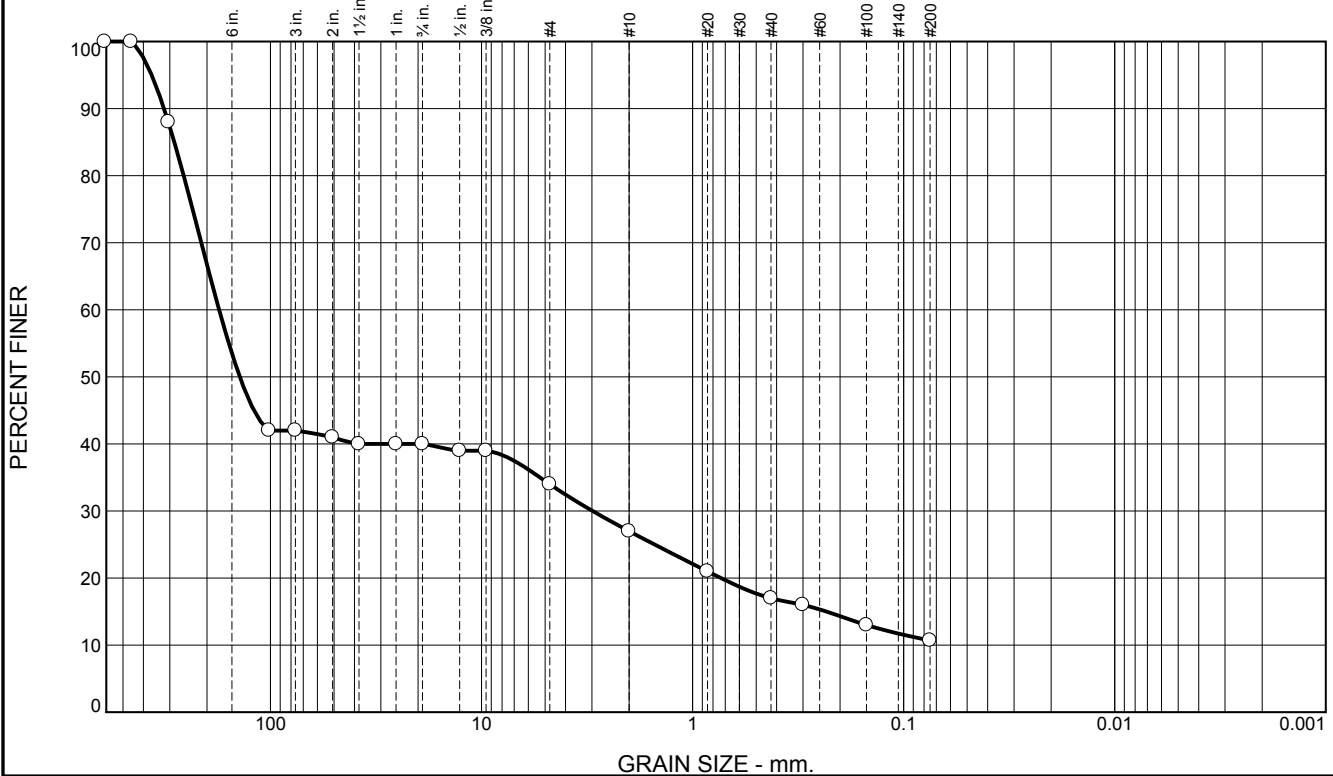
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-71-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
58.0	2.0	6.0	7.0	10.0	6.3	10.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	88.0		
4"	42.0		
3"	42.0		
2"	41.0		
1.5"	40.0		
1"	40.0		
.75"	40.0		
.5"	39.0		
.375"	39.0		
#4	34.0		
#10	27.0		
#20	21.0		
#40	17.0		
#50	16.0		
#100	13.0		
#200	10.7		
		0.0 - 25.0	

* Structural Fill

Material Description

Dark brown silty sand with gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SM

AASHTO= A-1-b

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,448'

Source of Sample: Structural Fill
Sample Number: SF-72-R

Date: 4/8/2014



Client: Cripple Creek & Victor Gold Mining Company

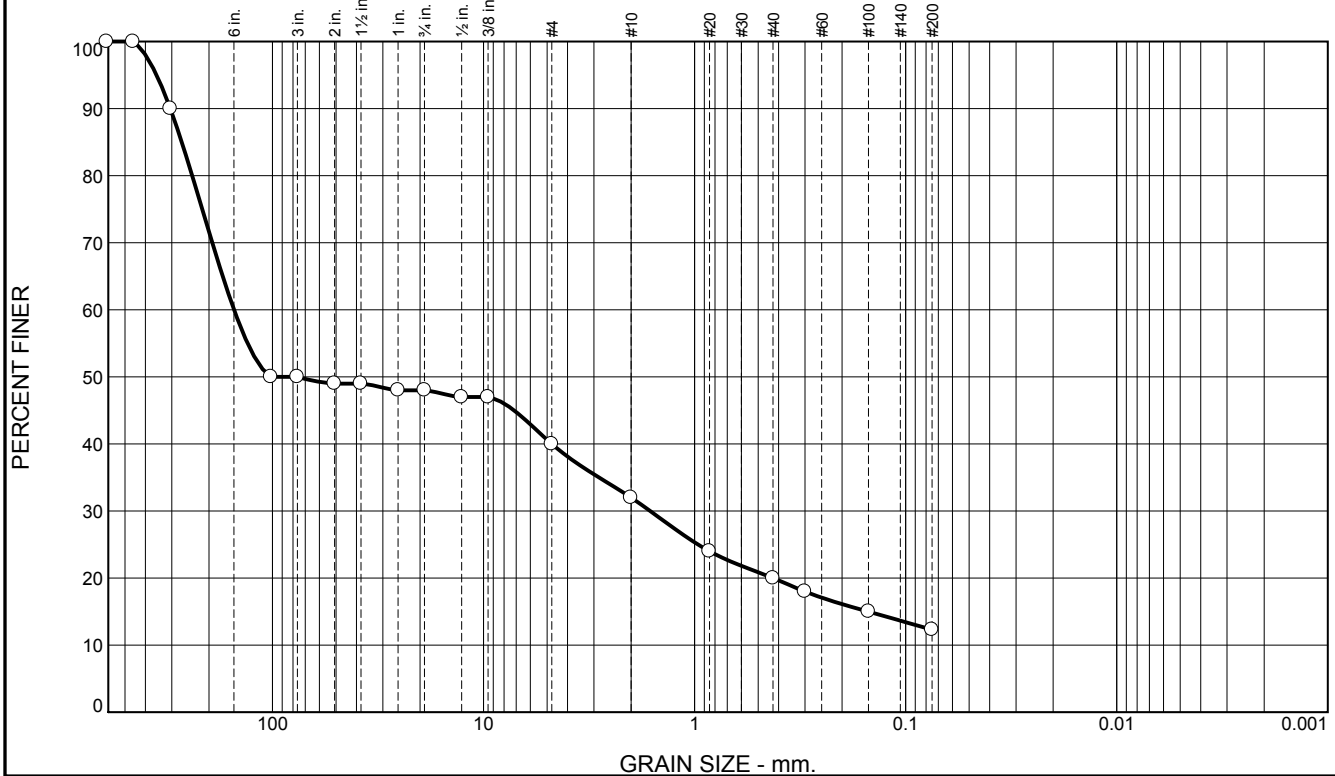
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-72-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
50.0	2.0	8.0	8.0	12.0	7.7	12.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	90.0		
4"	50.0		
3"	50.0		
2"	49.0		
1.5"	49.0		
1"	48.0		
.75"	48.0		
.5"	47.0		
.375"	47.0		
#4	40.0		
#10	32.0		
#20	24.0		
#40	20.0		
#50	18.0		
#100	15.0		
#200	12.3	0.0 - 25.0	

Material Description

Dark brown silty sand with gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SM

AASHTO= A-1-b

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,448'

* Structural Fill

Source of Sample: Structural Fill
Sample Number: SF-73-R

Date: 4/8/2014



Client: Cripple Creek & Victor Gold Mining Company

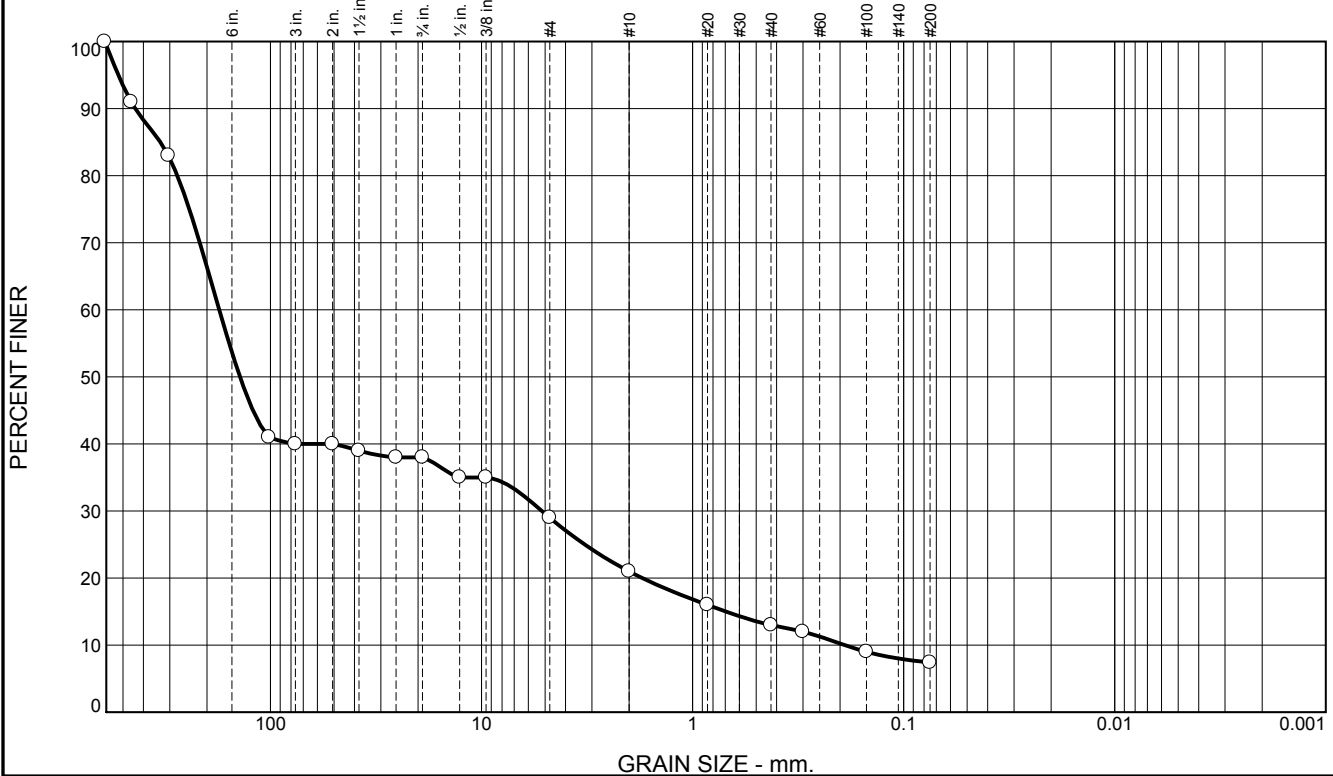
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-73-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
60.0	2.0	9.0	8.0	8.0	5.6	7.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	91.0		
12"	83.0		
4"	41.0		
3"	40.0		
2"	40.0		
1.5"	39.0		
1"	38.0		
.75"	38.0		
.5"	35.0		
.375"	35.0		
#4	29.0		
#10	21.0		
#20	16.0		
#40	13.0		
#50	12.0		
#100	9.0		
#200	7.4	0.0 - 25.0	

Material Description

Light brown silty sand with gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SM

AASHTO= A-1-b

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,450'

* Structural Fill

Source of Sample: Structural Fill
Sample Number: SF-74-R

Date: 4/10/2014



Client: Cripple Creek & Victor Gold Mining Company

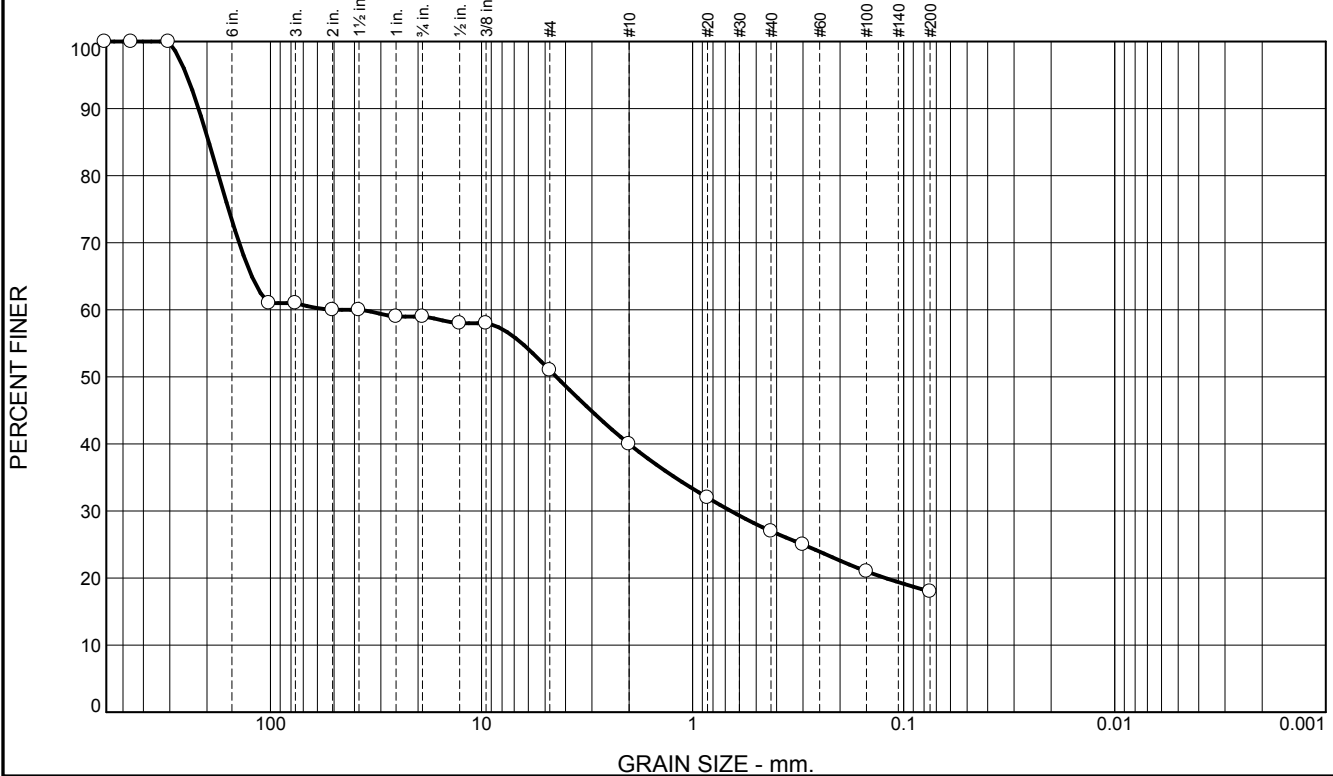
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-74-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
39.0	2.0	8.0	11.0	13.0	9.0	18.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	100.0		
4"	61.0		
3"	61.0		
2"	60.0		
1.5"	60.0		
1"	59.0		
.75"	59.0		
.5"	58.0		
.375"	58.0		
#4	51.0		
#10	40.0		
#20	32.0		
#40	27.0		
#50	25.0		
#100	21.0		
#200	18.0	0.0 - 25.0	

* Structural Fill

Material Description

Dark brown clayey sand with gravel

Atterberg Limits

PL= 20 LL= 34 PI= 14

Classification

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

Remarks

Sample obtained from the east side of the PSSA/Hwy 67 Embankment at an elevation of 9,450'

Source of Sample: Structural Fill
Sample Number: SF-75-R

Date: 4/10/2014



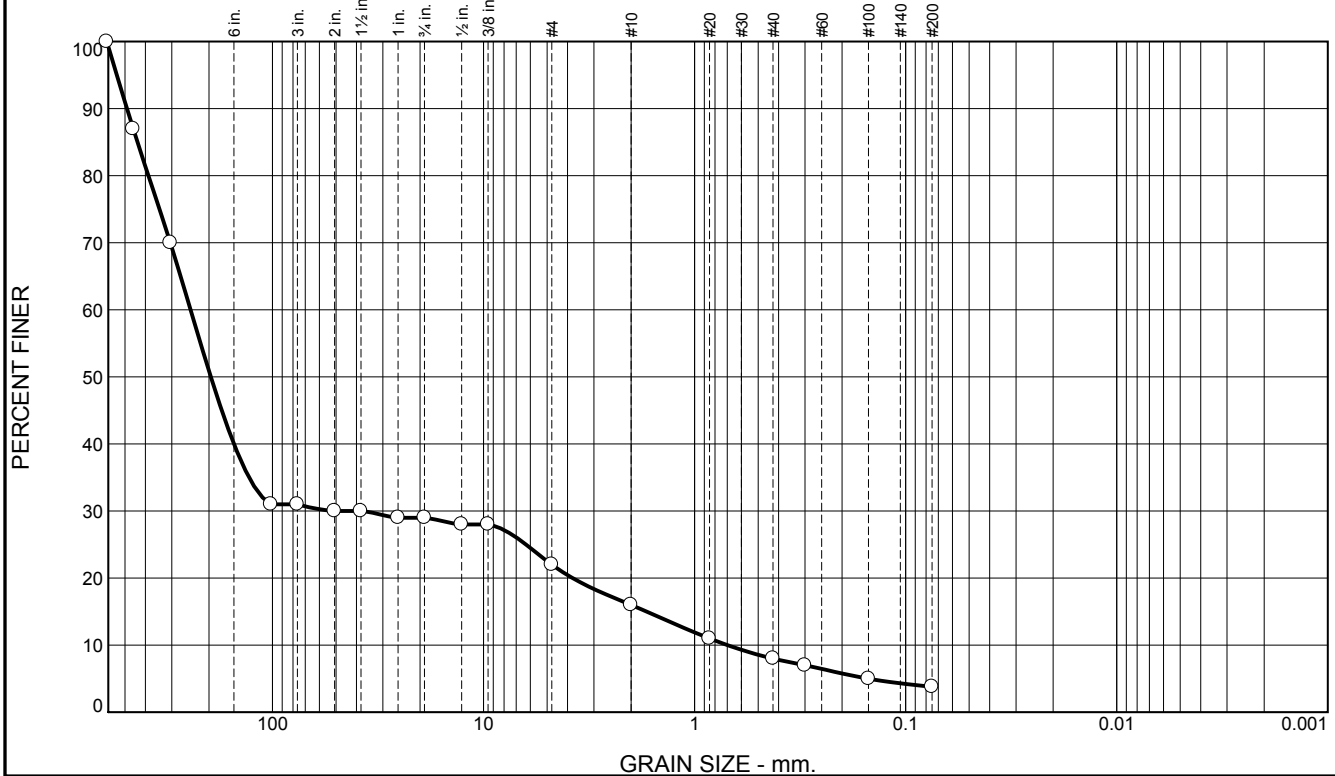
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-75-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
69.0	2.0	7.0	6.0	8.0	4.2	3.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	87.0		
12"	70.0		
4"	31.0		
3"	31.0		
2"	30.0		
1.5"	30.0		
1"	29.0		
.75"	29.0		
.5"	28.0		
.375"	28.0		
#4	22.0		
#10	16.0		
#20	11.0		
#40	8.0		
#50	7.0		
#100	5.0		
#200	3.8	0.0 - 25.0	

* Structural Fill

Material Description

Light brown silty sand with gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SM

AASHTO= A-1-b

Remarks

Sample obtained from the center of the PSSA/Hwy 67 Embankment at an elevation of 9,484'

Source of Sample: Structural Fill
Sample Number: SF-76-R

Date: 4/10/2014



Client: Cripple Creek & Victor Gold Mining Company

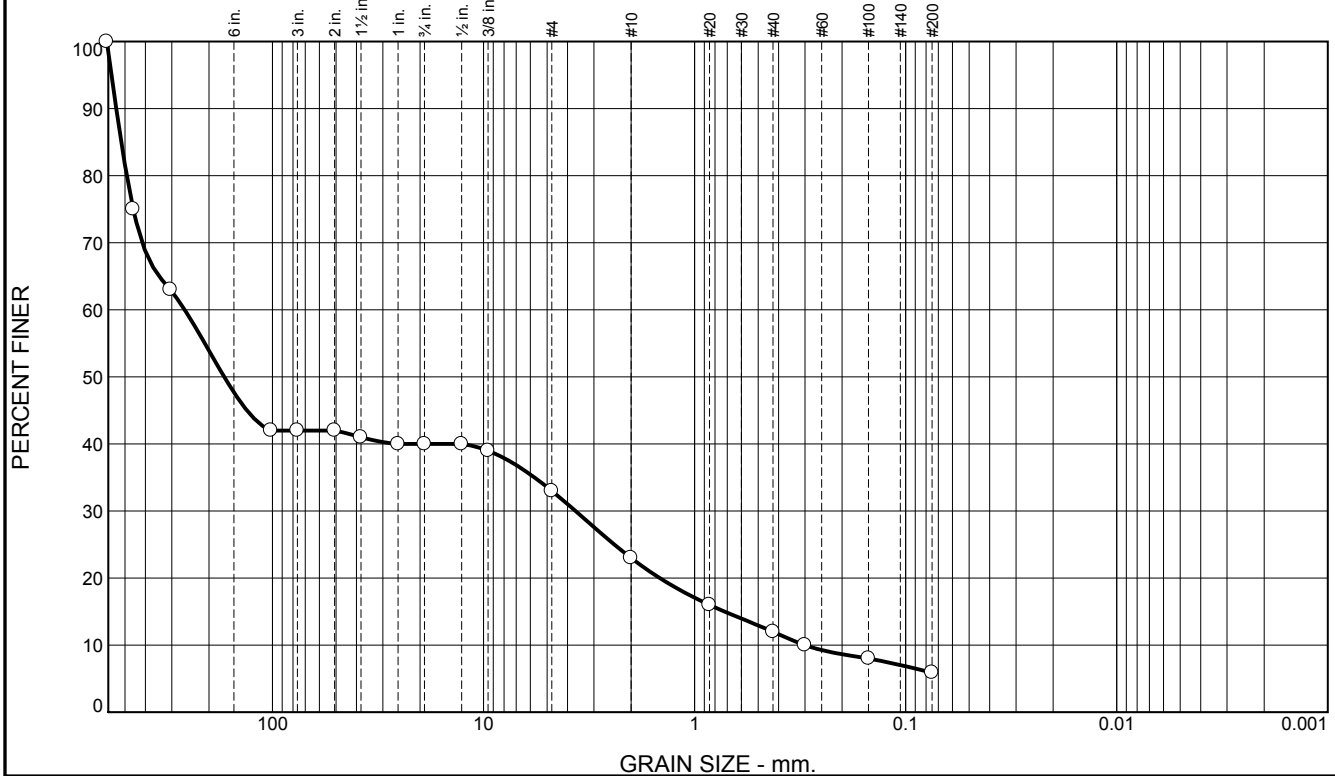
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-76-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
58.0	2.0	7.0	10.0	11.0	6.1	5.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	75.0		
12"	63.0		
4"	42.0		
3"	42.0		
2"	42.0		
1.5"	41.0		
1"	40.0		
.75"	40.0		
.5"	40.0		
.375"	39.0		
#4	33.0		
#10	23.0		
#20	16.0		
#40	12.0		
#50	10.0		
#100	8.0		
#200	5.9	0.0 - 25.0	

* Structural Fill

Material Description

Light brown silty sand with gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SM

AASHTO= A-1-b

Remarks

Sample obtained from the center of the PSSA/Hwy 67 Embankment at an elevation of 9,484'

Source of Sample: Structural Fill
Sample Number: SF-77-R

Date: 4/10/2014



Client: Cripple Creek & Victor Gold Mining Company

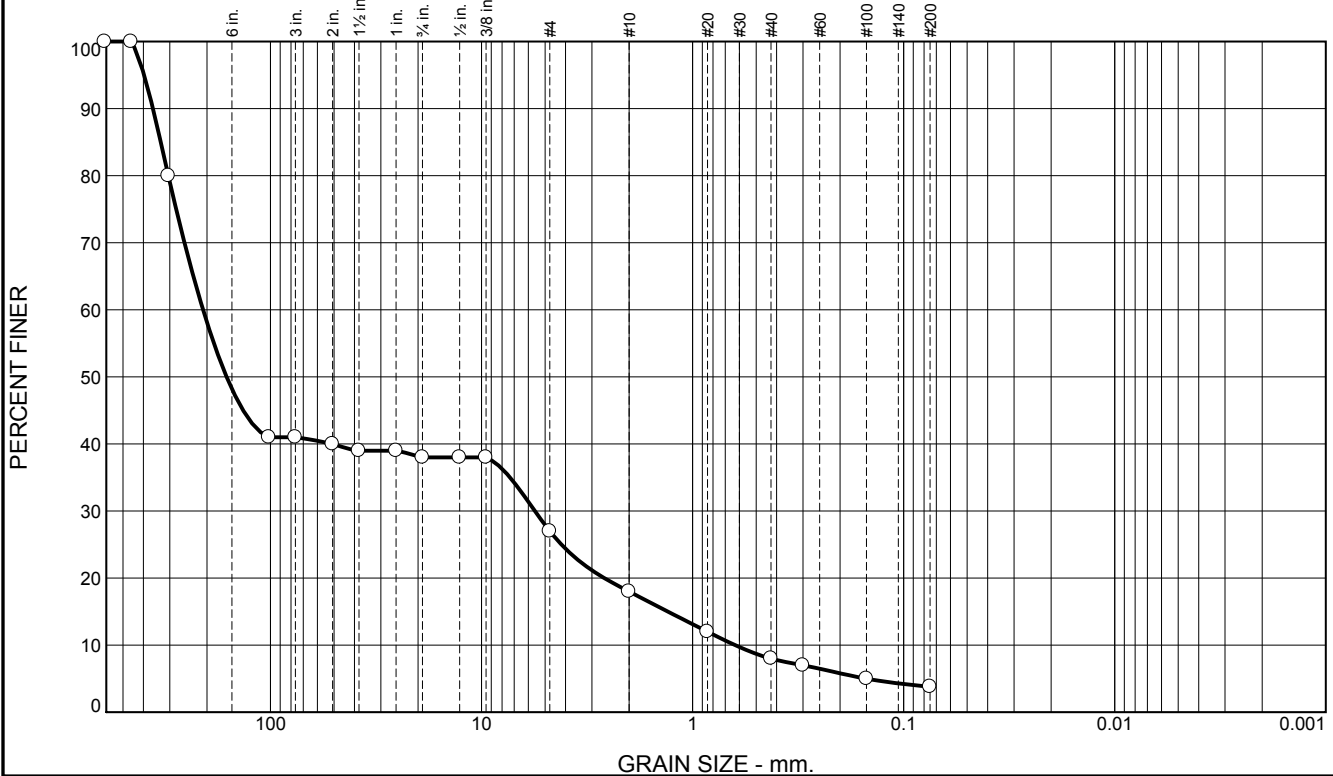
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-77-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
59.0	3.0	11.0	9.0	10.0	4.2	3.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	80.0		
4"	41.0		
3"	41.0		
2"	40.0		
1.5"	39.0		
1"	39.0		
.75"	38.0		
.5"	38.0		
.375"	38.0		
#4	27.0		
#10	18.0		
#20	12.0		
#40	8.0		
#50	7.0		
#100	5.0		
#200	3.8	0.0 - 25.0	

* Structural Fill

Material Description

Light brown poorly graded sand with silt and gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the center of the PSSA/Hwy 67 Embankment at an elevation of 9,484'

Source of Sample: Structural Fill
Sample Number: SF-78-R

Date: 4/10/2014



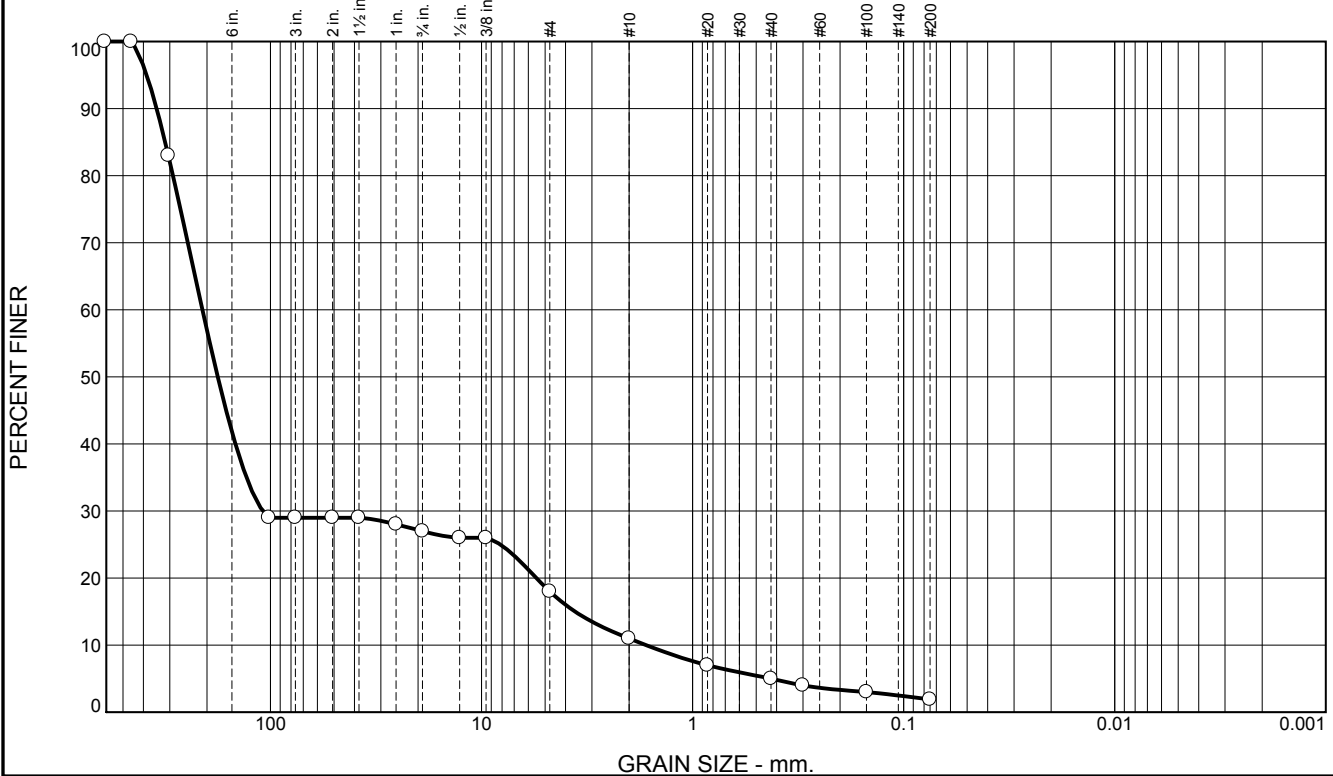
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-78-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
71.0	2.0	9.0	7.0	6.0	3.1	1.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	83.0		
4"	29.0		
3"	29.0		
2"	29.0		
1.5"	29.0		
1"	28.0		
.75"	27.0		
.5"	26.0		
.375"	26.0		
#4	18.0		
#10	11.0		
#20	7.0		
#40	5.0		
#50	4.0		
#100	3.0		
#200	1.9	0.0 - 25.0	

* Structural Fill

Material Description

Light brown poorly graded sand with silt and gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA/Hwy 67 Embankment at an elevation of 9,832'

Source of Sample: Structural Fill
Sample Number: SF-79-R

Date: 4/10/2014



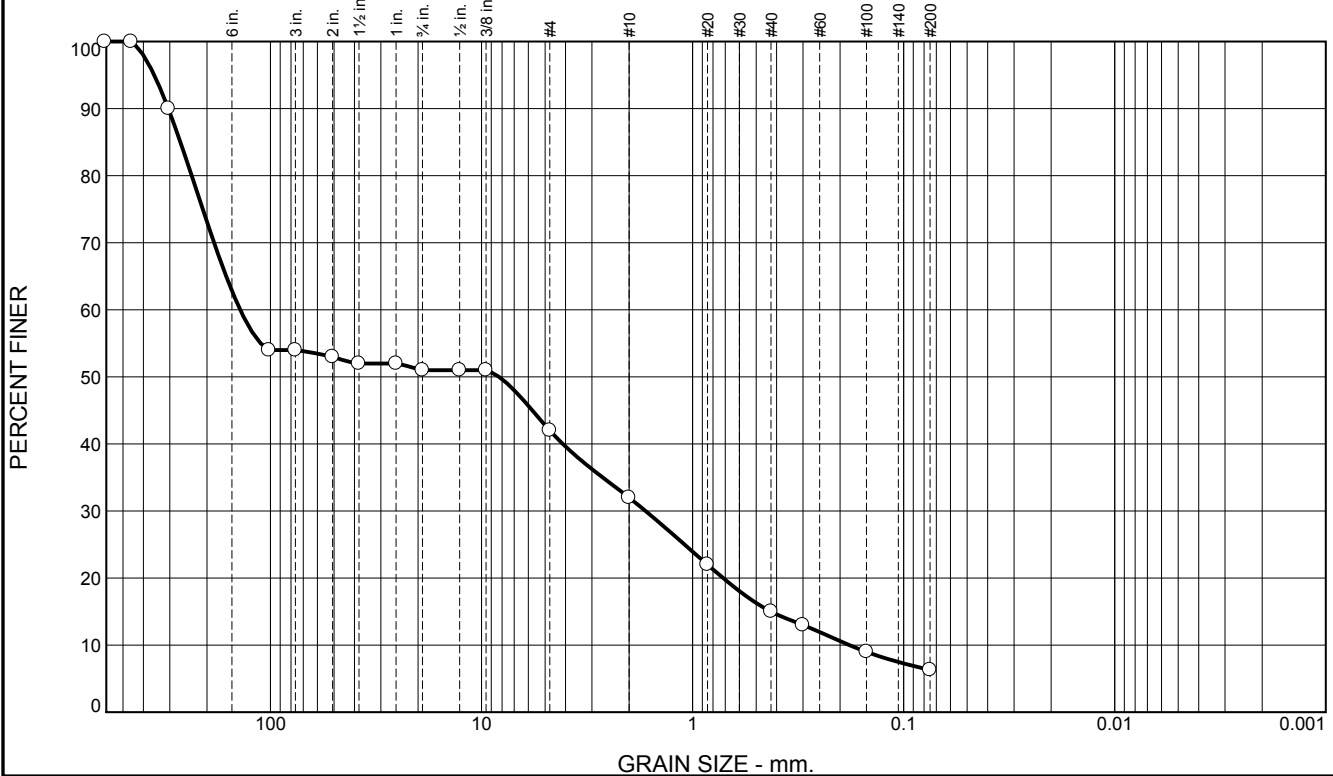
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SF-79-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
46.0	3.0	9.0	10.0	17.0	8.7	6.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
24"	100.0	100.0	
18"	100.0		
12"	90.0		
4"	54.0		
3"	54.0		
2"	53.0		
1.5"	52.0		
1"	52.0		
.75"	51.0		
.5"	51.0		
.375"	51.0		
#4	42.0		
#10	32.0		
#20	22.0		
#40	15.0		
#50	13.0		
#100	9.0		
#200	6.3		
		0.0 - 25.0	

* Structural Fill

Material Description

Light brown poorly graded sand with silt and gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the east side PSSA Ramp Fill

Source of Sample: Structural Fill
Sample Number: SF-81-R

Date: 5/6/2014



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

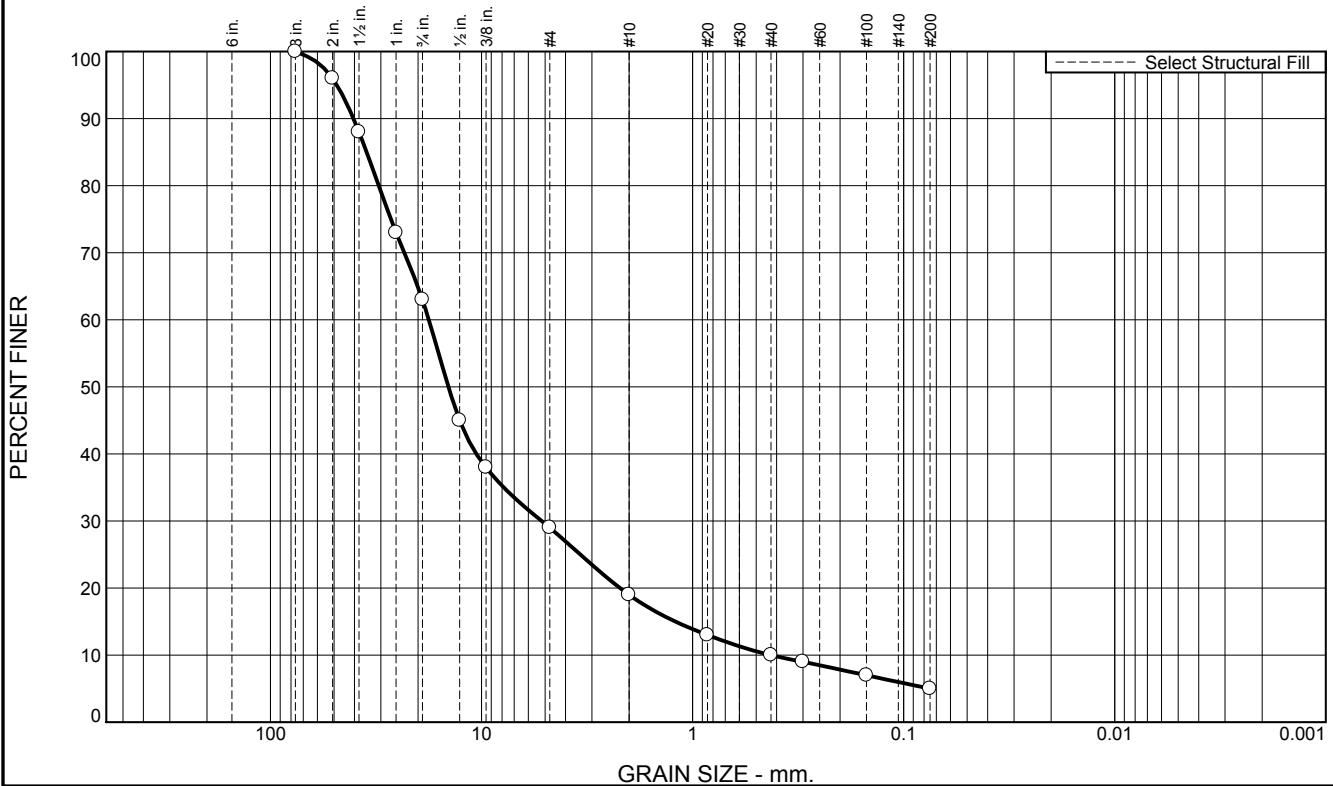
Project No: 74201125N0

Figure SF-81-R

Tested By: RM Checked By: TB

Select Structural Fill

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	37.0	34.0	10.0	9.0	5.0	5.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3.0"	100.0	100.0	
2.0"	96.0		
1.5"	88.0		
1.0"	73.0		
.75"	63.0		
.5"	45.0		
.375"	38.0		
#4	29.0		
#10	19.0		
#20	13.0		
#40	10.0		
#50	9.0		
#100	7.0		
#200	5.0		

* Select Structural Fill

Material Description

Light Brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA Primary Underdrain at approximate location N 55,659.5 E 35,215.1 at an elevation of 9350.5'

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

Date: 7/27/2014



Client: Cripple Creek & Victor Gold Mining Company

Project: VLF Squaw Gulch

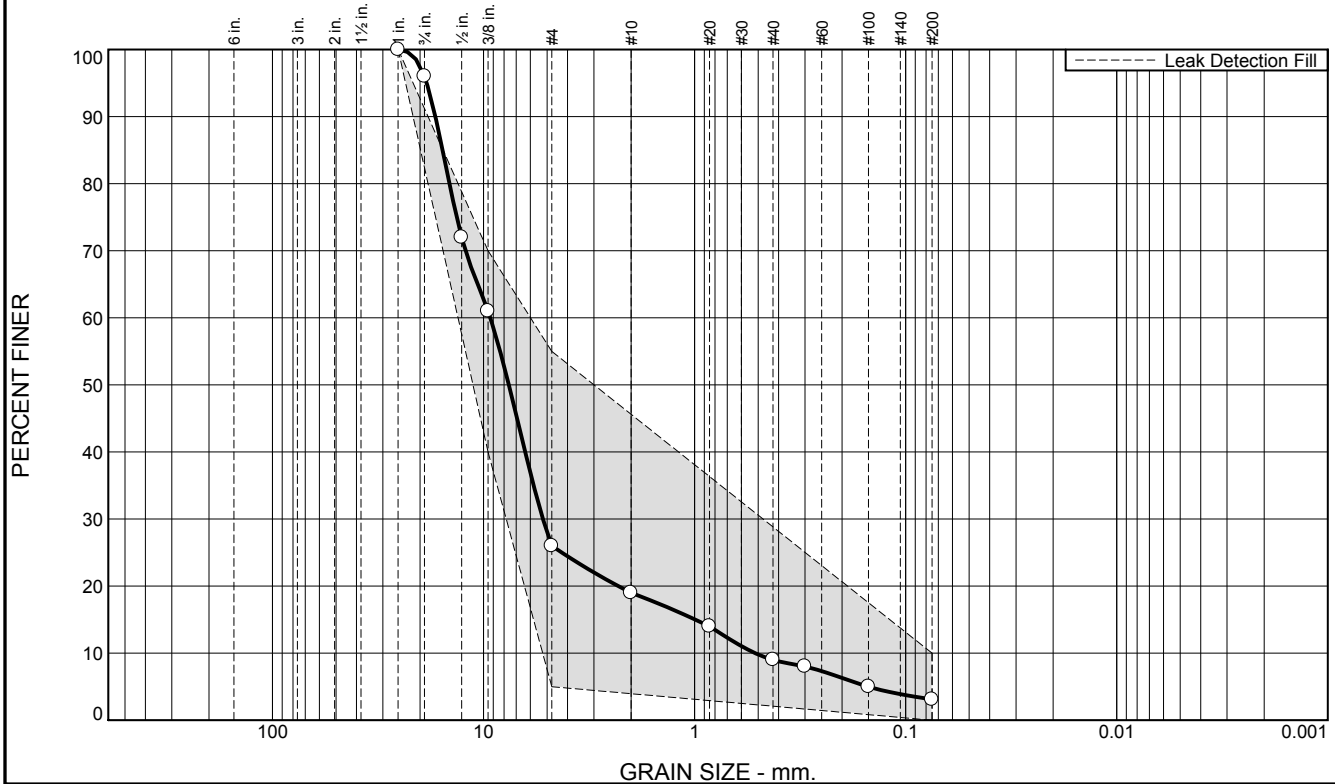
Project No: 74201125N0

Figure SSF-1-R

Tested By: Razi Molloy

Leak Detection Fill

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.0	70.0	7.0	10.0	5.9	3.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	96.0		
.5"	72.0		
.375"	61.0	40.0 - 70.0	
#4	26.0	5.0 - 55.0	
#10	19.0		
#20	14.0		
#40	9.0		
#50	8.0		
#100	5.0		
#200	3.1	0.0 - 10.0	

* Leak Detection Fill

Material Description

Red poorly graded gravel with sand

Atterberg Limits

PL= NP

LL= NP

PI= NP

Classification

USCS= GP

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA at approximate location N 54,749.6 E 34,450.9 at an elevation of 9,327.4'. AMEC approved LVSCF material for use as LDF.

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

Date: 6/6/2014



Client: Cripple Creek & Victor Gold Mining Company

Project: VLF Squaw Gulch

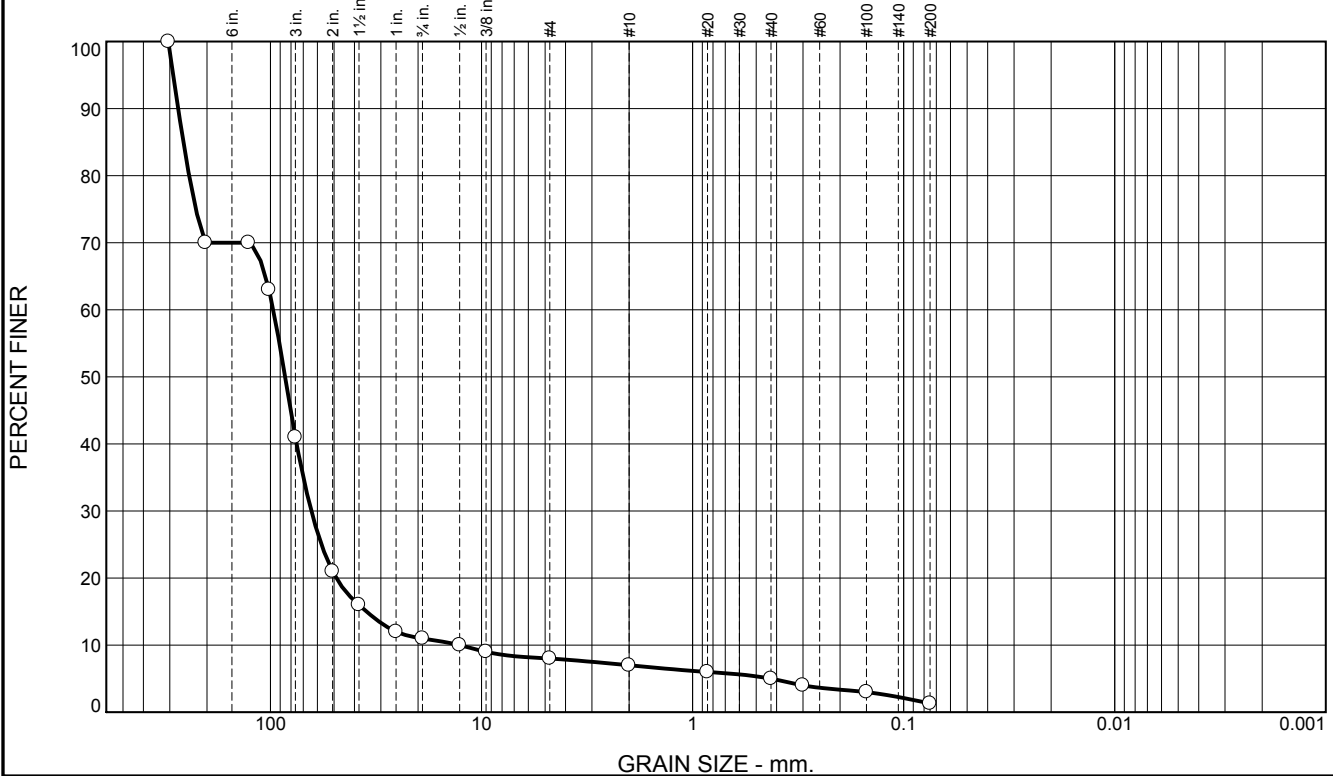
Project No: 74201125N0

Figure LDF-1-R

Tested By: Razi Molloy

Underdrain Fill

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
59.0	30.0	3.0	1.0	2.0	3.7	1.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
12"	100.0	100.0	
8"	70.0		
5"	70.0		
4"	63.0		
3"	41.0		
2"	21.0		
1.5"	16.0		
1"	12.0		
.75"	11.0		
.5"	10.0		
.375"	9.0		
#4	8.0		
#10	7.0		
#20	6.0		
#40	5.0		
#50	4.0		
#100	3.0		
#200	1.3	0.0 - 6.0	

* Underdrain Fill

Material Description

Brown poorly graded gravel with sand

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= GP

AASHTO= A-1-a

Remarks

Primary Underdrain obtained from PSSA floor below STA B14+00

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

Date: 2/17/2014



Client: Cripple Creek & Victor Gold Mining Company

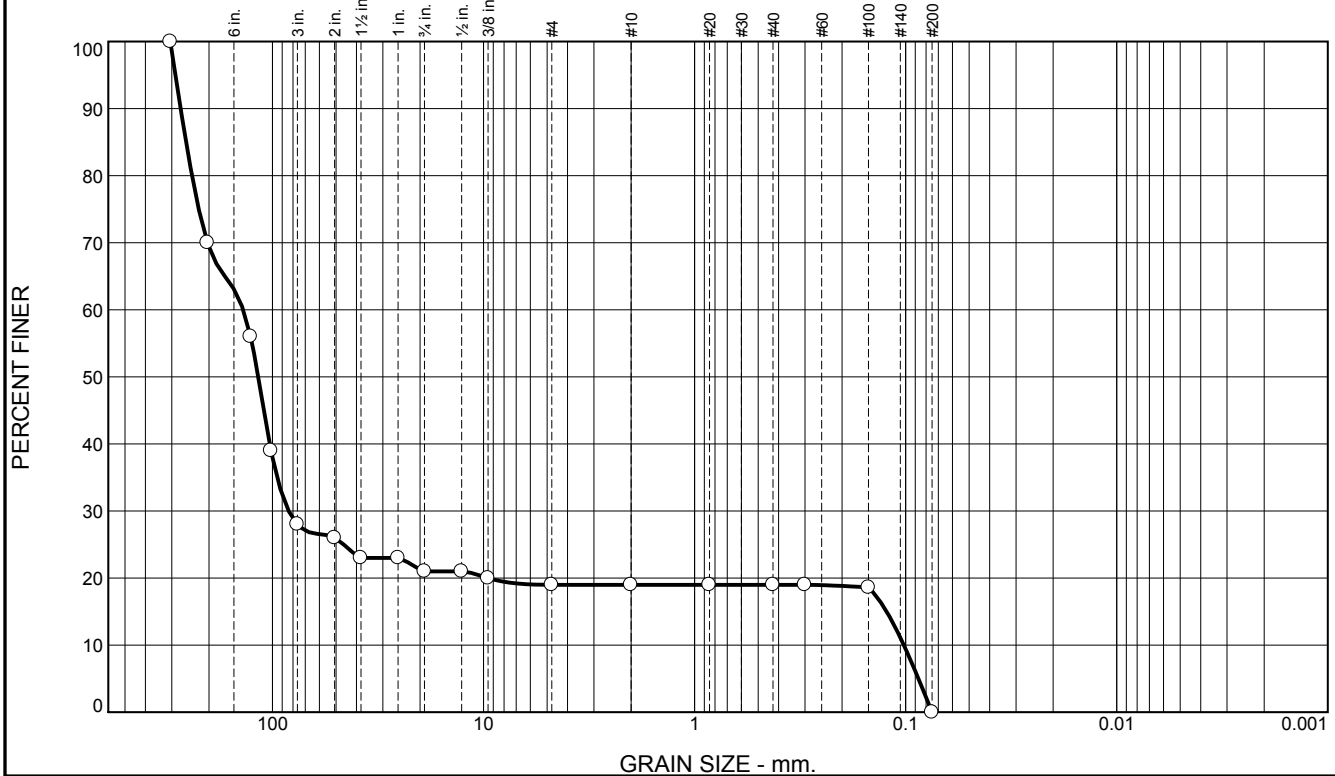
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure UF-1-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
72.0	7.0	2.0	0.0	0.0	19.0	0.0	0.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
12"	100.0	100.0	
8"	70.0		
5"	56.0		
4"	39.0		
3"	28.0		
2"	26.0		
1.5"	23.0		
1"	23.0		
.75"	21.0		
.5"	21.0		
.375"	20.0		
#4	19.0		
#10	19.0		
#20	19.0		
#40	19.0		
#50	19.0		
#100	18.6		
#200	0.0	0.0 - 6.0	

* Underdrain Fill

Material Description

Brown poorly graded gravel with sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

USCS= SP AASHTO= A-3

Remarks

Secondary Underdrain at Bench A STA A14+00 at an elevation of 9,435' to 9,445' in the PSSA

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

Date: 2/25/2014



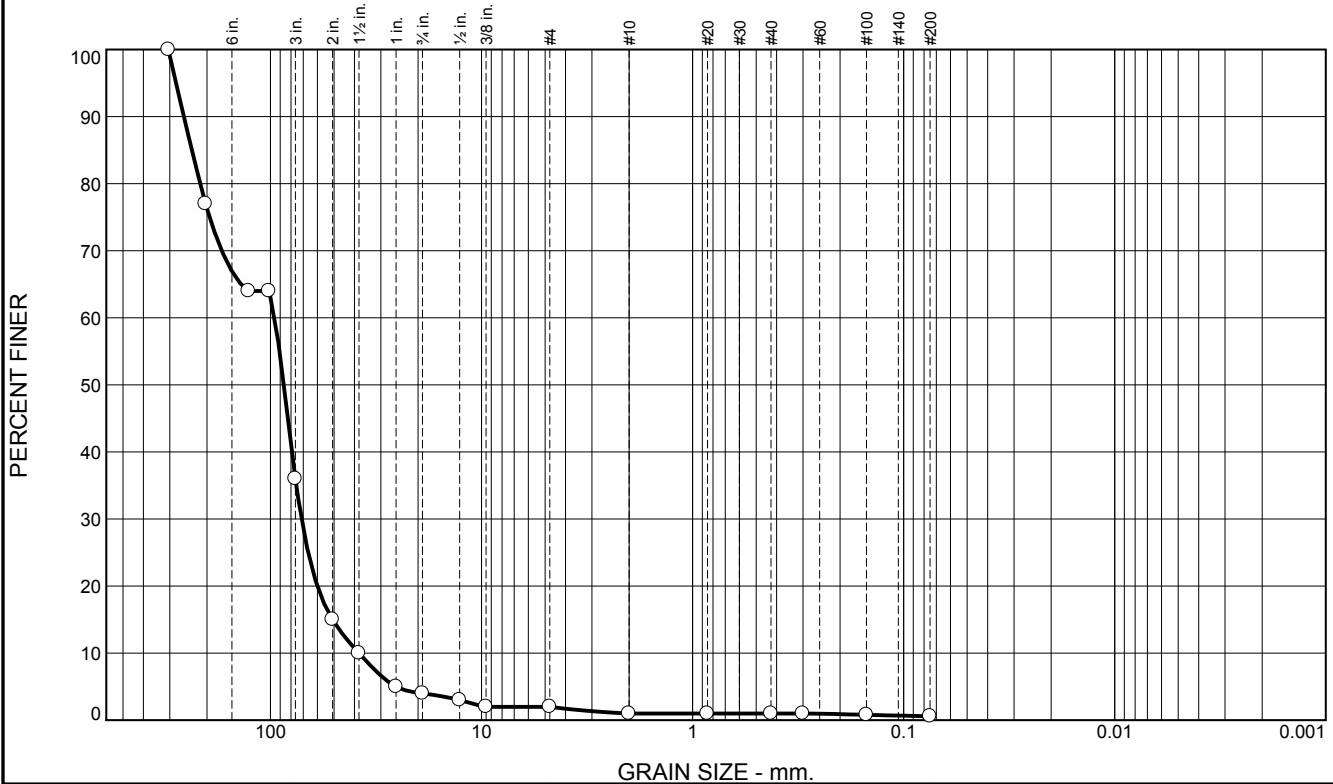
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure UF-2-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
64.0	32.0	2.0	1.0	0.0	0.4	0.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
12"	100.0	100.0	
8"	77.0		
5"	64.0		
4.0"	64.0		
3.0"	36.0		
2.0"	15.0		
1.5"	10.0		
1"	5.0		
.75"	4.0		
.5"	3.0		
.375"	2.0		
#4	2.0		
#10	1.0		
#20	1.0		
#40	1.0		
#50	1.0		
#100	0.8		
#200	0.6	0.0 - 6.0	

* Underdrain Fill

Material Description

Light brown poorly graded gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= GP

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA Floor Tertiary Underdrain

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

Date: 4/22/2014



Client: Cripple Creek & Victor Gold Mining Company

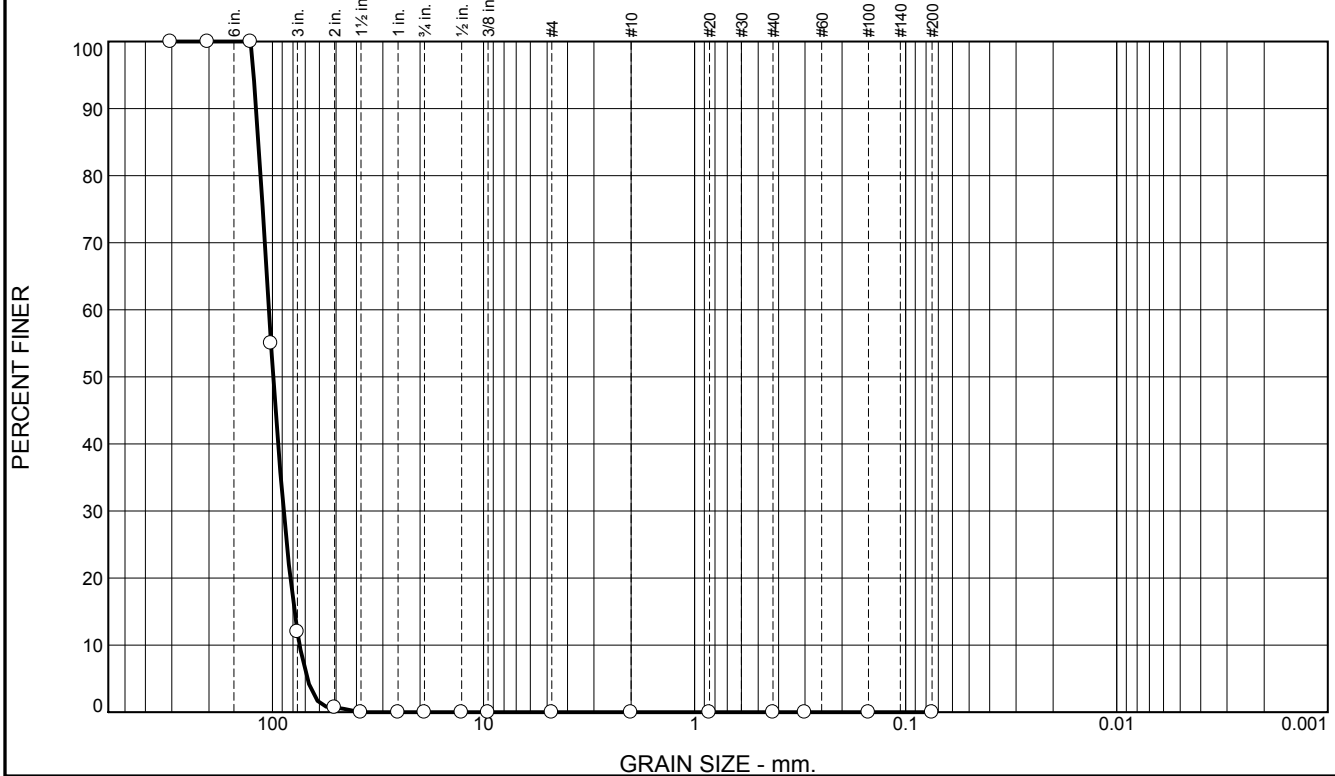
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure UF-3-R

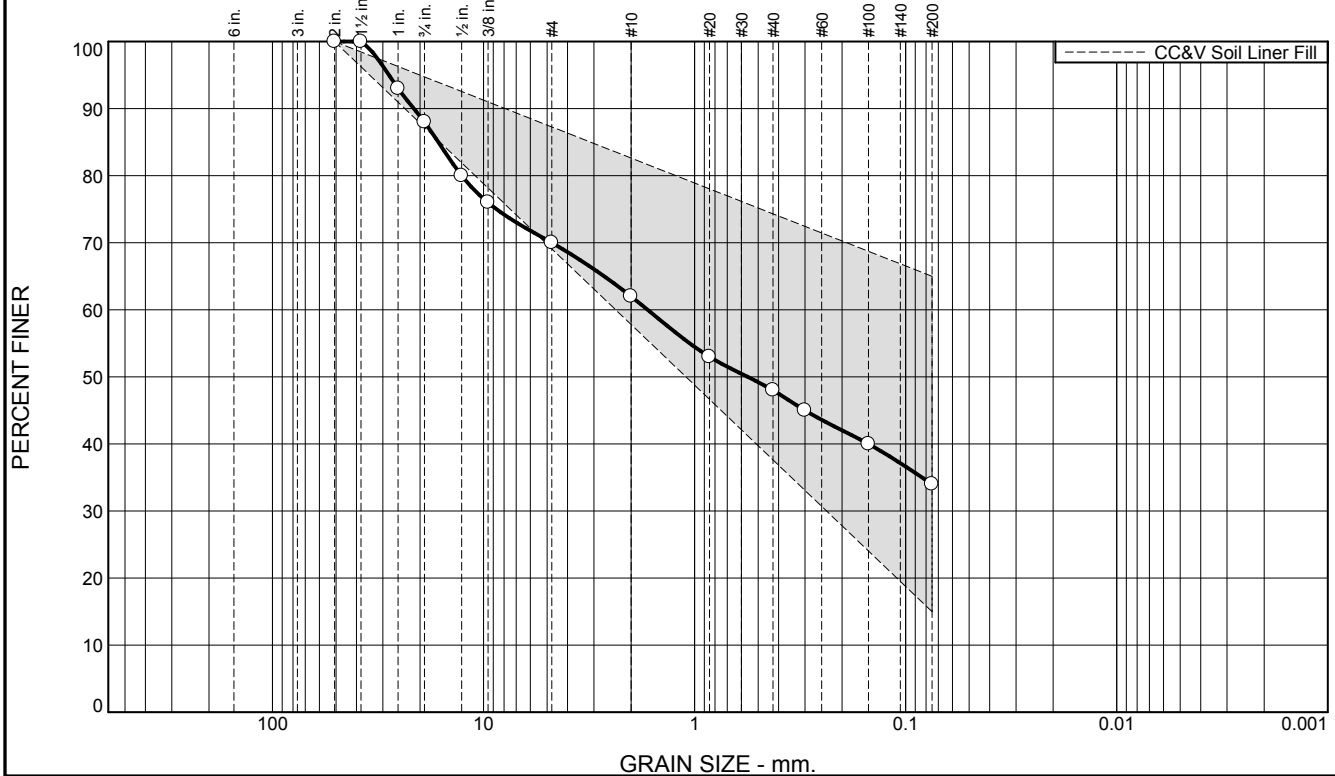
Tested By: RM Checked By: TB

Particle Size Distribution Report



Soil Liner Fill

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	12.0	18.0	8.0	14.0	14.0	34.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	100.0		
1.0"	93.0		
.75"	88.0		
.5"	80.0		
.375"	76.0		
#4	70.0		
#10	62.0		
#20	53.0		
#40	48.0		
#50	45.0		
#100	40.0		
#200	34.0	15.0 - 65.0	

* CC&V Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 19 LL= 34 PI= 15

Classification

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

Remarks

Sample obtained from the Closure Drain Area. At approximate location N 54,812.0 E 34,493.2 at an elevation of 9,335.1'

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

Date: 6/5/2014



Client: Cripple Creek & Victor Gold Mining Company

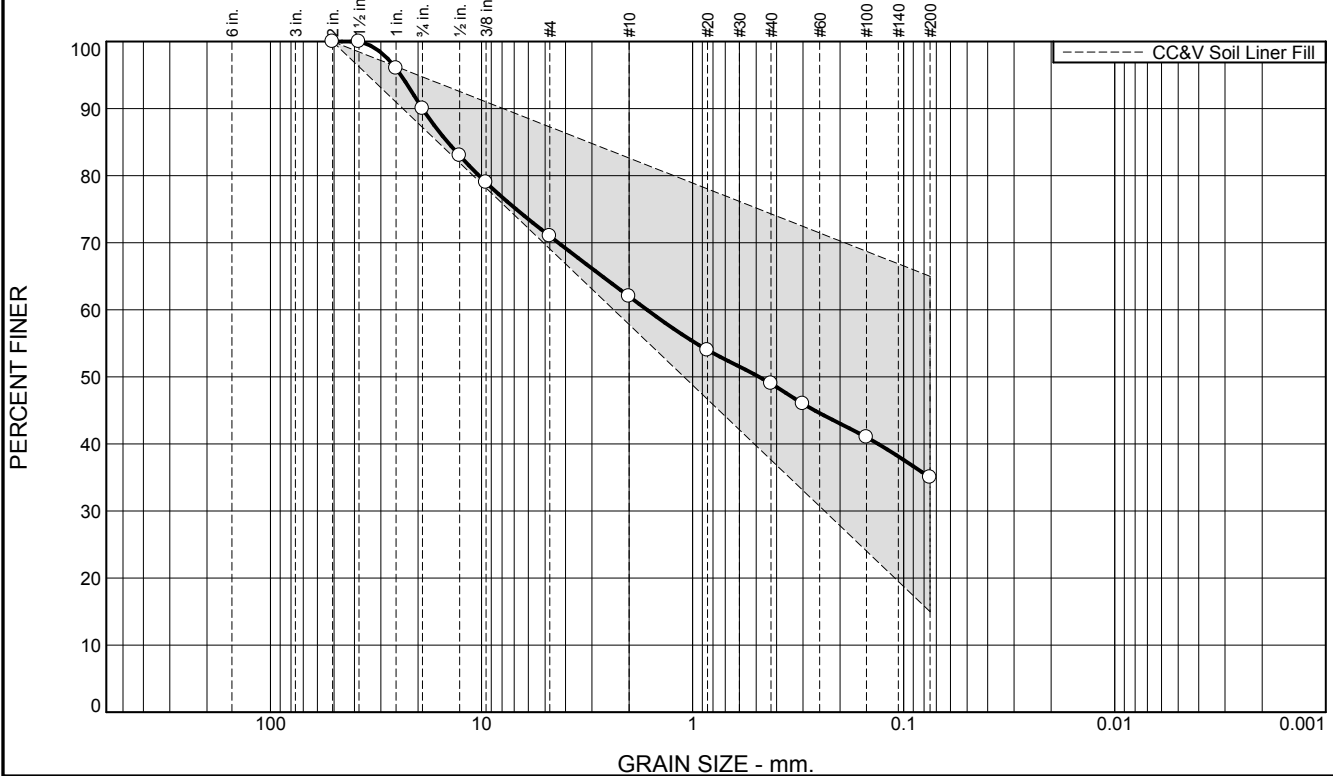
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SLF-1-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	10.0	19.0	9.0	13.0	14.0	35.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	100.0		
1.0"	96.0		
.75"	90.0		
.5"	83.0		
.375"	79.0		
#4	71.0		
#10	62.0		
#20	54.0		
#40	49.0		
#50	46.0		
#100	41.0		
#200	35.0	15.0 - 65.0	

* CC&V Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 19 LL= 36 PI= 17

Classification

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

Remarks

Sample obtained from the PSSA approximate location N 54,916.2 E 34,411.4 at an elevation of 9,352.8'

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

Date: 6/6/2014



Client: Cripple Creek & Victor Gold Mining Company

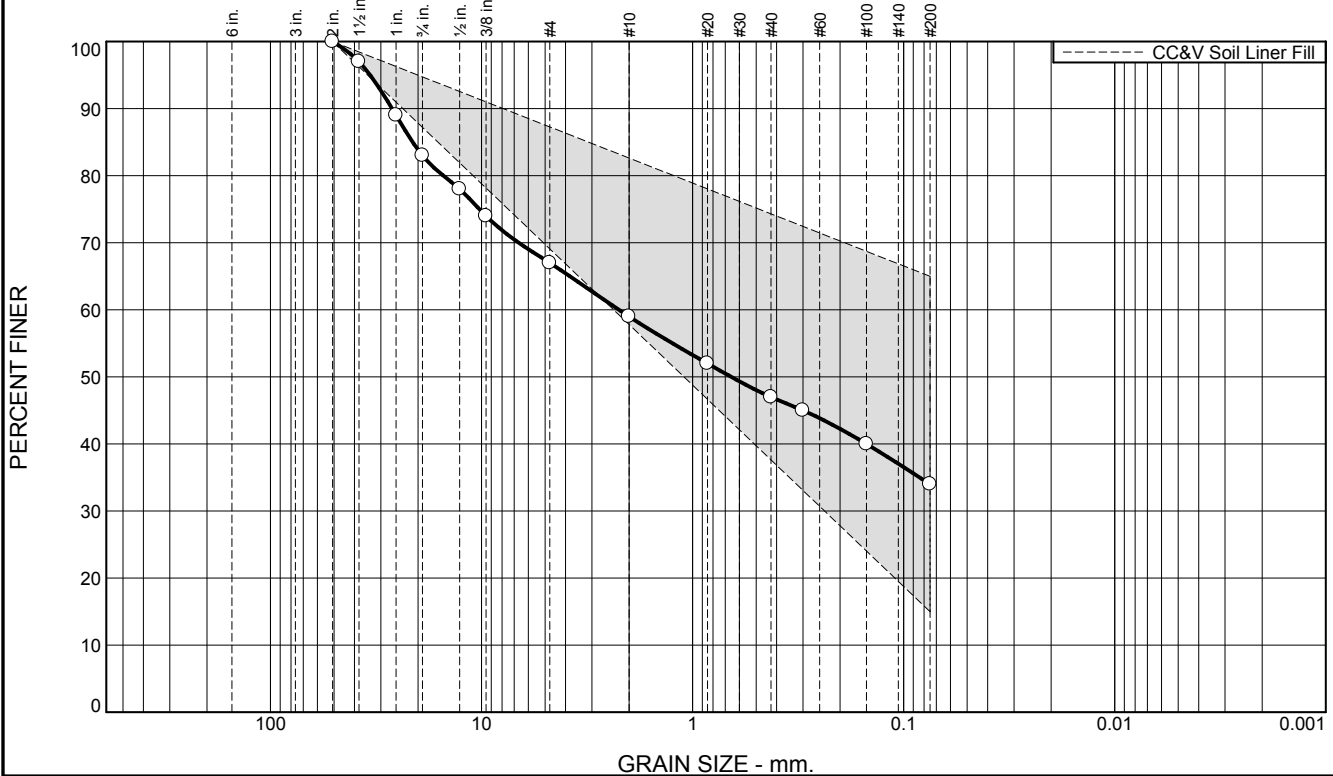
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SLF-2-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	17.0	16.0	8.0	12.0	13.0	34.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	97.0		
1.0"	89.0		
.75"	83.0		
.5"	78.0		
.375"	74.0		
#4	67.0		
#10	59.0		
#20	52.0		
#40	47.0		
#50	45.0		
#100	40.0		
#200	34.0	15.0 - 65.0	

* 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-2-6(2)

Remarks

Sample obtained from the PSSA approximate location N 55,006.1 E 34,105.6 at an elevation of 9,446.5'

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

Date: 6/9/2014



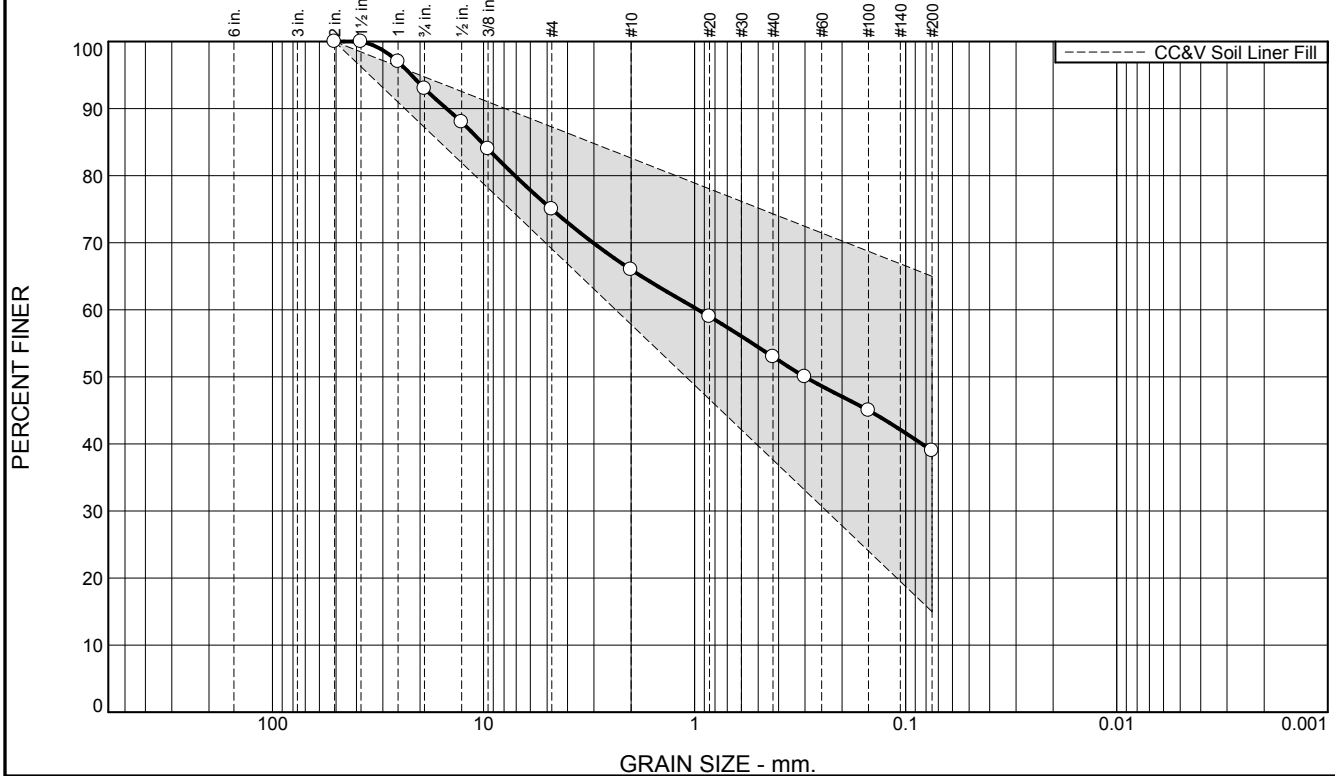
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SLF-3-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	7.0	18.0	9.0	13.0	14.0	39.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	100.0		
1.0"	97.0		
.75"	93.0		
.5"	88.0		
.375"	84.0		
#4	75.0		
#10	66.0		
#20	59.0		
#40	53.0		
#50	50.0		
#100	45.0		
#200	39.0	15.0 - 65.0	

* 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(2)

Remarks

Sample obtained from the PSSA at approximate location N 54,715.9 E 34,079.6 at an elevation of 9,430.3'

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

Date: 6/10/2014



Client: Cripple Creek & Victor Gold Mining Company

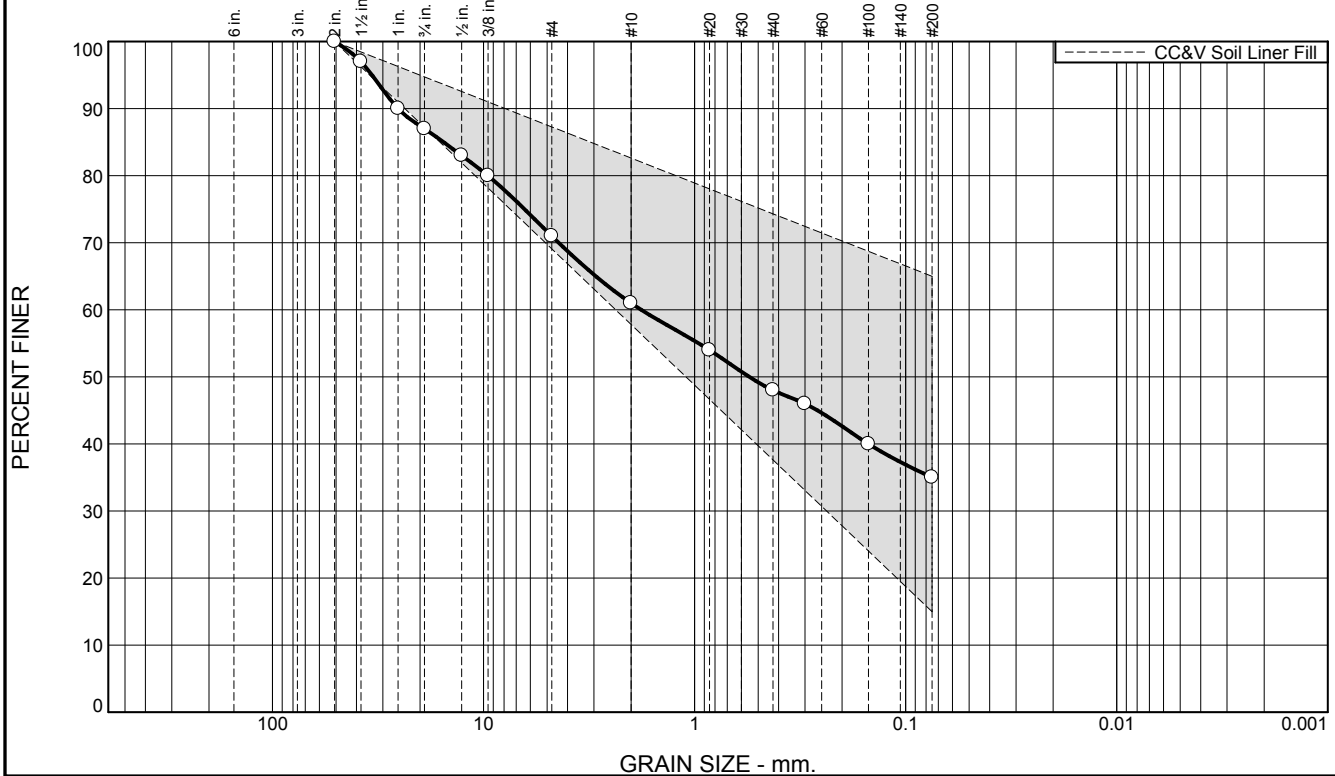
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SLF-4-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	13.0	16.0	10.0	13.0	13.0	35.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	97.0		
1.0"	90.0		
.75"	87.0		
.5"	83.0		
.375"	80.0		
#4	71.0		
#10	61.0		
#20	54.0		
#40	48.0		
#50	46.0		
#100	40.0		
#200	35.0	15.0 - 65.0	

* CC&V Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 17 LL= 36 PI= 19

Classification

USCS= SC AASHTO= A-2-6(2)

Remarks

Sample obtained from the PSSA at approximate location N 54,744.6 E 34,386.2 at an elevation of 9,341.2'

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

Date: 6/13/2014



Client: Cripple Creek & Victor Gold Mining Company

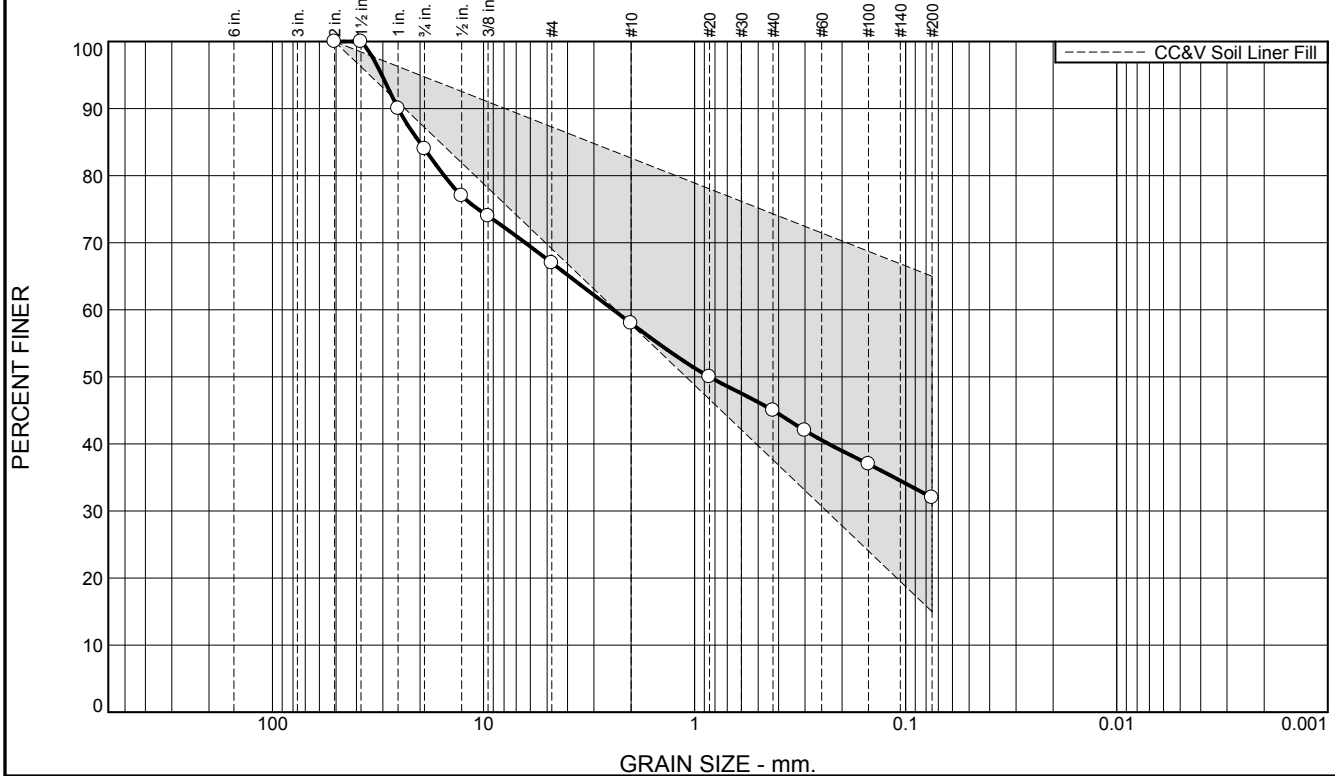
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SLF-5-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	16.0	17.0	9.0	13.0	13.0	32.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	100.0		
1.0"	90.0		
.75"	84.0		
.5"	77.0		
.375"	74.0		
#4	67.0		
#10	58.0		
#20	50.0		
#40	45.0		
#50	42.0		
#100	37.0		
#200	32.0	15.0 - 65.0	

* CC&V Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 19 LL= 37 PI= 18

Classification

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

Remarks

Sample obtained from the PSSA at approximate location N 54,816.4 E 34,623.0 at an elevation of 9,348.5'

Source of Sample: PSSA-Soil Liner Fill
Sample Number: SLF-6-R

Date: 6/13/2014



Client: Cripple Creek & Victor Gold Mining Company

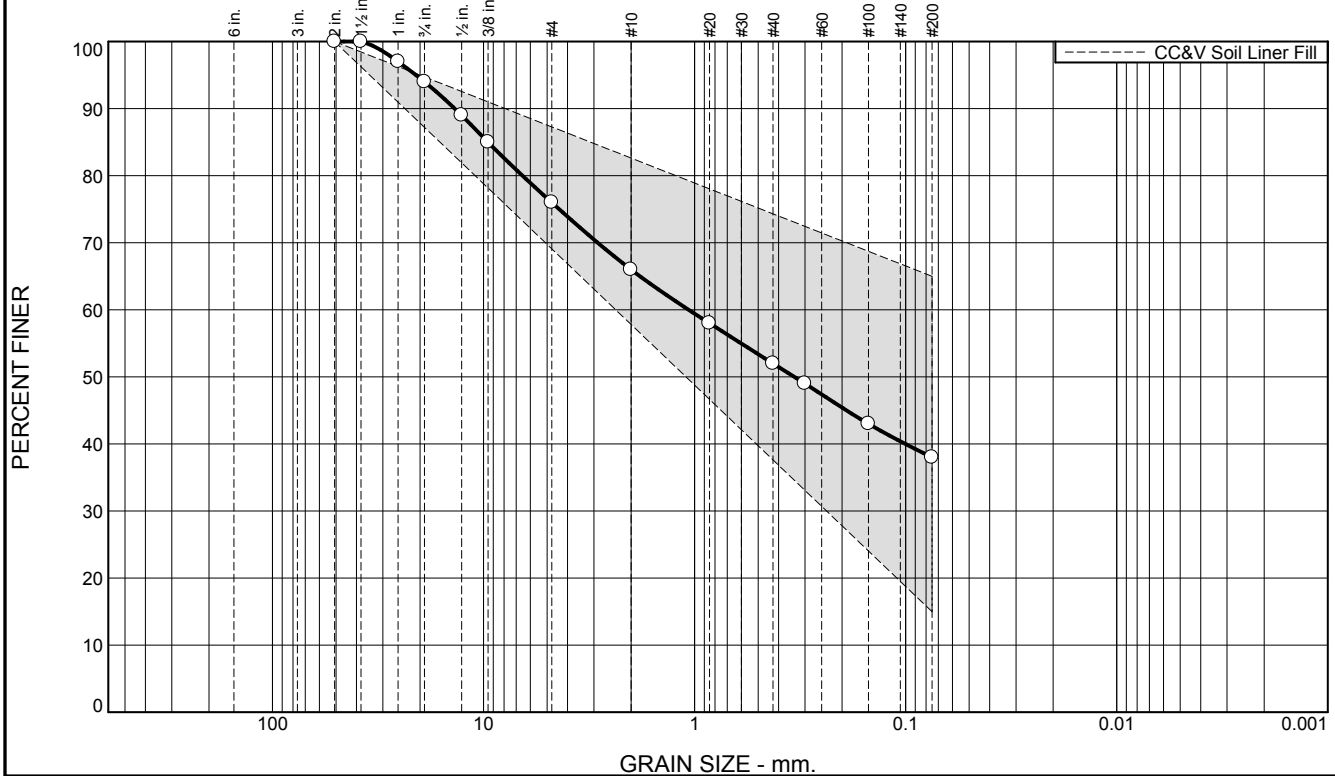
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SLF-6-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	6.0	18.0	10.0	14.0	14.0	38.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	100.0		
1.0"	97.0		
.75"	94.0		
.5"	89.0		
.375"	85.0		
#4	76.0		
#10	66.0		
#20	58.0		
#40	52.0		
#50	49.0		
#100	43.0		
#200	38.0	15.0 - 65.0	

* CC&V Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 17 LL= 36 PI= 19

Classification

USCS= SC AASHTO= A-6(3)

Remarks

Sample obtained from the PSSA at approximate location N 54,560.8 E 34,727.9 at an elevation of 9,447.8'

Source of Sample: PSSA-Soil Liner Fill
Sample Number: SLF-7-R

Date: 6/13/2014



Client: Cripple Creek & Victor Gold Mining Company

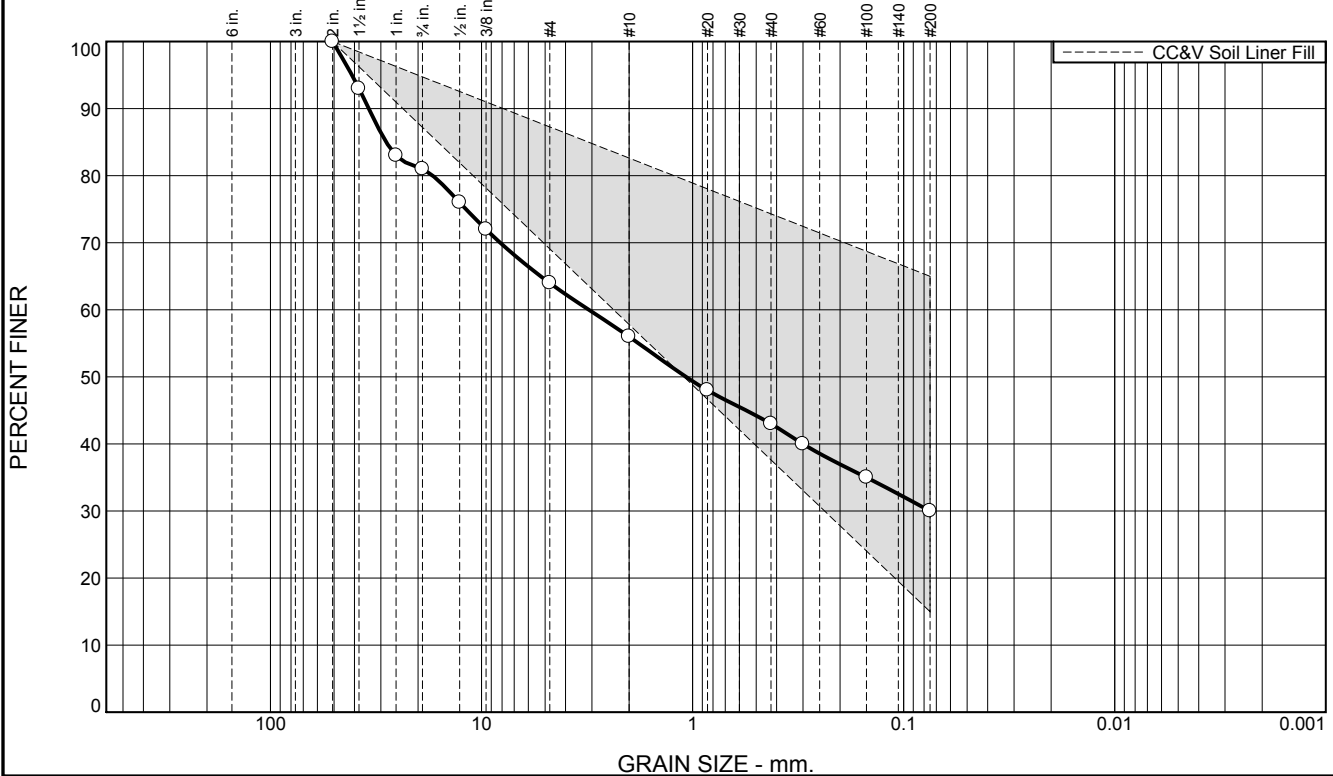
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SLF-7-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	19.0	17.0	8.0	13.0	13.0	30.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	93.0		
1.0"	83.0		
.75"	81.0		
.5"	76.0		
.375"	72.0		
#4	64.0		
#10	56.0		
#20	48.0		
#40	43.0		
#50	40.0		
#100	35.0		
#200	30.0	15.0 - 65.0	

* CC&V Soil Liner Fill

Material Description

Brown silty gravel with sand

Atterberg Limits

PL= 18 LL= 36 PI= 18

Classification

USCS= GM AASHTO= A-2-4(0)

Remarks

Sample obtained from the PSSA at approximate location N 54,365.9 E 34,431.8 at an elevation of 9,445.3'

Source of Sample: PSSA-Soil Liner Fill
Sample Number: SLF-8-R

Date: 6/13/2014



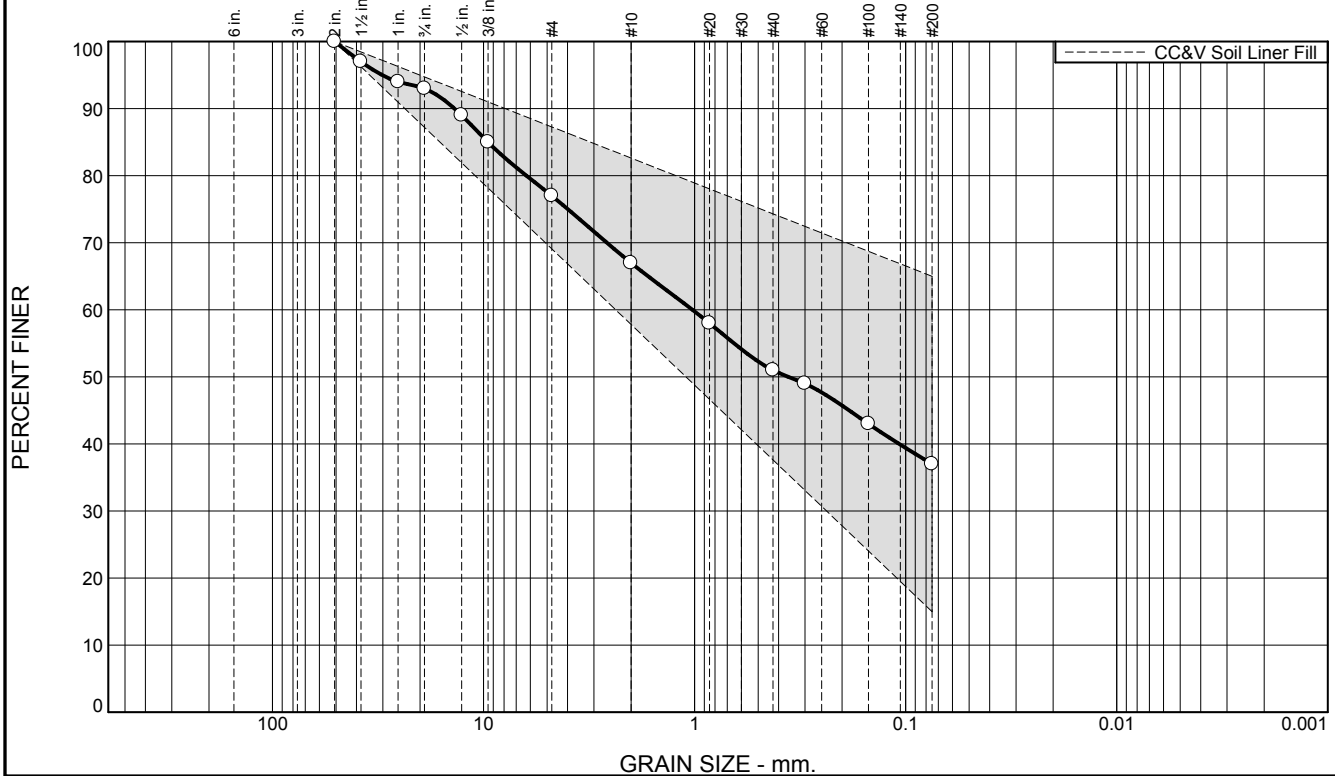
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SLF-8-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	7.0	16.0	10.0	16.0	14.0	37.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	97.0		
1.0"	94.0		
.75"	93.0		
.5"	89.0		
.375"	85.0		
#4	77.0		
#10	67.0		
#20	58.0		
#40	51.0		
#50	49.0		
#100	43.0		
#200	37.0	15.0 - 65.0	

* CC&V Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 17 LL= 33 PI= 16

Classification

USCS= SC AASHTO= A-6(2)

Remarks

Sample obtained from the PSSA at approximate location N 54,561.1 E 34,370.3 at an elevation of 9,403.7'

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

Date: 6/13/2014



Client: Cripple Creek & Victor Gold Mining Company

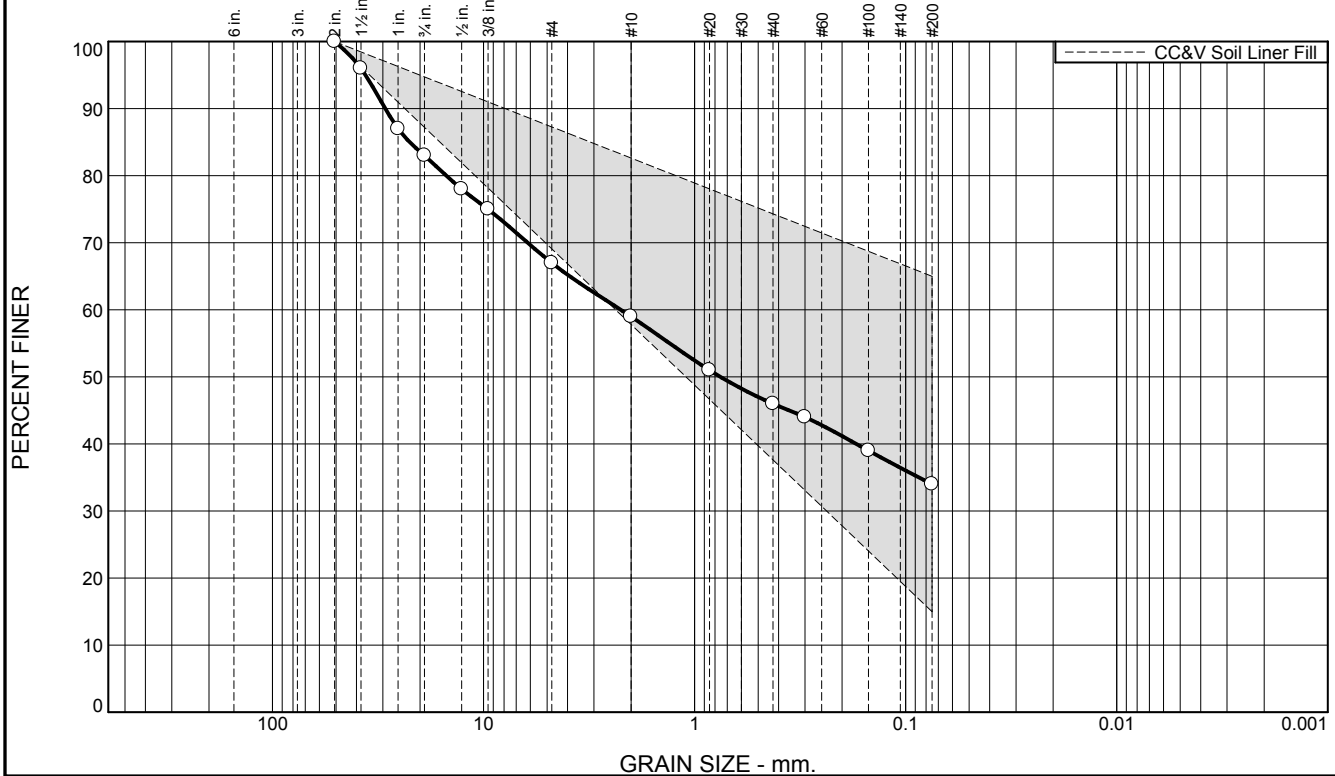
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SLF-9-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	17.0	16.0	8.0	13.0	12.0	34.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	96.0		
1.0"	87.0		
.75"	83.0		
.5"	78.0		
.375"	75.0		
#4	67.0		
#10	59.0		
#20	51.0		
#40	46.0		
#50	44.0		
#100	39.0		
#200	34.0	15.0 - 65.0	

* CC&V Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 18 LL= 34 PI= 16

Classification

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

Remarks

Sample obtained from the PSSA at approximate location N 55,233.6 E 34,706.6 at an elevation of 9,345.4'

Source of Sample: PSSA-Soil Liner Fill
Sample Number: SLF-10-R

Date: 6/19/2014



Client: Cripple Creek & Victor Gold Mining Company

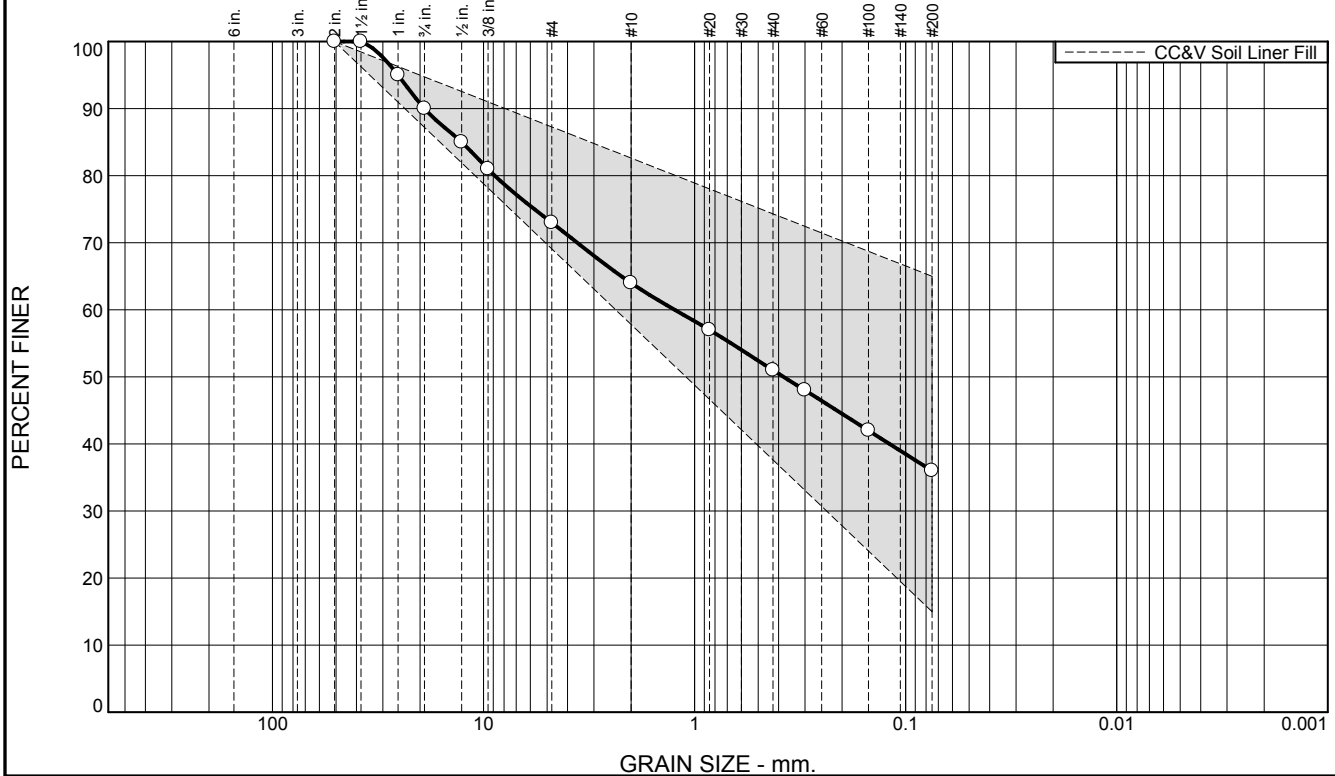
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SLF-10-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	10.0	17.0	9.0	13.0	15.0	36.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	100.0		
1.0"	95.0		
.75"	90.0		
.5"	85.0		
.375"	81.0		
#4	73.0		
#10	64.0		
#20	57.0		
#40	51.0		
#50	48.0		
#100	42.0		
#200	36.0	15.0 - 65.0	

* 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(2)

Remarks

Sample obtained from the PSSA at approximate location N 55,366.3 E 34,603.3 at an elevation of 9,379.3'

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

Date: 6/19/2014



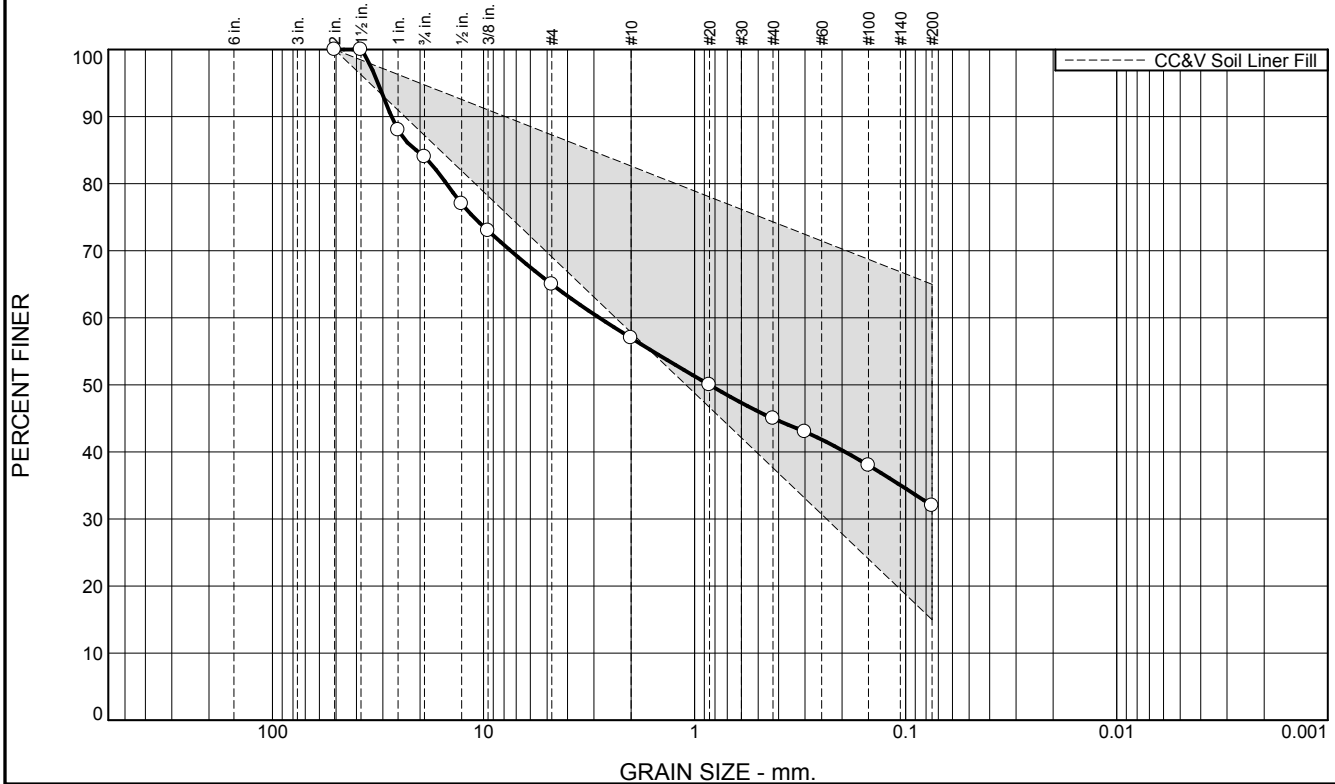
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SLF-11-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	16.0	19.0	8.0	12.0	13.0	32.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	100.0		
1.0"	88.0		
.75"	84.0		
.5"	77.0		
.375"	73.0		
#4	65.0		
#10	57.0		
#20	50.0		
#40	45.0		
#50	43.0		
#100	38.0		
#200	32.0	15.0 - 65.0	

* CC&V Soil Liner Fill

Material Description

Brown clayey gravel with sand

Atterberg Limits

PL= 18 LL= 36 PI= 18

Classification

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

Remarks

Sample obtained from the PSSA at approximate location N 55,473.3 E 34,731.8 at an elevation of 9,382.5'

Source of Sample: PSSA-Soil Liner Fill
Sample Number: SLF-12-R

Date: 6/19/2014



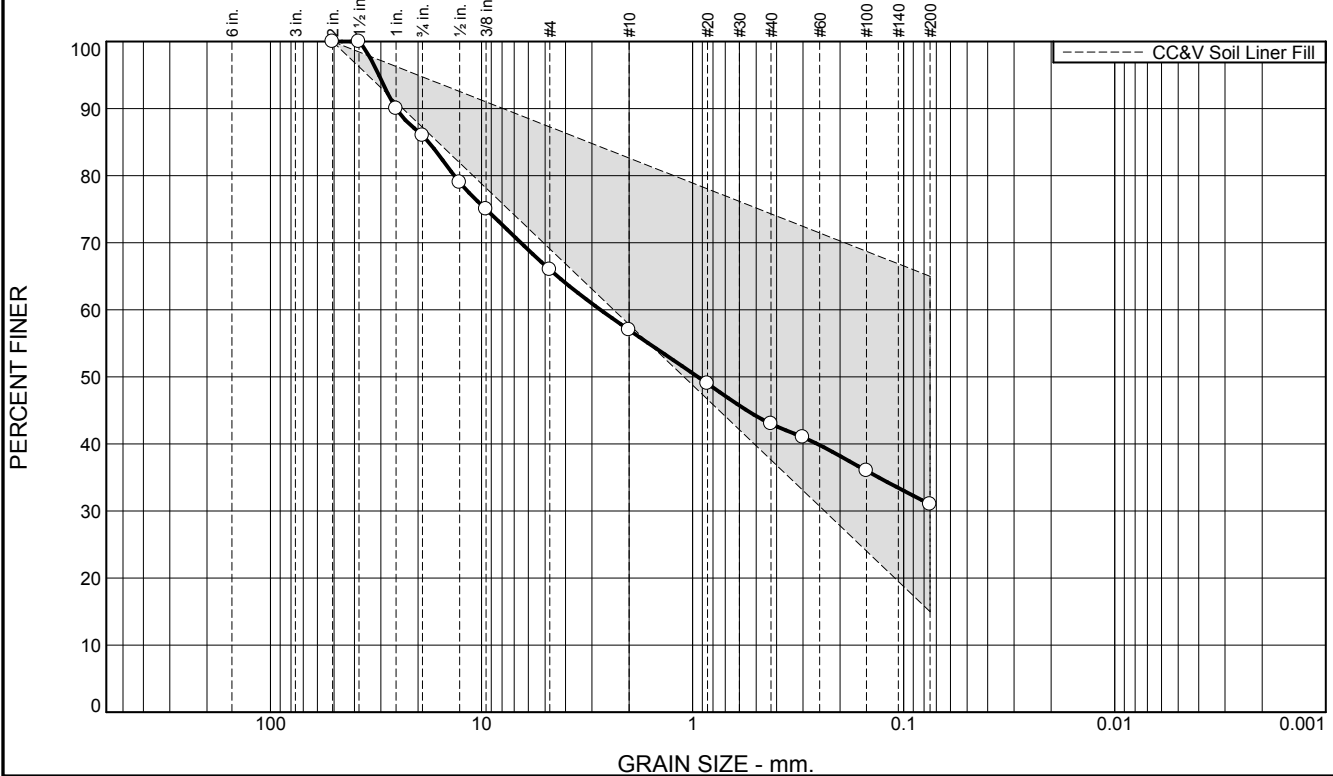
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SLF-12-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	14.0	20.0	9.0	14.0	12.0	31.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	100.0		
1.0"	90.0		
.75"	86.0		
.5"	79.0		
.375"	75.0		
#4	66.0		
#10	57.0		
#20	49.0		
#40	43.0		
#50	41.0		
#100	36.0		
#200	31.0	15.0 - 65.0	

* CC&V Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 17 LL= 36 PI= 19

Classification

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

Remarks

Sample obtained from the PSSA at approximate location N 55,125.0 E 35,072.5 at an elevation of 9,405.1'

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

Date: 6/19/2014



Client: Cripple Creek & Victor Gold Mining Company

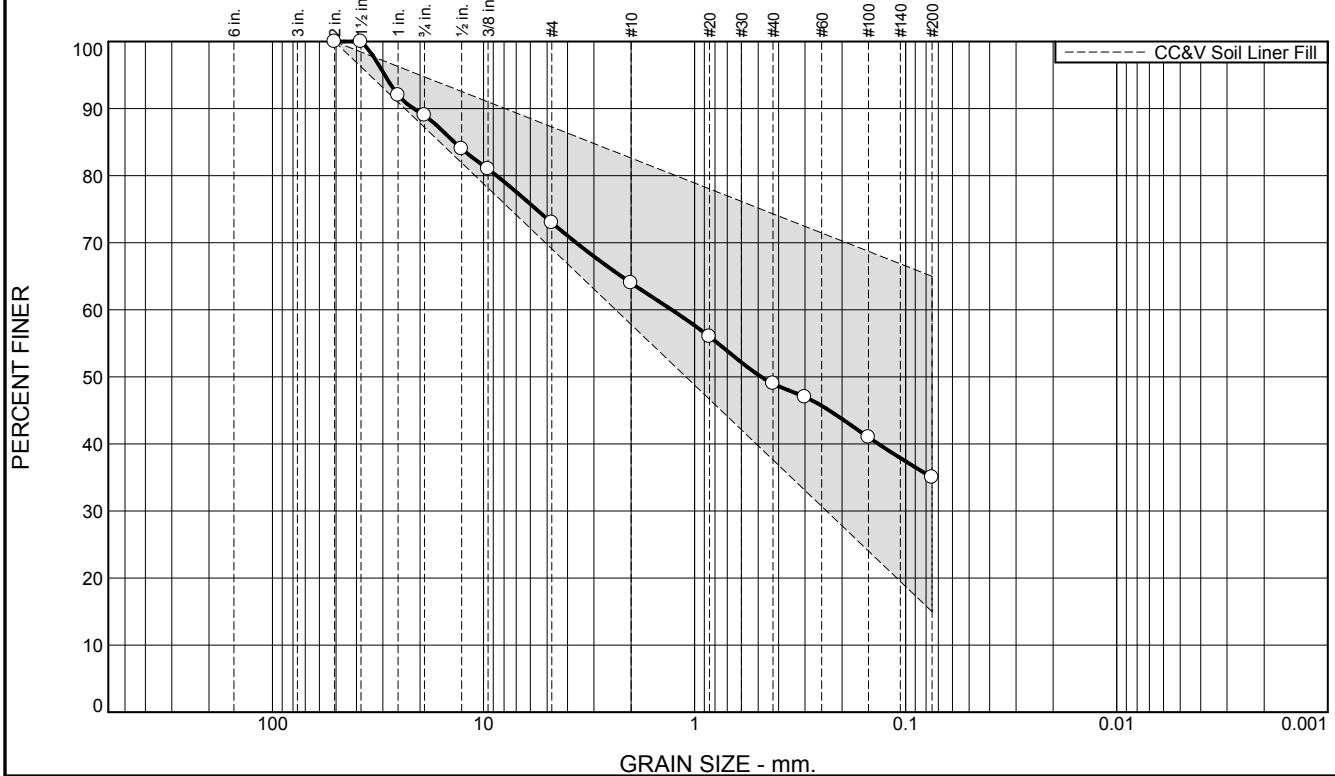
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SLF-13-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	11.0	16.0	9.0	15.0	14.0	35.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	100.0		
1.0"	92.0		
.75"	89.0		
.5"	84.0		
.375"	81.0		
#4	73.0		
#10	64.0		
#20	56.0		
#40	49.0		
#50	47.0		
#100	41.0		
#200	35.0	15.0 - 65.0	

* 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-2-6(2)

Remarks

Sample obtained from the PSSA at approximate location N 54,697.5 E 34,594.4 at an elevation of 9,371.4'

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

Date: 6/19/2014



Client: Cripple Creek & Victor Gold Mining Company

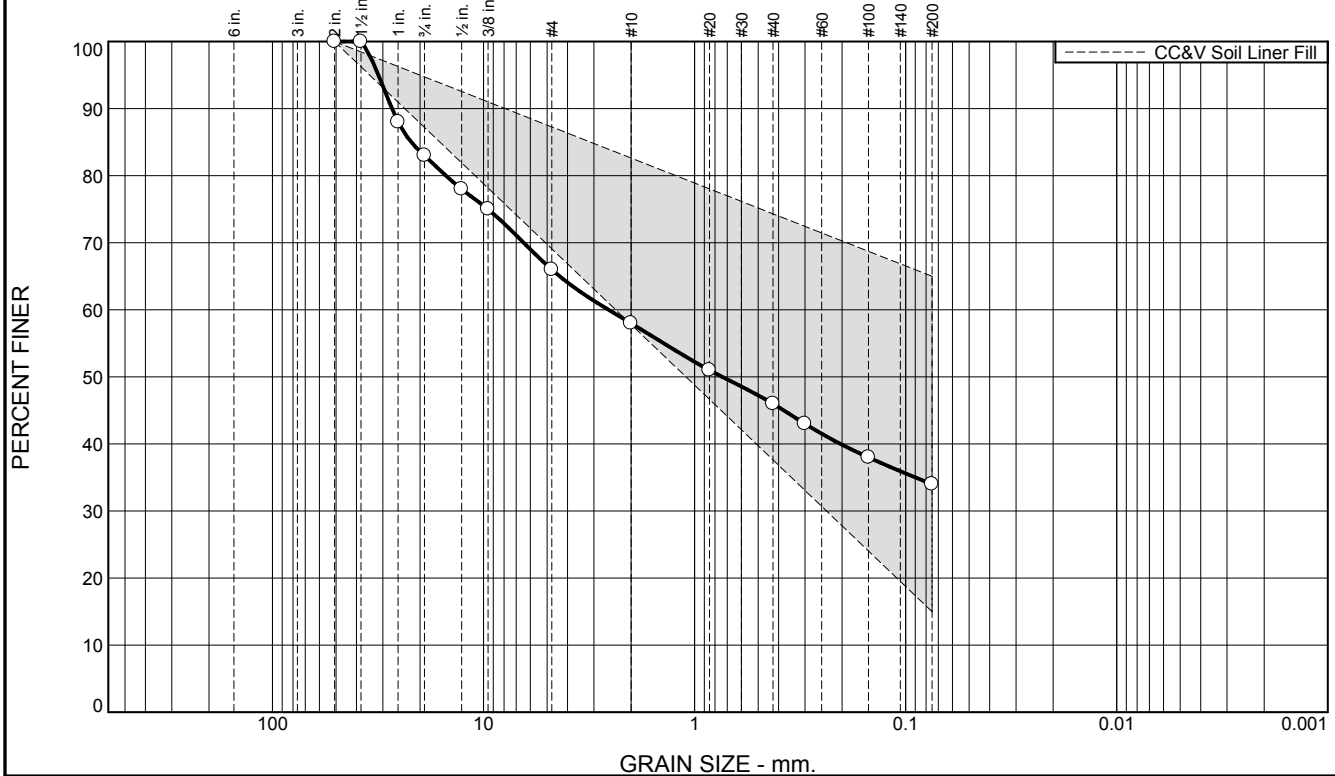
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SLF-14-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	17.0	17.0	8.0	12.0	12.0	34.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	100.0		
1.0"	88.0		
.75"	83.0		
.5"	78.0		
.375"	75.0		
#4	66.0		
#10	58.0		
#20	51.0		
#40	46.0		
#50	43.0		
#100	38.0		
#200	34.0	15.0 - 65.0	

* CC&V Soil Liner Fill

Material Description

Brown clayey gravel with sand

Atterberg Limits

PL= 15 LL= 34 PI= 19

Classification

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

Remarks

Sample obtained from the PSSA at approximate location N 56,018.4 E 35,088.6 at an elevation of 9,433.8'

Source of Sample: PSSA-Soil Liner Fill
Sample Number: SLF-15-R

Date: 6/30/2014



Client: Cripple Creek & Victor Gold Mining Company

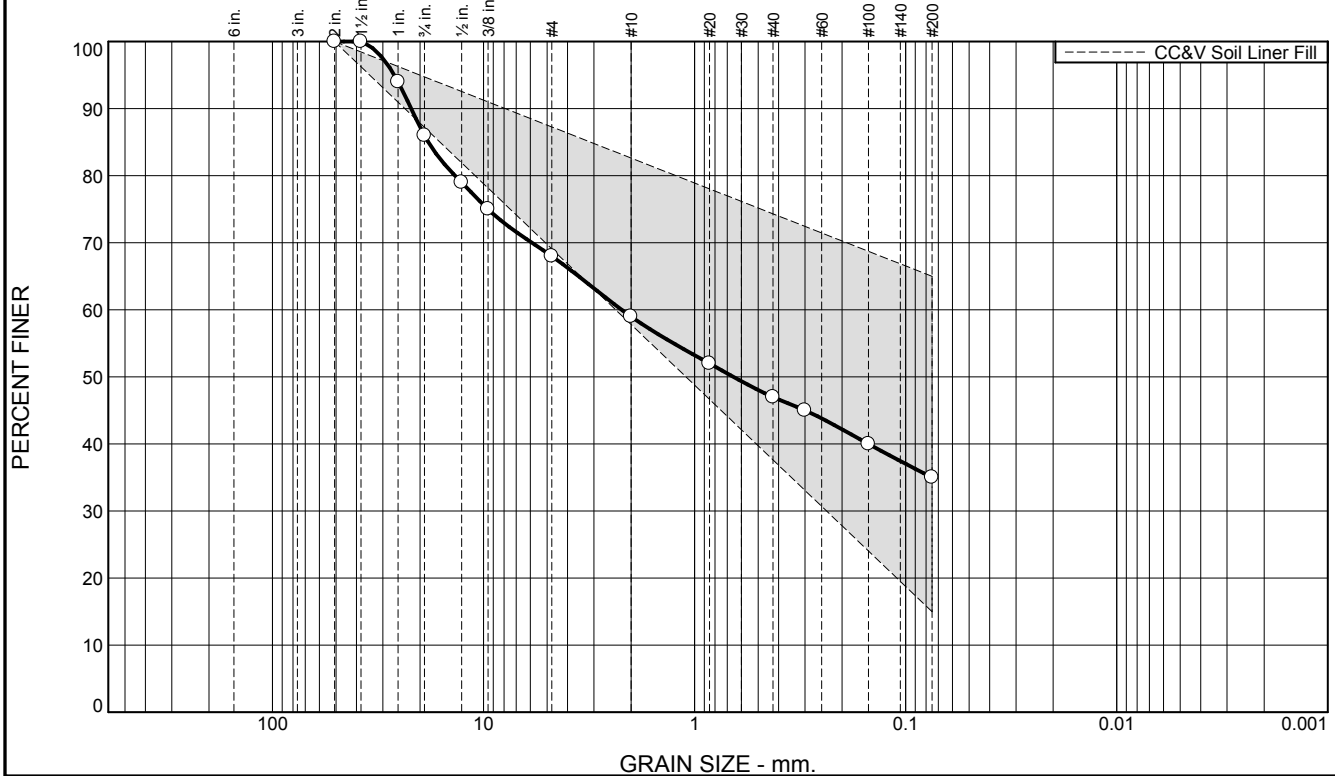
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SLF-15-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	14.0	18.0	9.0	12.0	12.0	35.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	100.0		
1.0"	94.0		
.75"	86.0		
.5"	79.0		
.375"	75.0		
#4	68.0		
#10	59.0		
#20	52.0		
#40	47.0		
#50	45.0		
#100	40.0		
#200	35.0	15.0 - 65.0	

* 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-2-6(1)

Remarks

Sample obtained from the PSSA at approximate location N 55,914.4 E 35,348.7 at an elevation of 9,435.9'

Source of Sample: PSSA-Soil Liner Fill
Sample Number: SLF-16-R

Date: 7/10/2014



Client: Cripple Creek & Victor Gold Mining Company

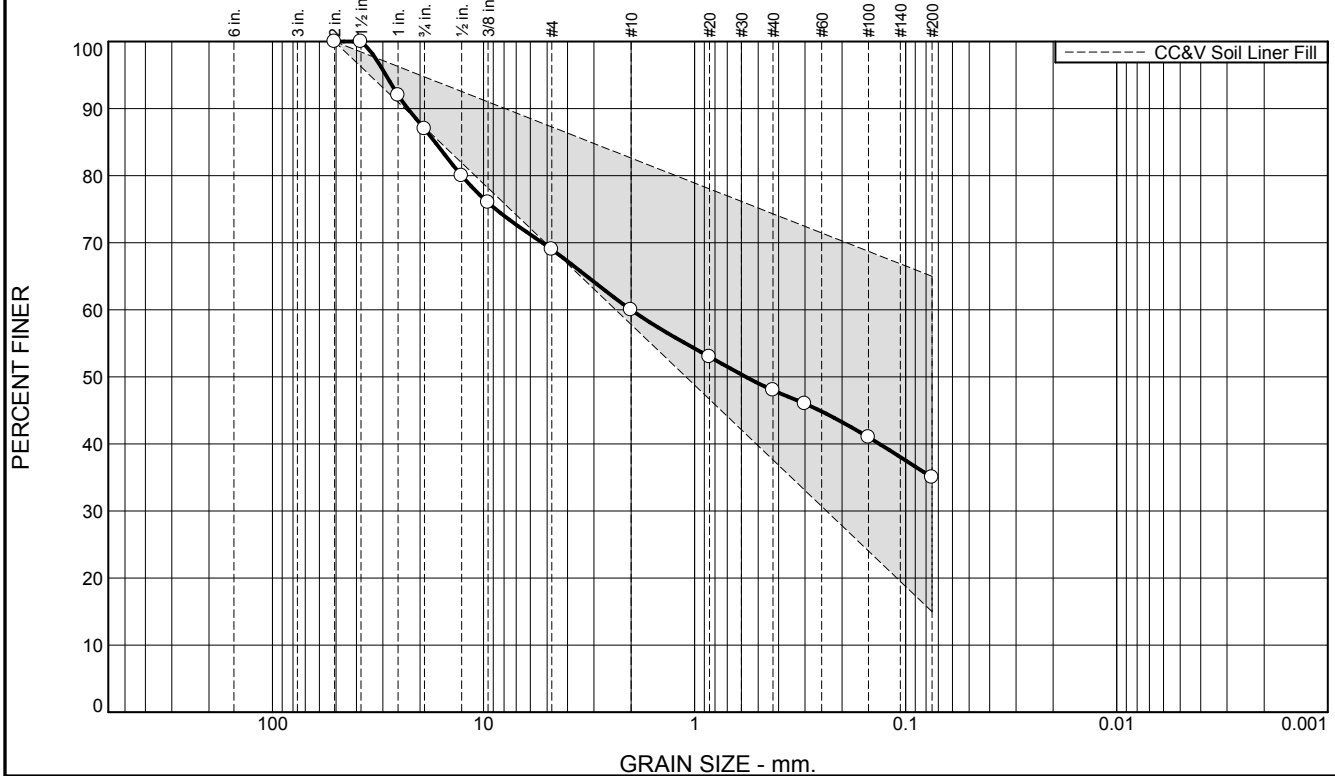
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SLF-16-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	13.0	18.0	9.0	12.0	13.0	35.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	100.0		
1.0"	92.0		
.75"	87.0		
.5"	80.0		
.375"	76.0		
#4	69.0		
#10	60.0		
#20	53.0		
#40	48.0		
#50	46.0		
#100	41.0		
#200	35.0	15.0 - 65.0	

* CC&V Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 17 LL= 35 PI= 18

Classification

USCS= SC AASHTO= A-2-6(2)

Remarks

Sample obtained from the PSSA approximate location N 55, 699.3 E 34,983.3 at an elevation of 9,386.3'

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

Date: 7/25/2014



Client: Cripple Creek & Victor Gold Mining Company

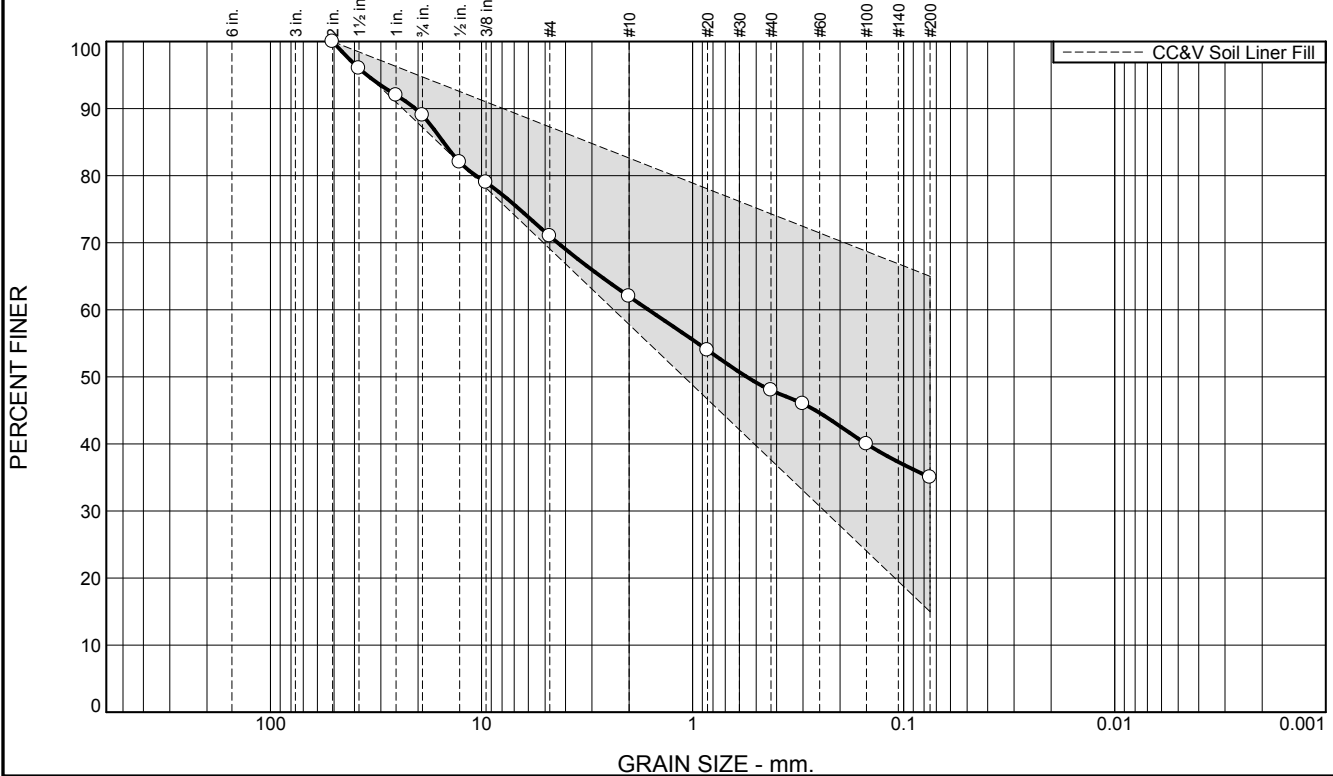
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SLF-17-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	11.0	18.0	9.0	14.0	13.0	35.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	96.0		
1.0"	92.0		
.75"	89.0		
.5"	82.0		
.375"	79.0		
#4	71.0		
#10	62.0		
#20	54.0		
#40	48.0		
#50	46.0		
#100	40.0		
#200	35.0	15.0 - 65.0	

* CC&V Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 17 LL= 35 PI= 18

Classification

USCS= SC AASHTO= A-2-6(2)

Remarks

Sample obtained from the PSSA at approximate location N 55,048.3 E 34,755.2 at an elevation of 9,357.8'

Source of Sample: PSSA-Soil Liner Fill
Sample Number: SLF-18-R

Date: 8/13/2014



Client: Cripple Creek & Victor Gold Mining Company

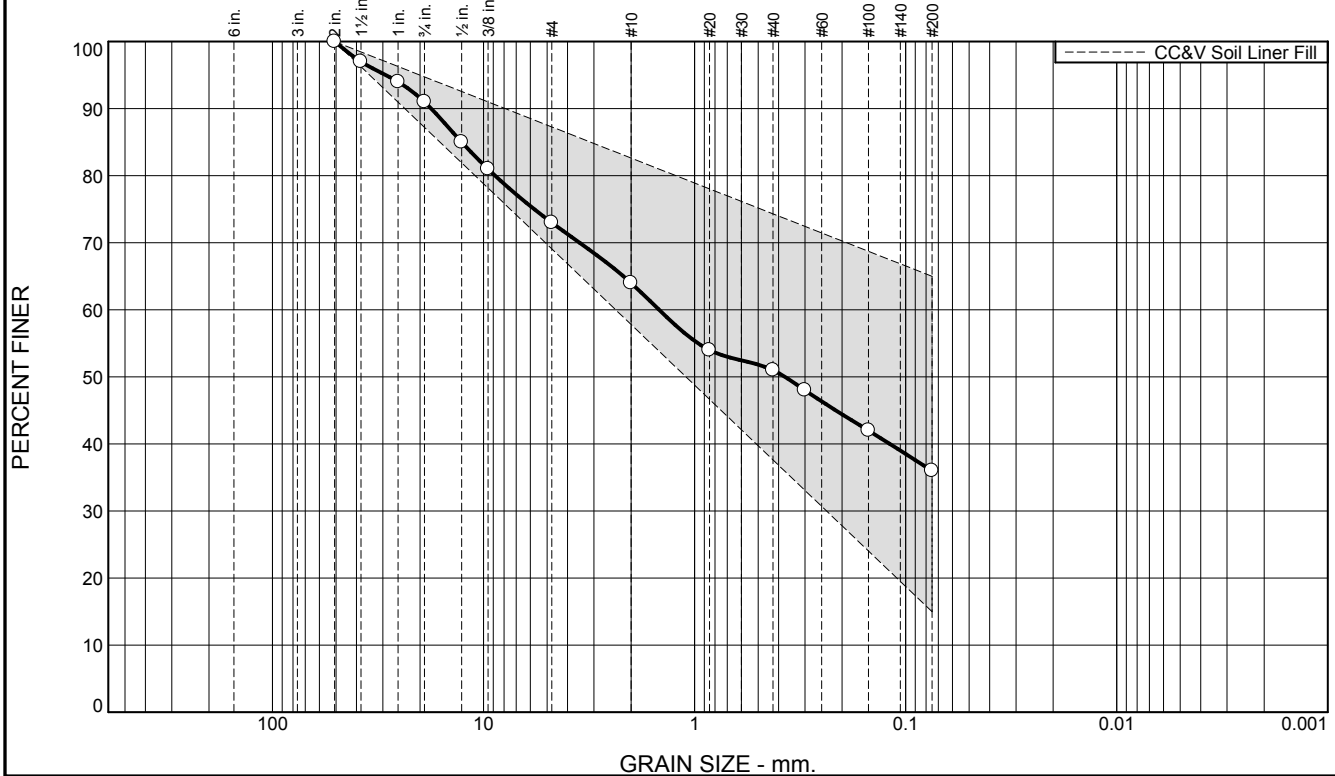
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure SLF-18-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	9.0	18.0	9.0	13.0	15.0	36.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
2.0"	100.0	100.0	
1.5"	97.0		
1.0"	94.0		
.75"	91.0		
.5"	85.0		
.375"	81.0		
#4	73.0		
#10	64.0		
#20	54.0		
#40	51.0		
#50	48.0		
#100	42.0		
#200	36.0	15.0 - 65.0	

* CC&V Soil Liner Fill

Material Description

Brown clayey sand with gravel

Atterberg Limits

PL= 17 LL= 31 PI= 14

Classification

USCS= SC AASHTO= A-6(1)

Remarks

Sample obtained from the PSSA at approximate location N 55,479.9 E 35,220.1 at an elevation of 9,395.6'

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

Date: 8/14/2014



Client: Cripple Creek & Victor Gold Mining Company

Project: VLF Squaw Gulch

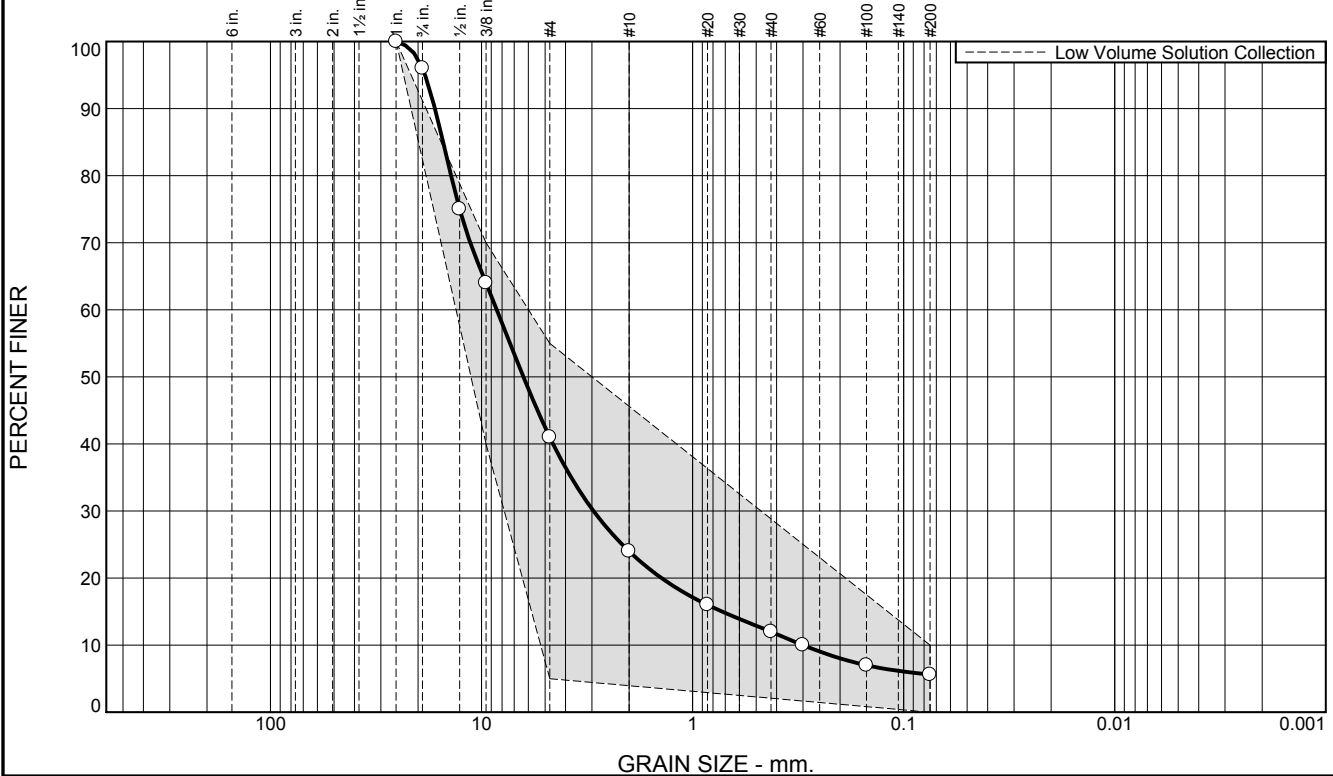
Project No: 74201125N0

Figure SLF-19-R

Tested By: Razi Molloy

Low Volume Solution Collection Fill

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.0	55.0	17.0	12.0	6.4	5.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	96.0		
.5"	75.0		
.375"	64.0	40.0 - 70.0	
#4	41.0	5.0 - 55.0	
#10	24.0		
#20	16.0		
#40	12.0		
#50	10.0		
#100	7.0		
#200	5.6	0.0 - 10.0	

Material Description

Light brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA at approximate location N 55,099.5 E 34,612.5 at an elevation of 9,347.7'

* Low Volume Solution Collection

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-1-R

Date: 7/7/2014



Client: Cripple Creek & Victor Gold Mining Company

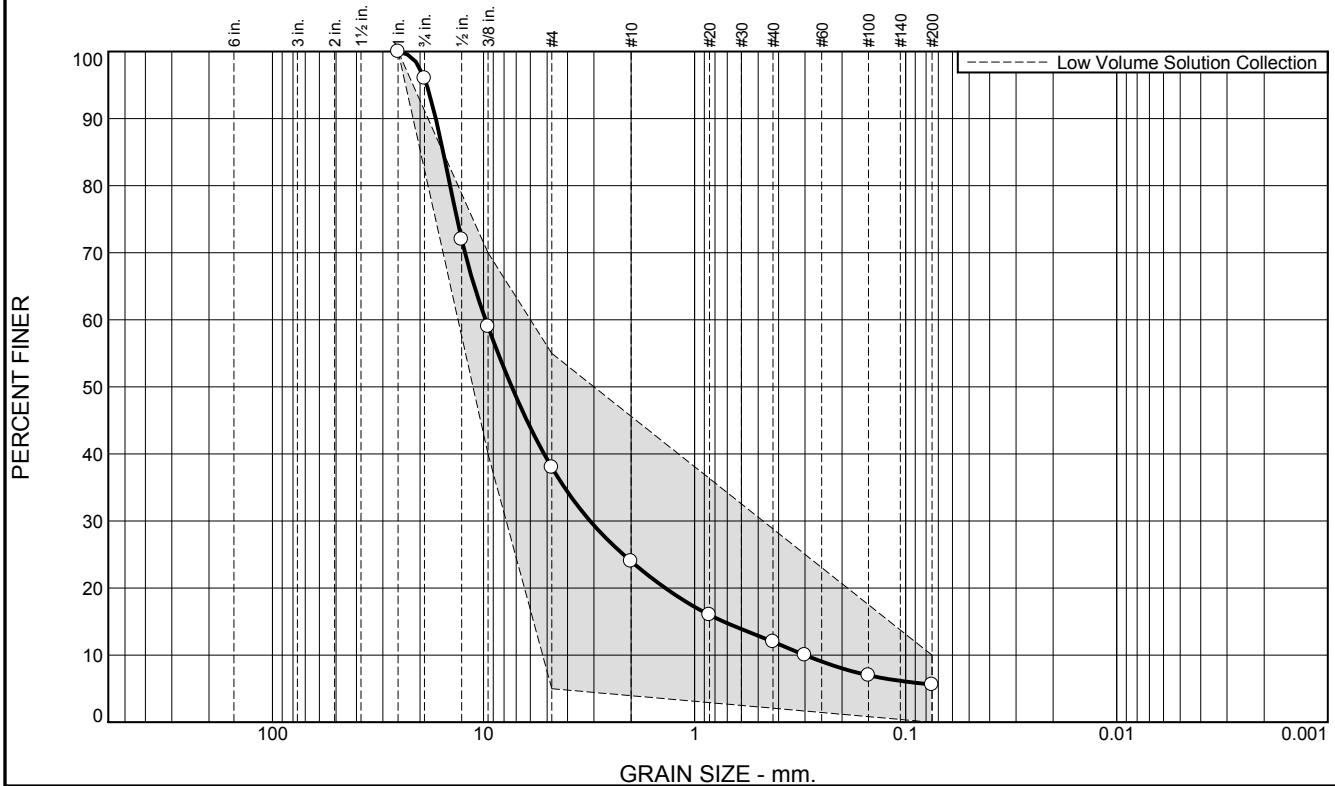
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-1-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.0	58.0	14.0	12.0	6.4	5.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	96.0		
.5"	72.0		
.375"	59.0	40.0 - 70.0	
#4	38.0	5.0 - 55.0	
#10	24.0		
#20	16.0		
#40	12.0		
#50	10.0		
#100	7.0		
#200	5.6	0.0 - 10.0	

Material Description

Grey poorly graded gravel with silt and sand

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= GP-GM

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA at approximate location N 55,717.5 E 34,540.9 at an elevation 9,346.2'

* Low Volume Solution Collection

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-2-R

Date: 7/7/2014



Client: Cripple Creek & Victor Gold Mining Company

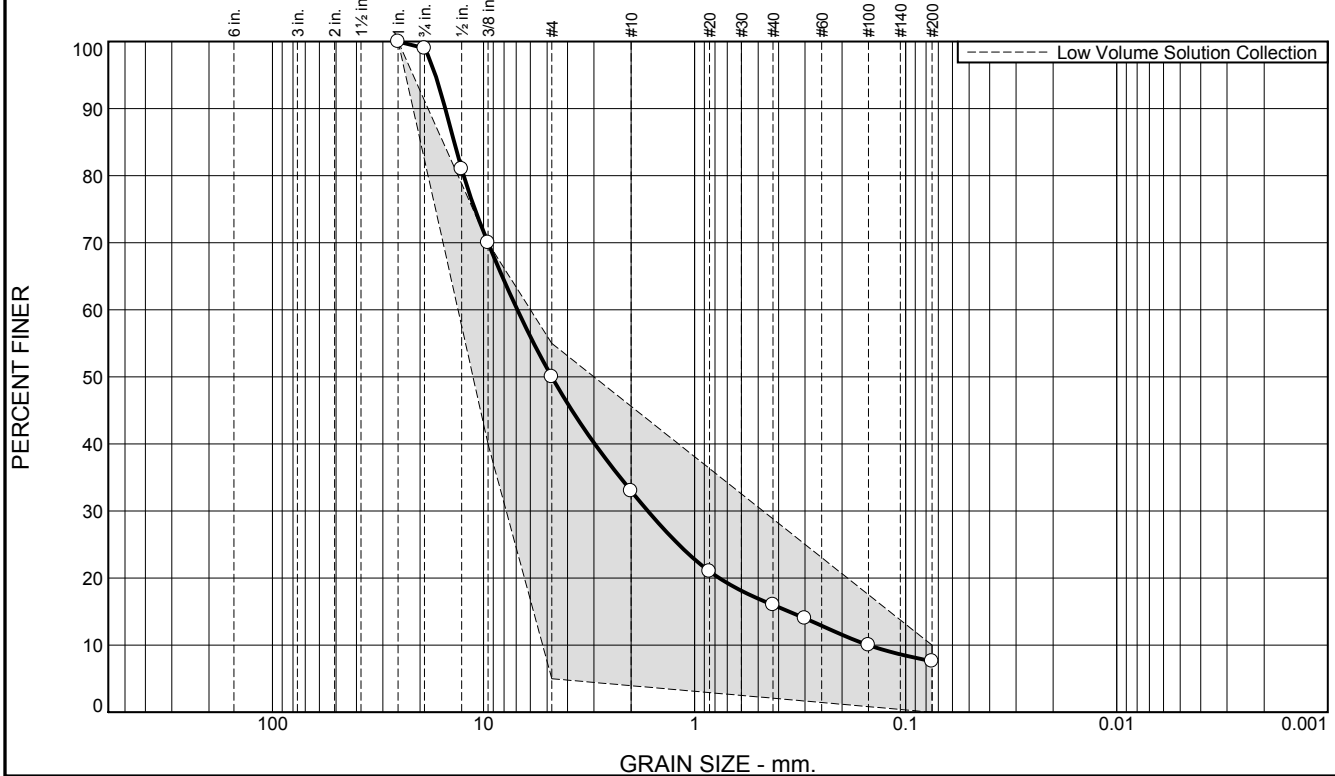
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-2-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	1.0	49.0	17.0	17.0	8.4	7.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	99.0		
.5"	81.0		
.375"	70.0	40.0 - 70.0	
#4	50.0	5.0 - 55.0	
#10	33.0		
#20	21.0		
#40	16.0		
#50	14.0		
#100	10.0		
#200	7.6	0.0 - 10.0	

Material Description

Light brown well-graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA at approximate location N 55,053.9 E 34,396.0 at an elevation of 9,375.7'

* Low Volume Solution Collection

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-3-R

Date: 7/10/2014



Client: Cripple Creek & Victor Gold Mining Company

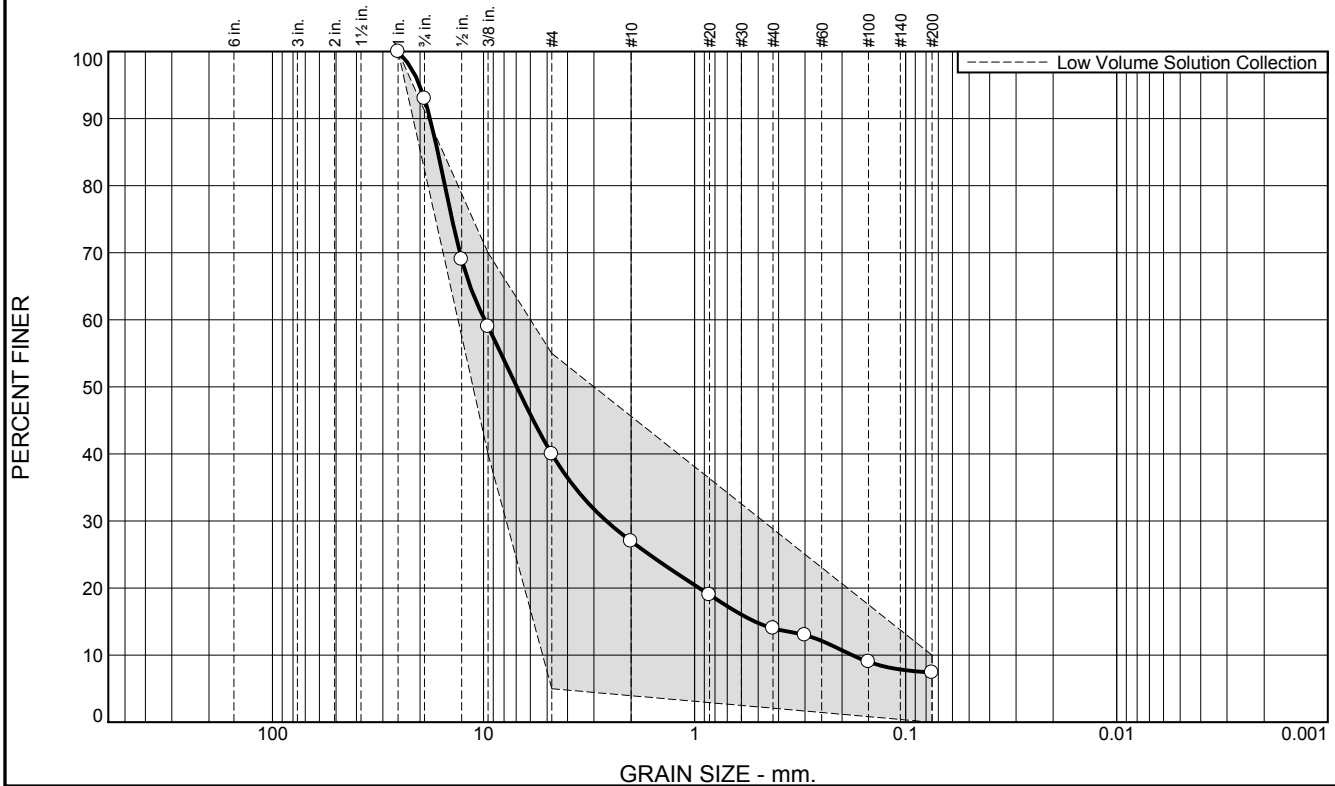
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-3-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	7.0	53.0	13.0	13.0	6.6	7.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	93.0		
.5"	69.0		
.375"	59.0	40.0 - 70.0	
#4	40.0	5.0 - 55.0	
#10	27.0		
#20	19.0		
#40	14.0		
#50	13.0		
#100	9.0		
#200	7.4	0.0 - 10.0	

* Low Volume Solution Collection

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 the PSSA at approximate location N 5,526.6 E 34,611.9 at an elevation of 9,347.2'

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-4-R

Date: 7/21/2014



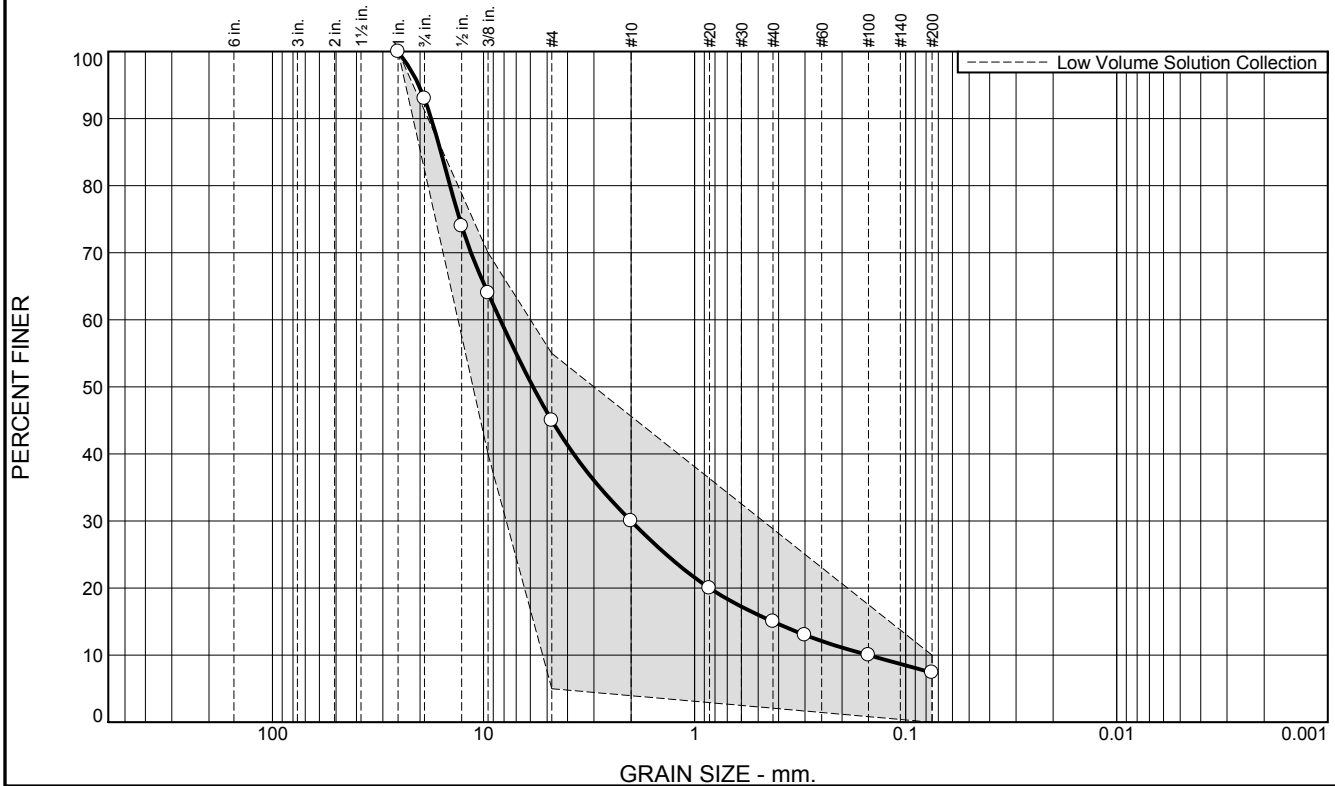
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-4-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	7.0	48.0	15.0	15.0	7.6	7.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	93.0		
.5"	74.0		
.375"	64.0	40.0 - 70.0	
#4	45.0	5.0 - 55.0	
#10	30.0		
#20	20.0		
#40	15.0		
#50	13.0		
#100	10.0		
#200	7.4	0.0 - 10.0	

* Low Volume Solution Collection

Material Description

Light brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA at approximate location N 54,869.9 E 33,955.3 at an elevation of 9,434.9'

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-5-R

Date: 7/21/2014



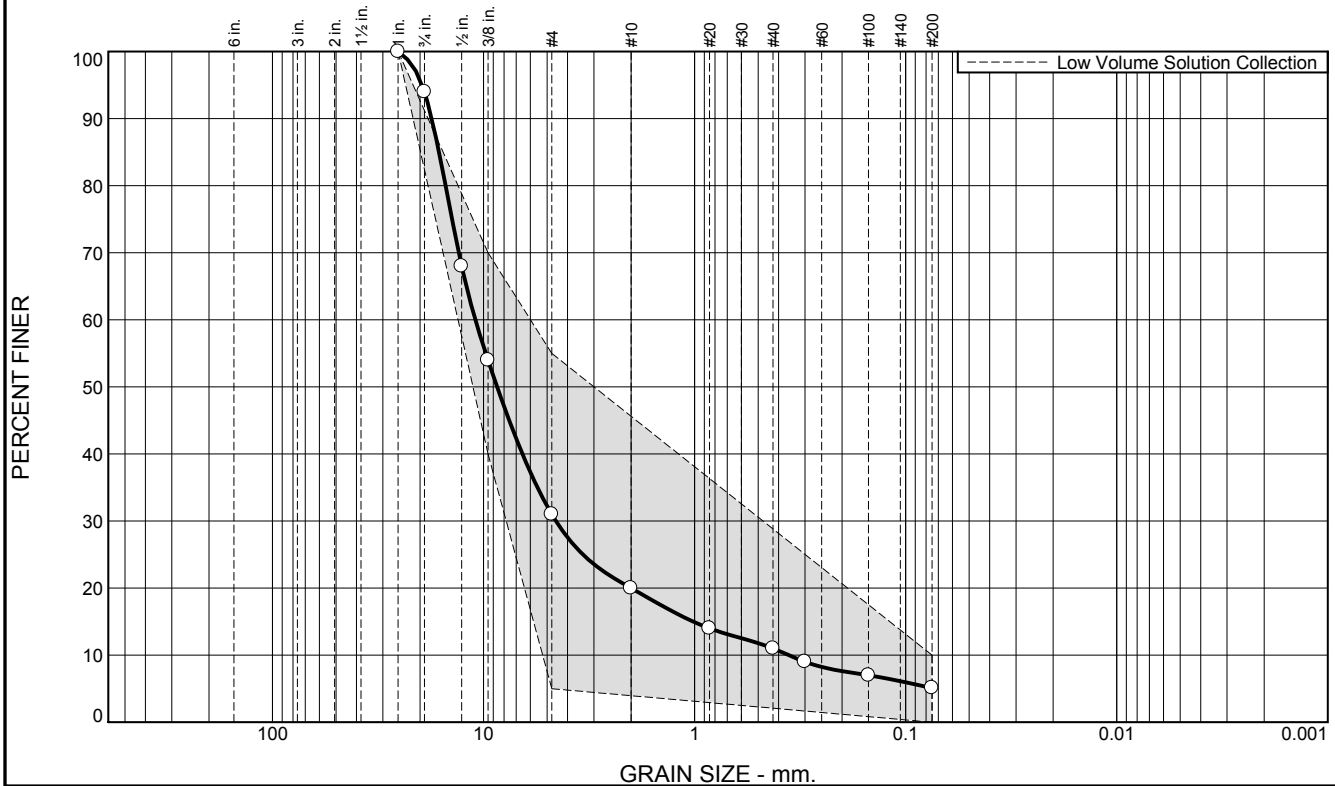
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-5-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	6.0	63.0	11.0	9.0	5.9	5.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	94.0		
.5"	68.0		
.375"	54.0	40.0 - 70.0	
#4	31.0	5.0 - 55.0	
#10	20.0		
#20	14.0		
#40	11.0		
#50	9.0		
#100	7.0		
#200	5.1	0.0 - 10.0	

* Low Volume Solution Collection

Material Description

Light brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA at approximate location N 55,387.2 E 34,733.2 at an elevation of 9,360.2'

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-6-R

Date: 7/25/2014



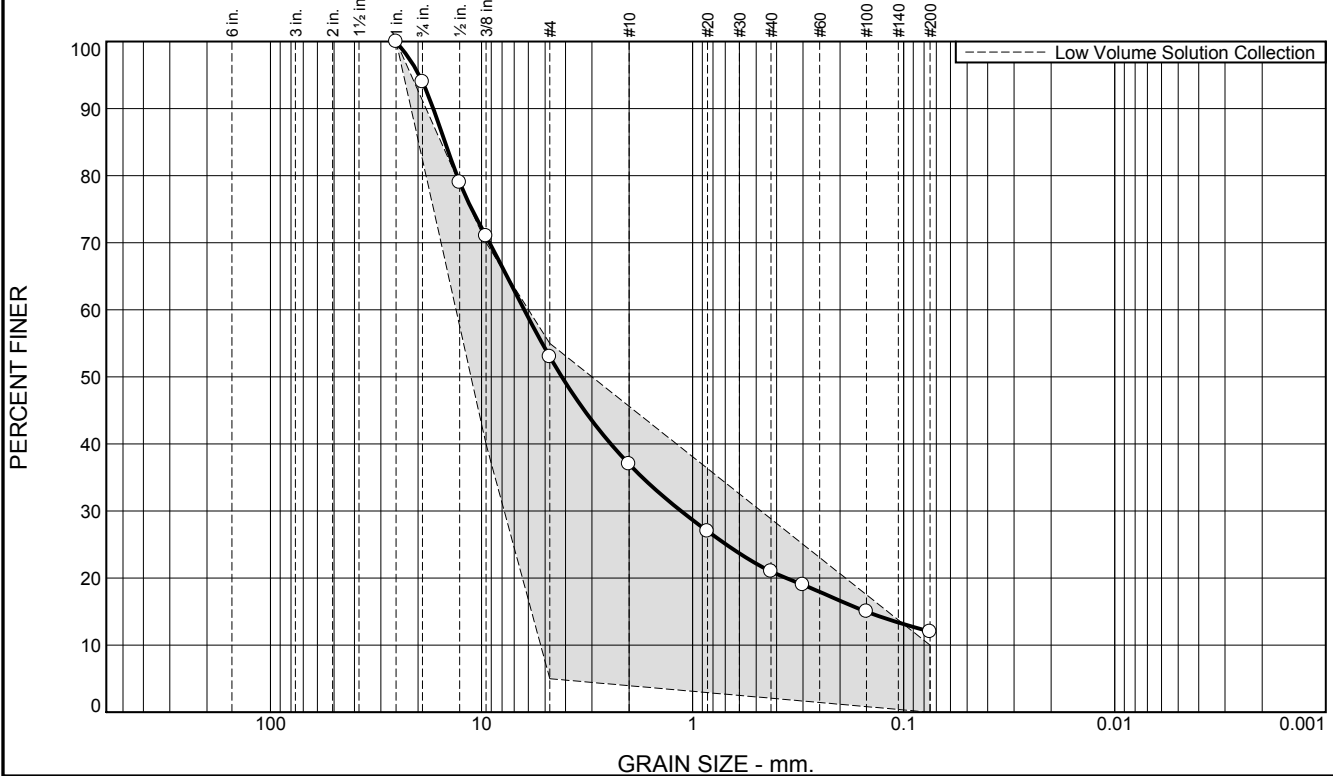
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-6-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	6.0	41.0	16.0	16.0	9.0	12.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	94.0		
.5"	79.0		
.375"	71.0	40.0 - 70.0	X
#4	53.0	5.0 - 55.0	
#10	37.0		
#20	27.0		
#40	21.0		
#50	19.0		
#100	15.0		
#200	12.0	0.0 - 10.0	X

* Low Volume Solution Collection

Material Description

Light brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA at approximate location N 54,982.1 E 34,184.9 at an elevation of 9,434.1'

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-7-R

Date: 7/26/2014



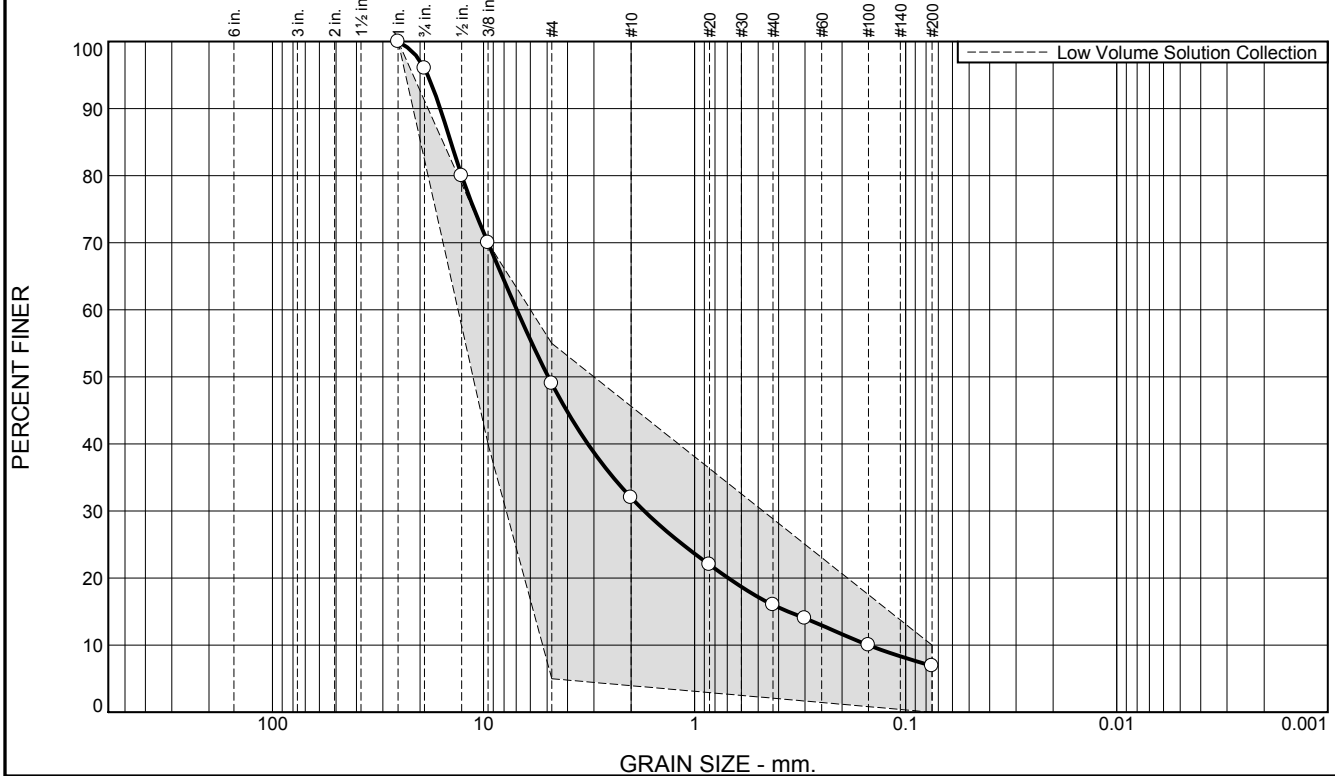
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-7-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.0	47.0	17.0	16.0	9.1	6.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	96.0		
.5"	80.0		
.375"	70.0	40.0 - 70.0	
#4	49.0	5.0 - 55.0	
#10	32.0		
#20	22.0		
#40	16.0		
#50	14.0		
#100	10.0		
#200	6.9	0.0 - 10.0	

Material Description

Light brown well-graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA at approximate location N 54,982.1 E 34,184.9 at an elevation of 9,434.1'. Material was reprocessed and resampled

* Low Volume Solution Collection

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-7A-R

Date: 7/27/2014



Client: Cripple Creek & Victor Gold Mining Company

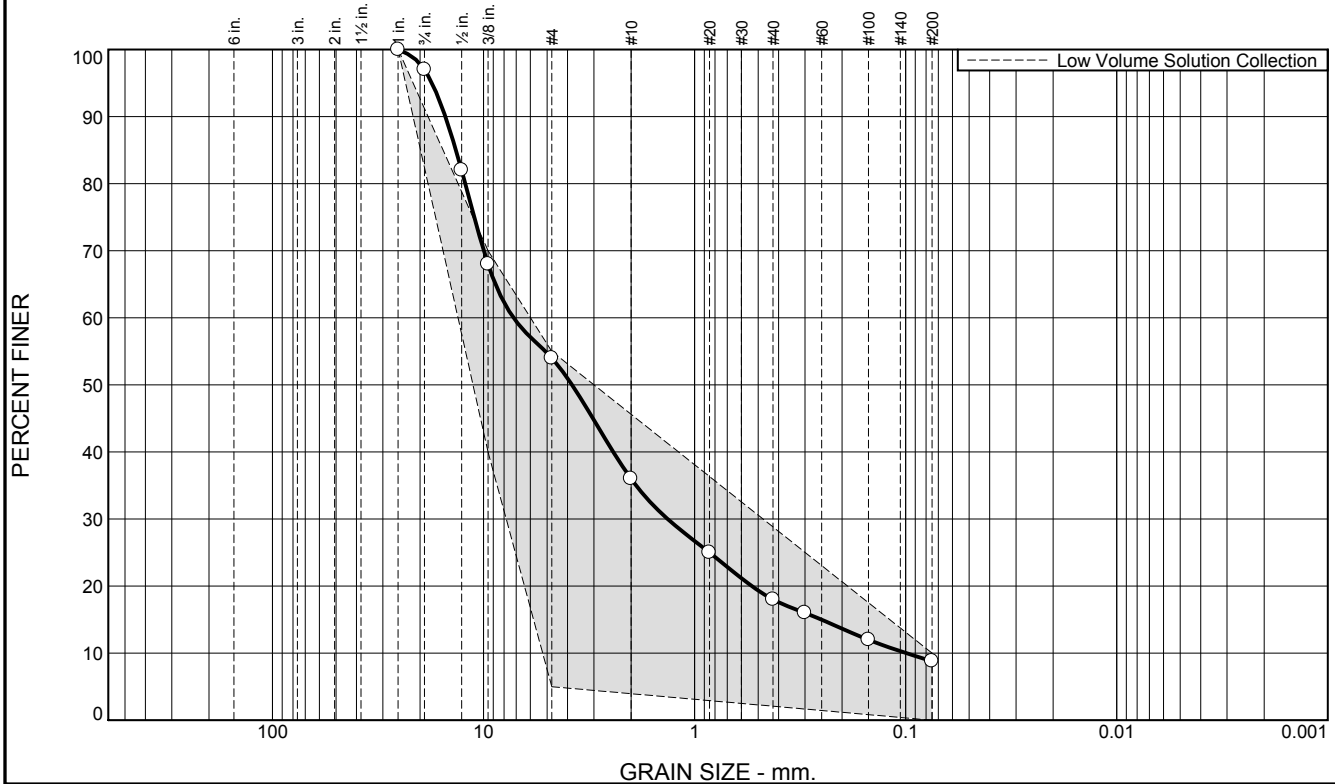
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-7A-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	3.0	43.0	18.0	18.0	9.2	8.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	97.0		
.5"	82.0		
.375"	68.0	40.0 - 70.0	
#4	54.0	5.0 - 55.0	
#10	36.0		
#20	25.0		
#40	18.0		
#50	16.0		
#100	12.0		
#200	8.8	0.0 - 10.0	

* Low Volume Solution Collection

Material Description

Light brown well-graded sand with silt and gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA at approximate location N 54,975.4 E 34,166.5 at an elevation of 9,433.2'. Material was reprocessed and resampled

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-7B-R

Date: 7/27/2014



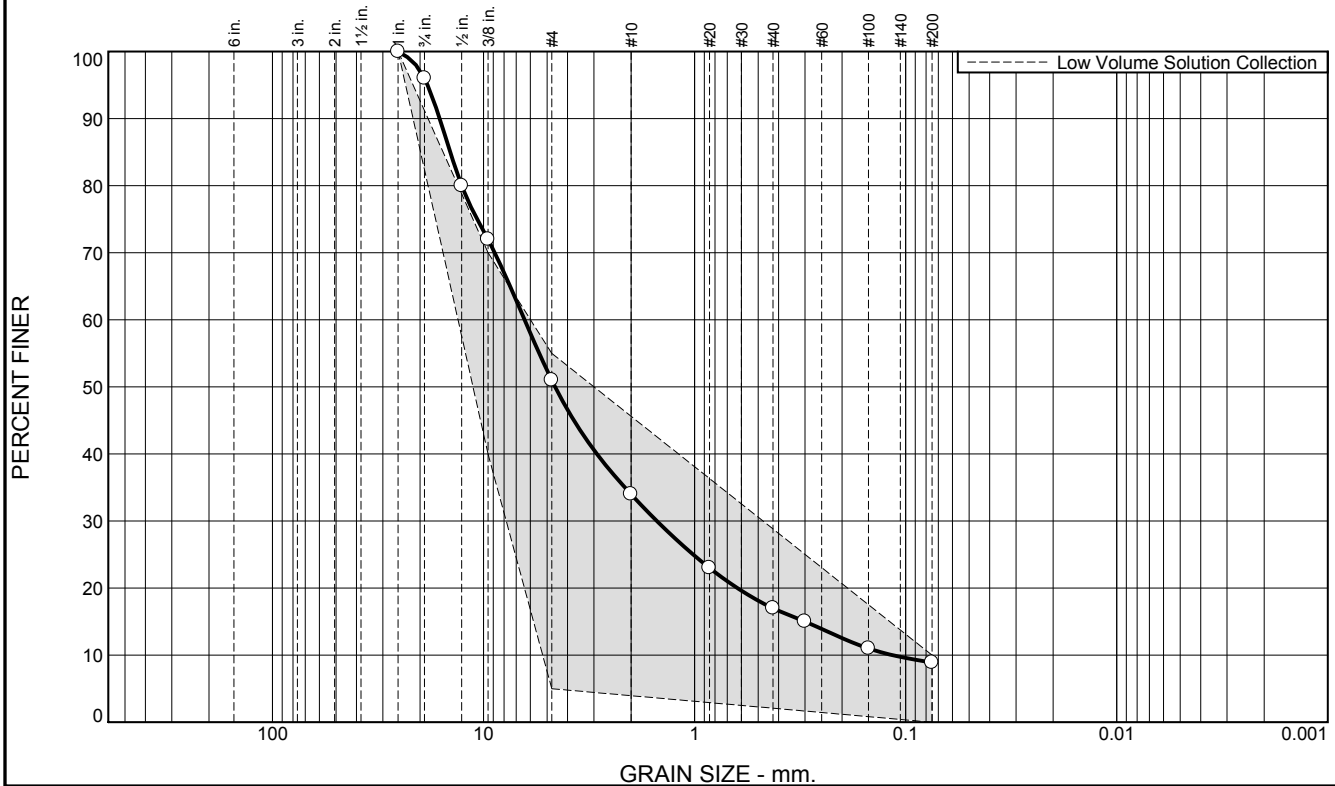
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-7B-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.0	45.0	17.0	17.0	8.1	8.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	96.0		
.5"	80.0		
.375"	72.0	40.0 - 70.0	X
#4	51.0	5.0 - 55.0	
#10	34.0		
#20	23.0		
#40	17.0		
#50	15.0		
#100	11.0		
#200	8.9	0.0 - 10.0	

Material Description

Light brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA at approximate location N 54,780.0 E 34,102.1 at an elevation of 9,433.2'

* Low Volume Solution Collection

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-8-R

Date: 7/28/2014



Client: Cripple Creek & Victor Gold Mining Company

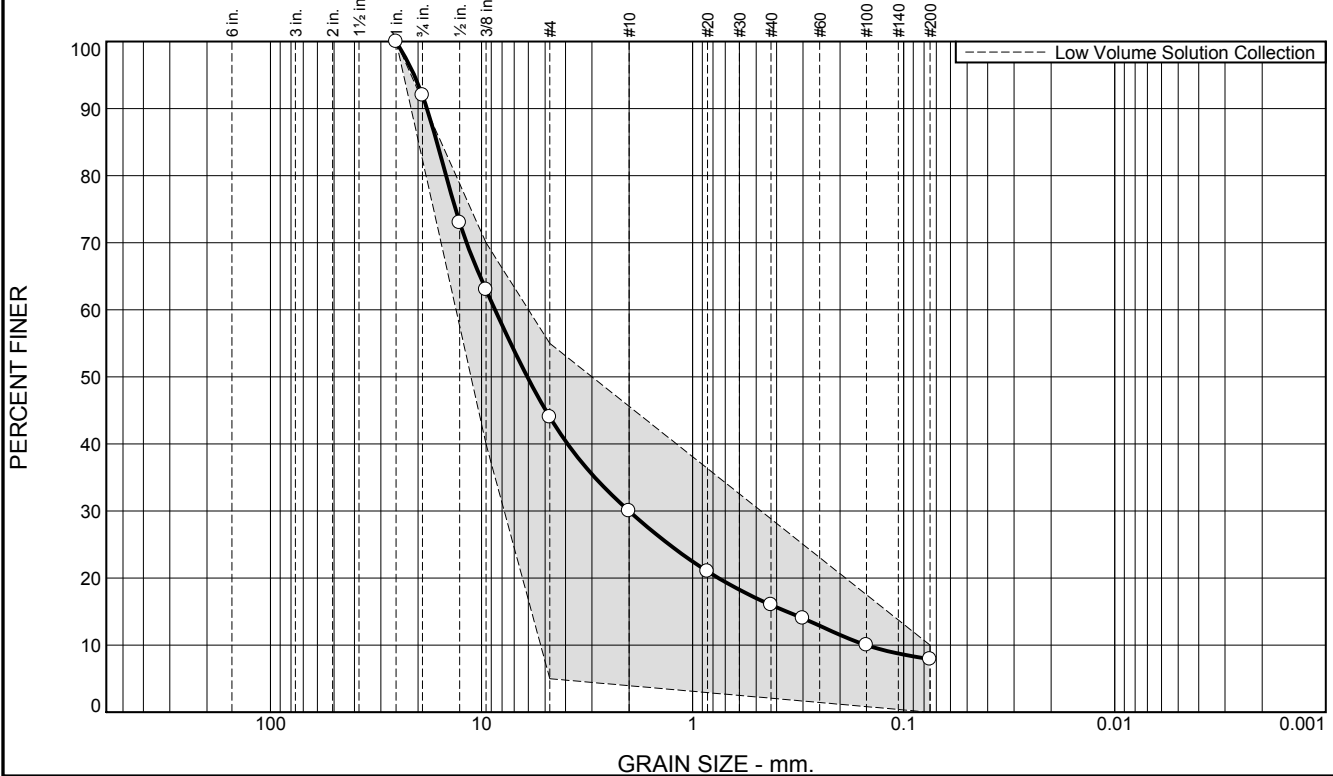
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-8-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	8.0	48.0	14.0	14.0	8.1	7.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	92.0		
.5"	73.0		
.375"	63.0	40.0 - 70.0	
#4	44.0	5.0 - 55.0	
#10	30.0		
#20	21.0		
#40	16.0		
#50	14.0		
#100	10.0		
#200	7.9	0.0 - 10.0	

* Low Volume Solution Collection

Material Description

Light brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA at approximate location N 54,779.3 E 34,119.8 at an elevation of 9,433.2'. Material was reprocessed and resampled

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-8A-R

Date: 7/30/2014



Client: Cripple Creek & Victor Gold Mining Company

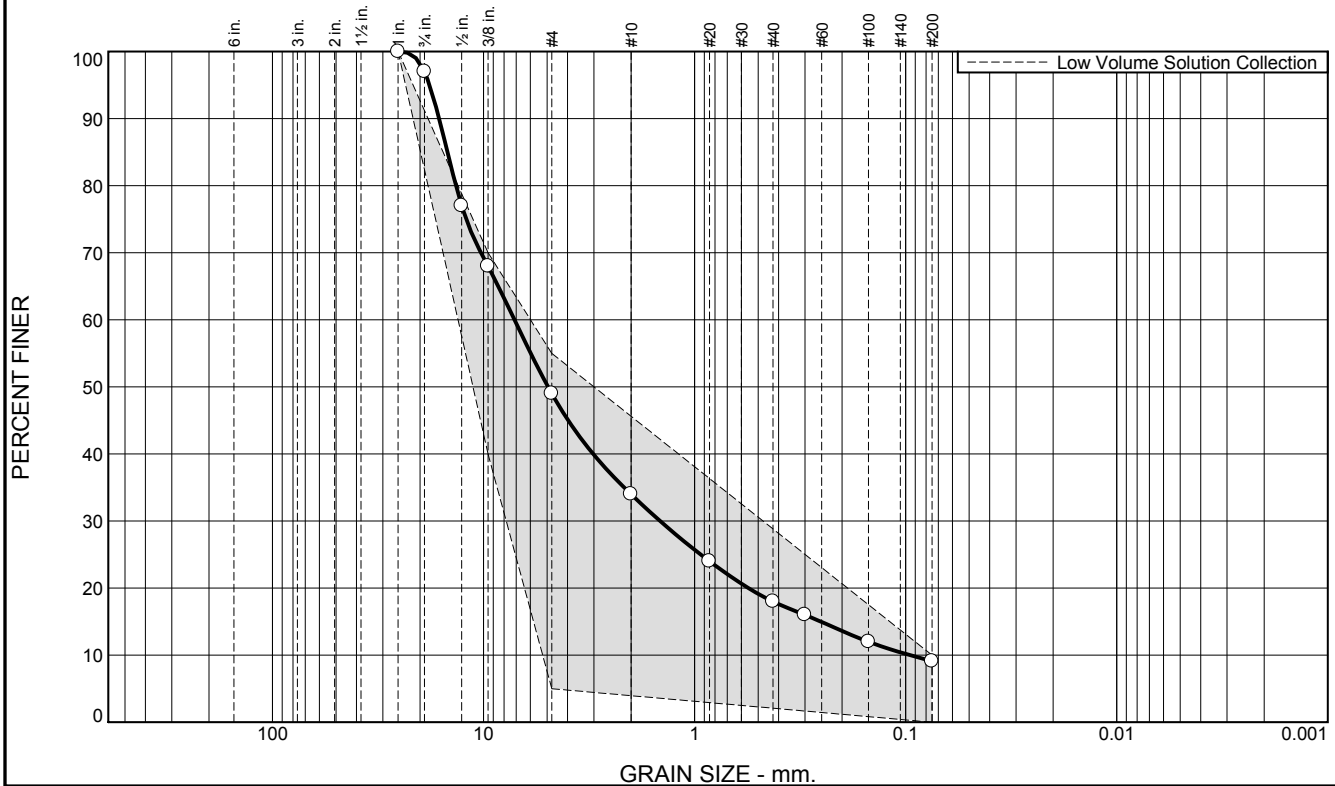
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-8A-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	3.0	48.0	15.0	16.0	8.9	9.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	97.0		
.5"	77.0		
.375"	68.0	40.0 - 70.0	
#4	49.0	5.0 - 55.0	
#10	34.0		
#20	24.0		
#40	18.0		
#50	16.0		
#100	12.0		
#200	9.1	0.0 - 10.0	

Material Description

Light brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA at an approximate location N 54,770.7 E 34,070.6 at an elevation of 9,433.5'. Material was reprocessed and resampled

* Low Volume Solution Collection

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-8B-R

Date: 7/30/2014



Client: Cripple Creek & Victor Gold Mining Company

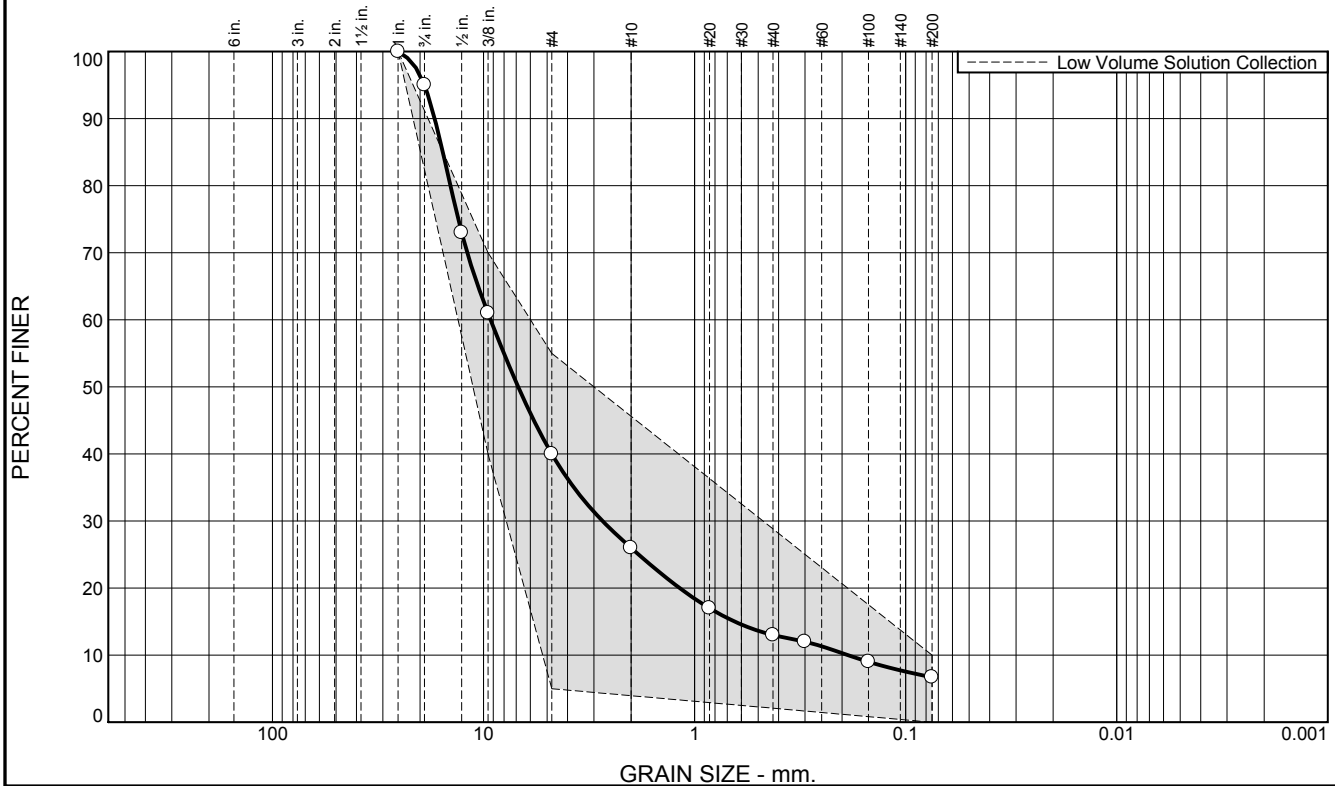
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-8B-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.0	55.0	14.0	13.0	6.3	6.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	95.0		
.5"	73.0		
.375"	61.0	40.0 - 70.0	
#4	40.0	5.0 - 55.0	
#10	26.0		
#20	17.0		
#40	13.0		
#50	12.0		
#100	9.0		
#200	6.7	0.0 - 10.0	

Material Description

Light brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA at approximate location N 54,646.8 E 34,235.6 at an elevation of 9,410.2'

* Low Volume Solution Collection

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-9-R

Date: 8/3/2014



Client: Cripple Creek & Victor Gold Mining Company

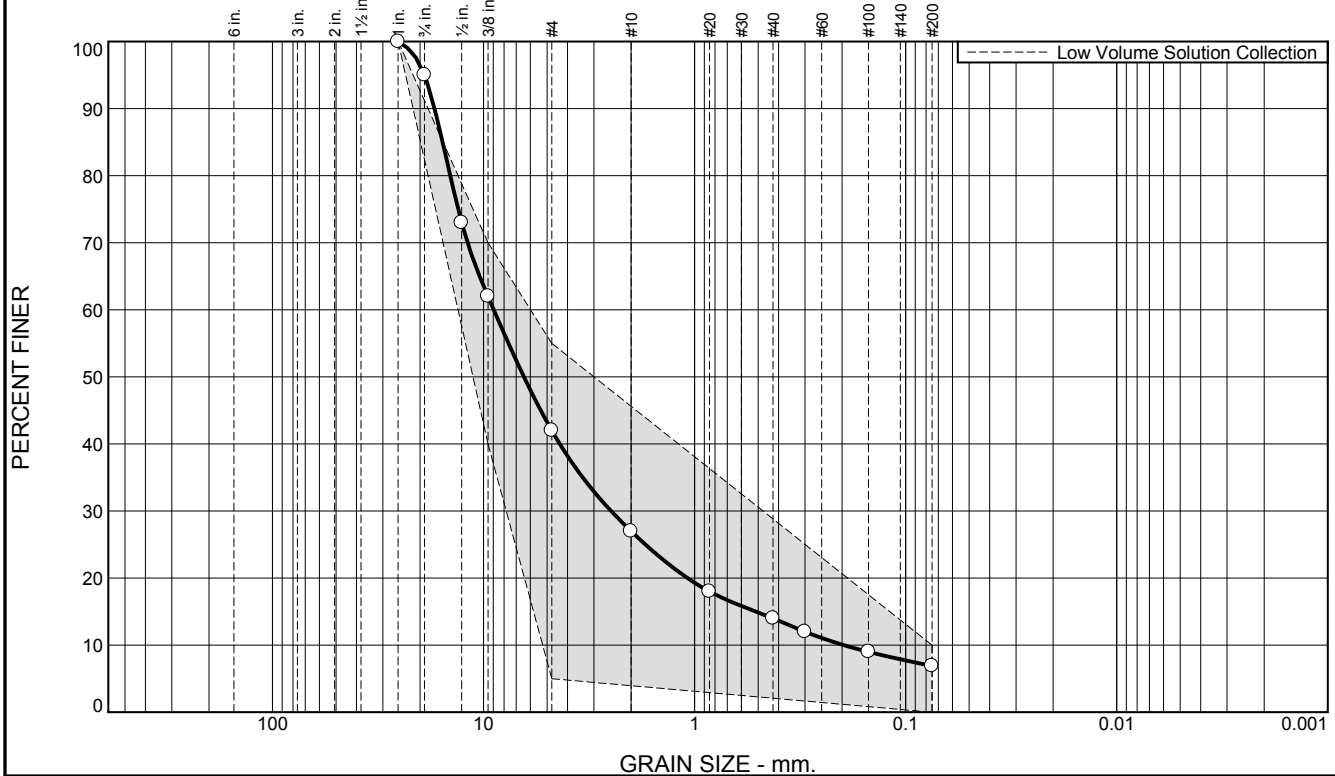
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-9-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.0	53.0	15.0	13.0	7.1	6.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	95.0		
.5"	73.0		
.375"	62.0	40.0 - 70.0	
#4	42.0	5.0 - 55.0	
#10	27.0		
#20	18.0		
#40	14.0		
#50	12.0		
#100	9.0		
#200	6.9	0.0 - 10.0	

* Low Volume Solution Collection

Material Description

Brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA at approximate location N 54,438.1 E 34,467.2 at an elevation of 9,426.4'

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-10-R

Date: 8/3/2014



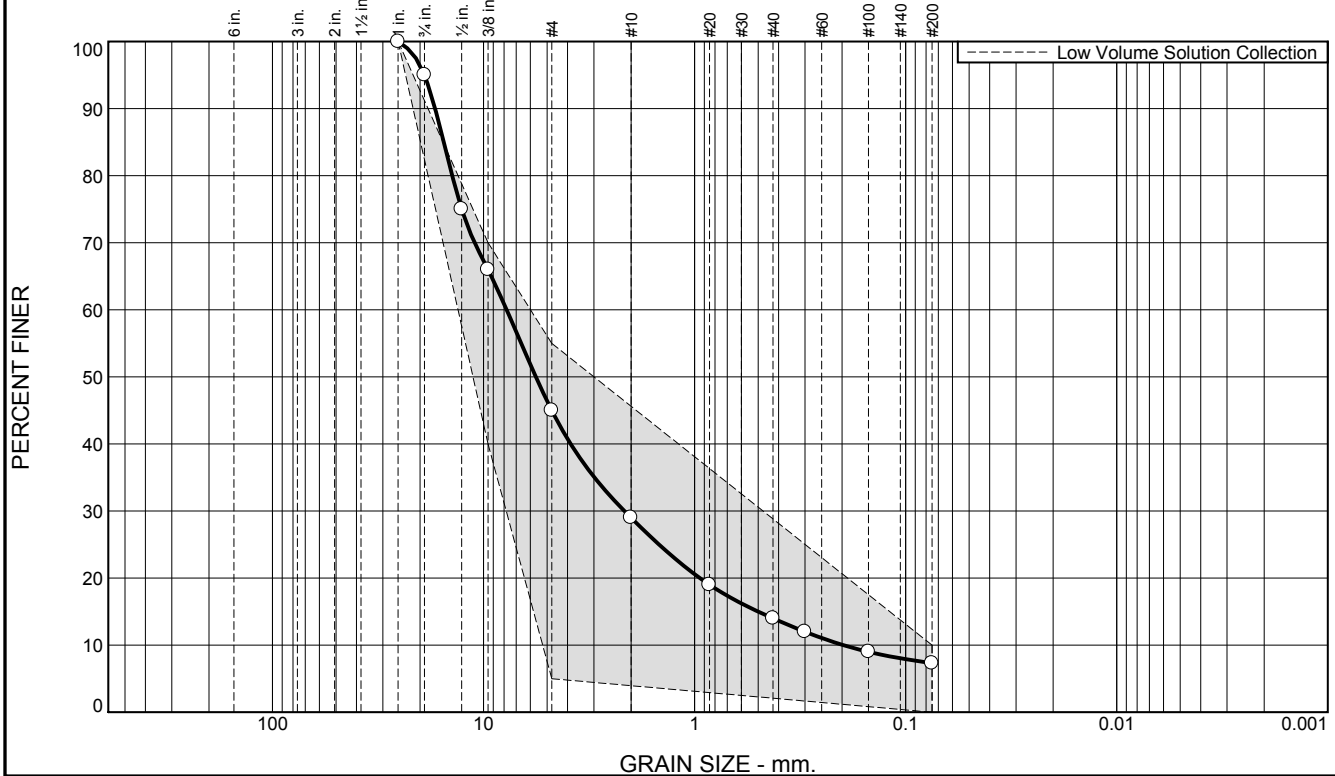
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-10-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.0	50.0	16.0	15.0	6.7	7.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	95.0		
.5"	75.0		
.375"	66.0	40.0 - 70.0	
#4	45.0	5.0 - 55.0	
#10	29.0		
#20	19.0		
#40	14.0		
#50	12.0		
#100	9.0		
#200	7.3	0.0 - 10.0	

* Low Volume Solution Collection

Material Description

Grey poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA at approximate location N 54,677.9 E 34,574.3 at an elevation of 9,376.0'

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-11-R

Date: 8/5/2014



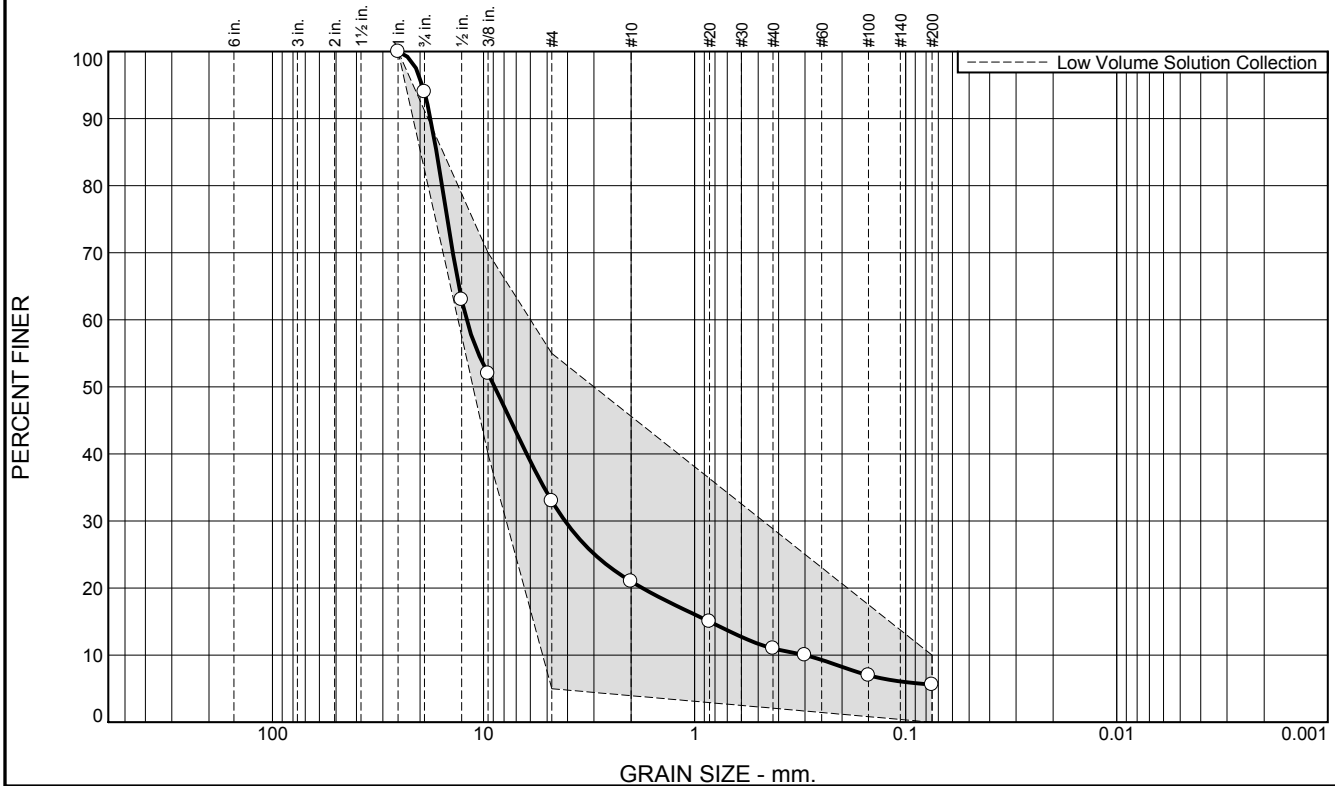
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-11-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	6.0	61.0	12.0	10.0	5.4	5.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	94.0		
.5"	63.0		
.375"	52.0	40.0 - 70.0	
#4	33.0	5.0 - 55.0	
#10	21.0		
#20	15.0		
#40	11.0		
#50	10.0		
#100	7.0		
#200	5.6	0.0 - 10.0	

* Low Volume Solution Collection

Material Description

Light brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA at approximate location N 54,654.9 E 34,787.1 at an elevation of 9,442.4'

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-12-R

Date: 8/5/2014



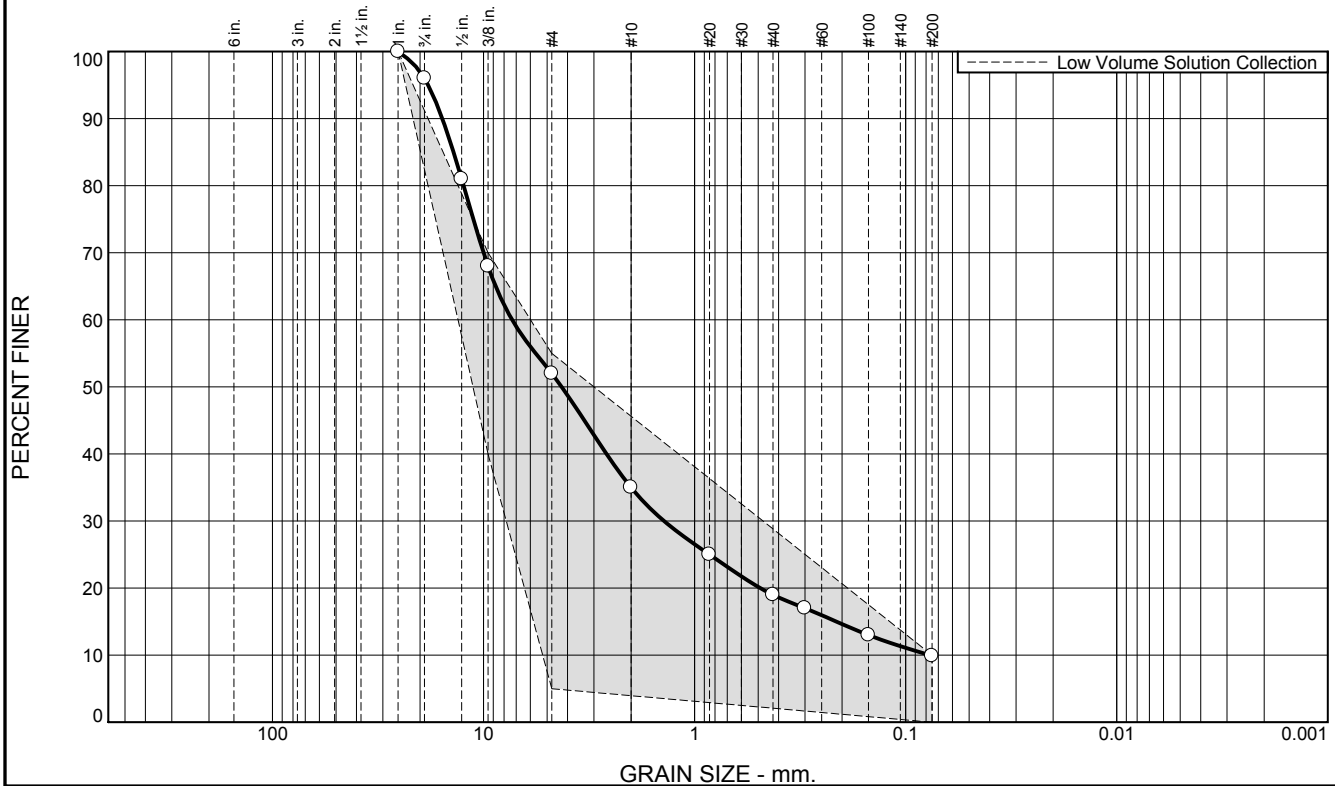
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-12-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.0	44.0	17.0	16.0	9.1	9.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	96.0		
.5"	81.0		
.375"	68.0	40.0 - 70.0	
#4	52.0	5.0 - 55.0	
#10	35.0		
#20	25.0		
#40	19.0		
#50	17.0		
#100	13.0		
#200	9.9	0.0 - 10.0	

Material Description

Light brown poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA at approximate location N 54,921.8 E 34,778.7 at an elevation of 9,370.5'

* Low Volume Solution Collection

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-13-R

Date: 8/13/2014



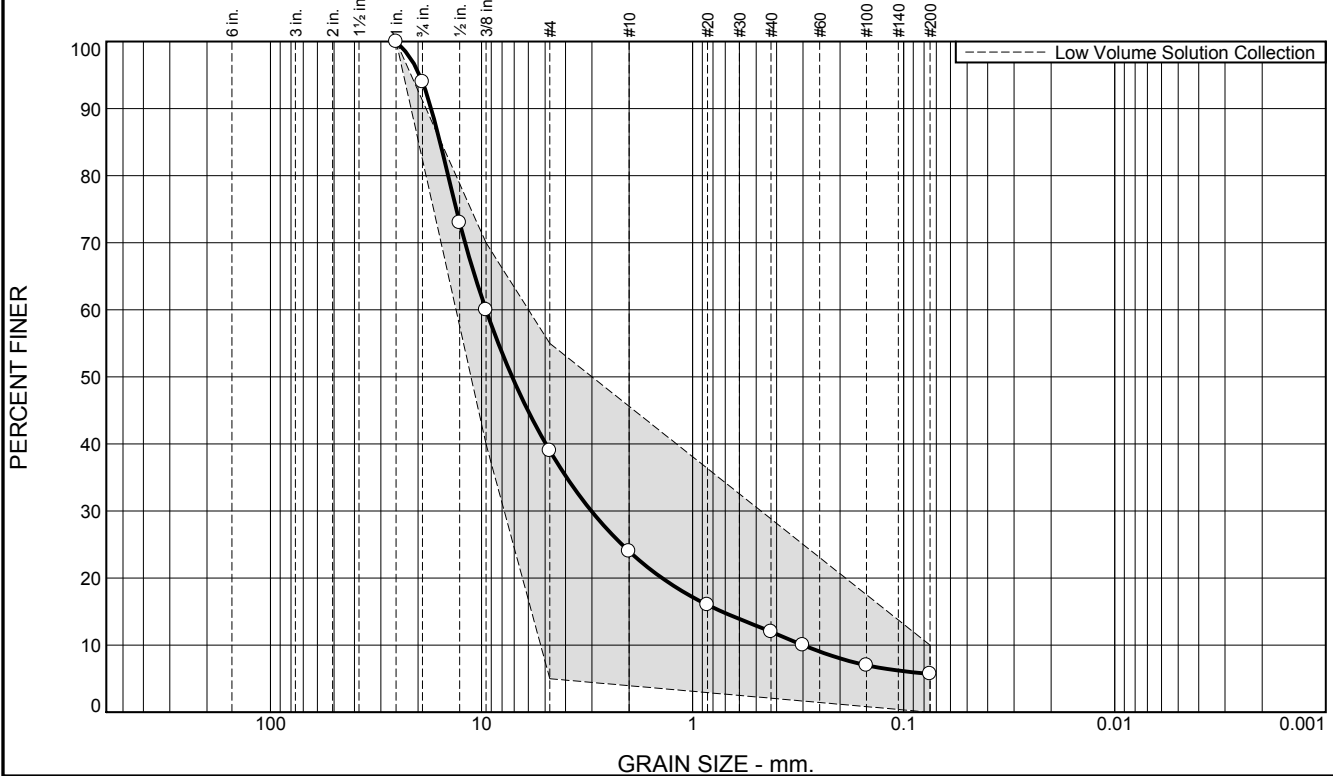
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-13-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	6.0	55.0	15.0	12.0	6.3	5.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	94.0		
.5"	73.0		
.375"	60.0	40.0 - 70.0	
#4	39.0	5.0 - 55.0	
#10	24.0		
#20	16.0		
#40	12.0		
#50	10.0		
#100	7.0		
#200	5.7	0.0 - 10.0	

* Low Volume Solution Collection

Material Description

Grey poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA vertical riser pipe at approximate location N 54,724.2 E 34,464.4 at an elevation of 9343.5'

Reference drawing A350

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-14-R

Date: 8/20/2014



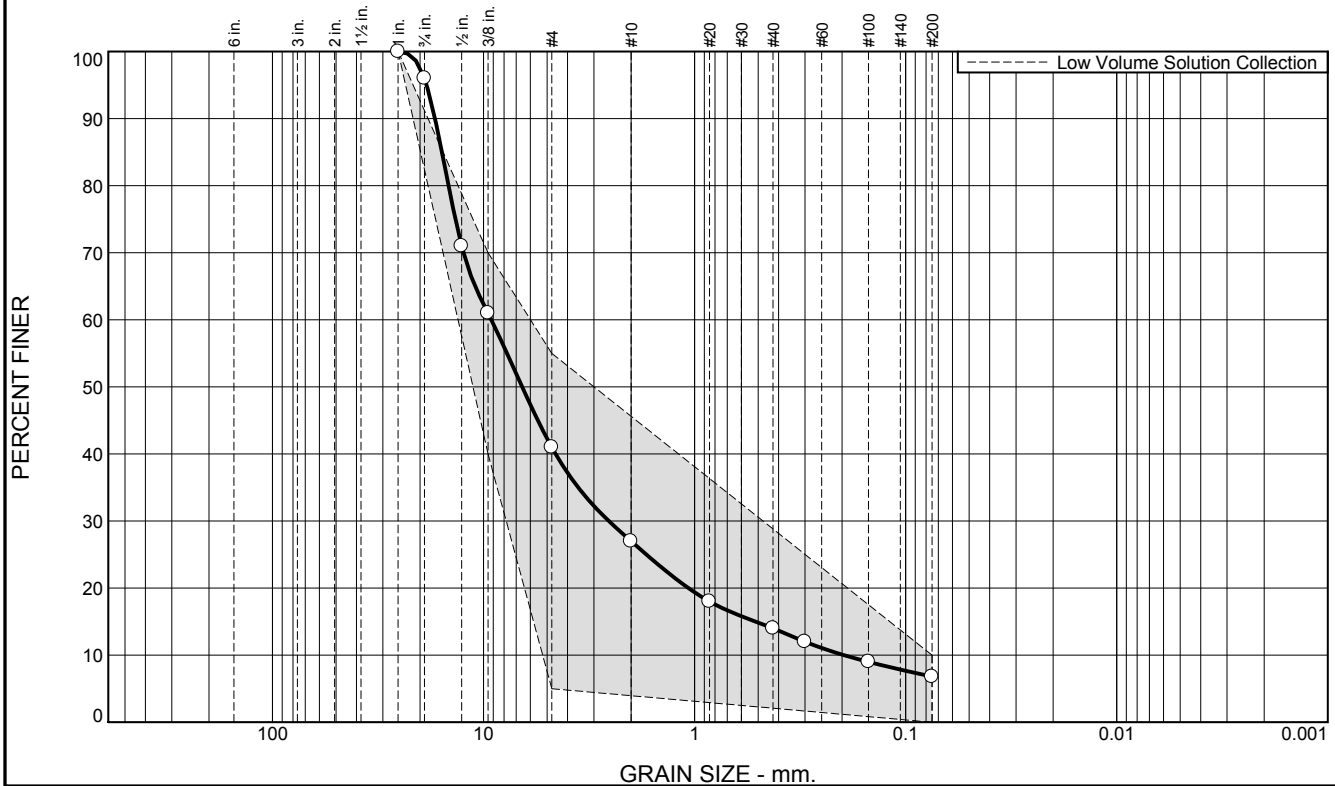
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-14-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.0	55.0	14.0	13.0	7.2	6.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	96.0		
.5"	71.0		
.375"	61.0	40.0 - 70.0	
#4	41.0	5.0 - 55.0	
#10	27.0		
#20	18.0		
#40	14.0		
#50	12.0		
#100	9.0		
#200	6.8	0.0 - 10.0	

* Low Volume Solution Collection

Material Description

Grey poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA approximate location N 55,315.3 E 35,275.0 at and elevation of 9,425.1'

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-15-R

Date: 9/3/2014



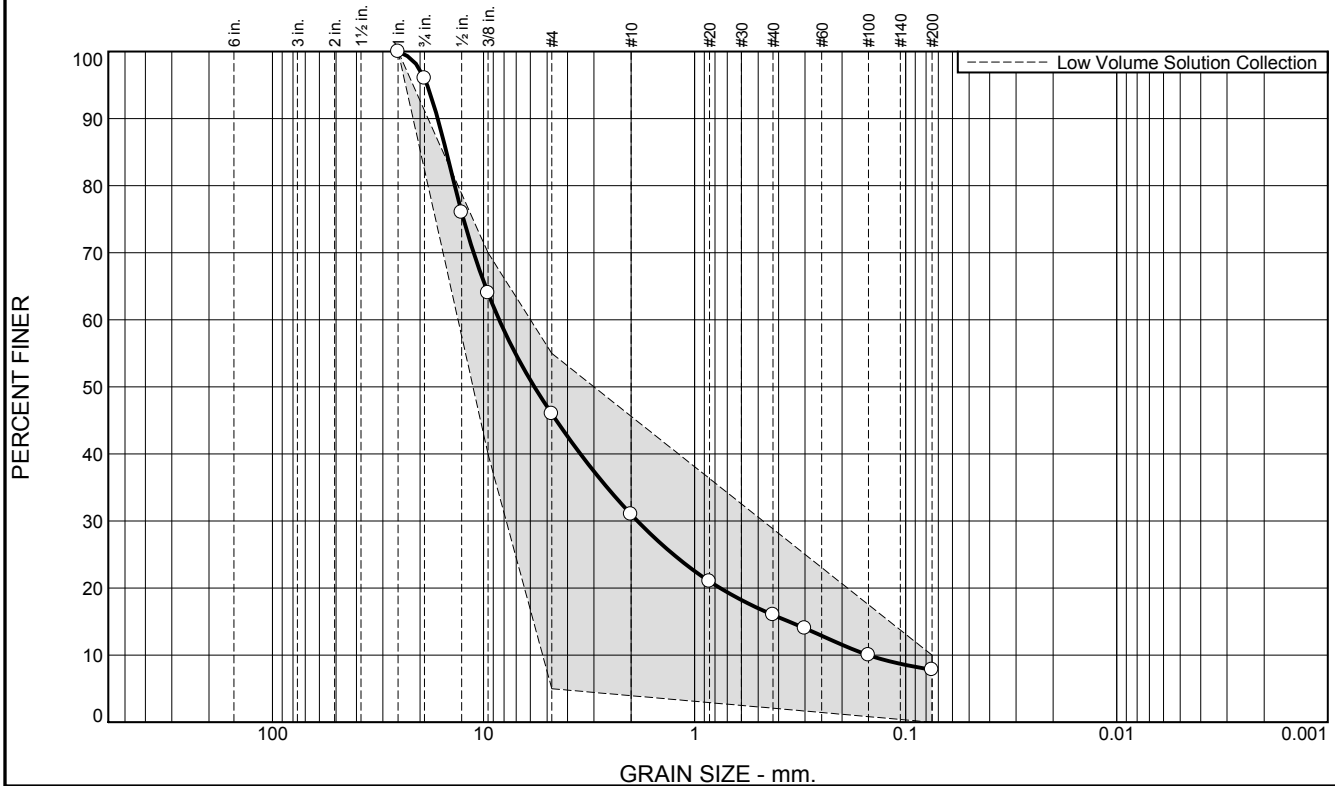
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-15-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.0	50.0	15.0	15.0	8.2	7.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	96.0		
.5"	76.0		
.375"	64.0	40.0 - 70.0	
#4	46.0	5.0 - 55.0	
#10	31.0		
#20	21.0		
#40	16.0		
#50	14.0		
#100	10.0		
#200	7.8	0.0 - 10.0	

* Low Volume Solution Collection

Material Description

Grey well-graded gravel with silt and sand

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= GW-GM

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA approximate location N 55,486.4 E 34,849.5 at an elevation of 9,362.4'

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-16-R

Date: 9/2/2014



Client: Cripple Creek & Victor Gold Mining Company

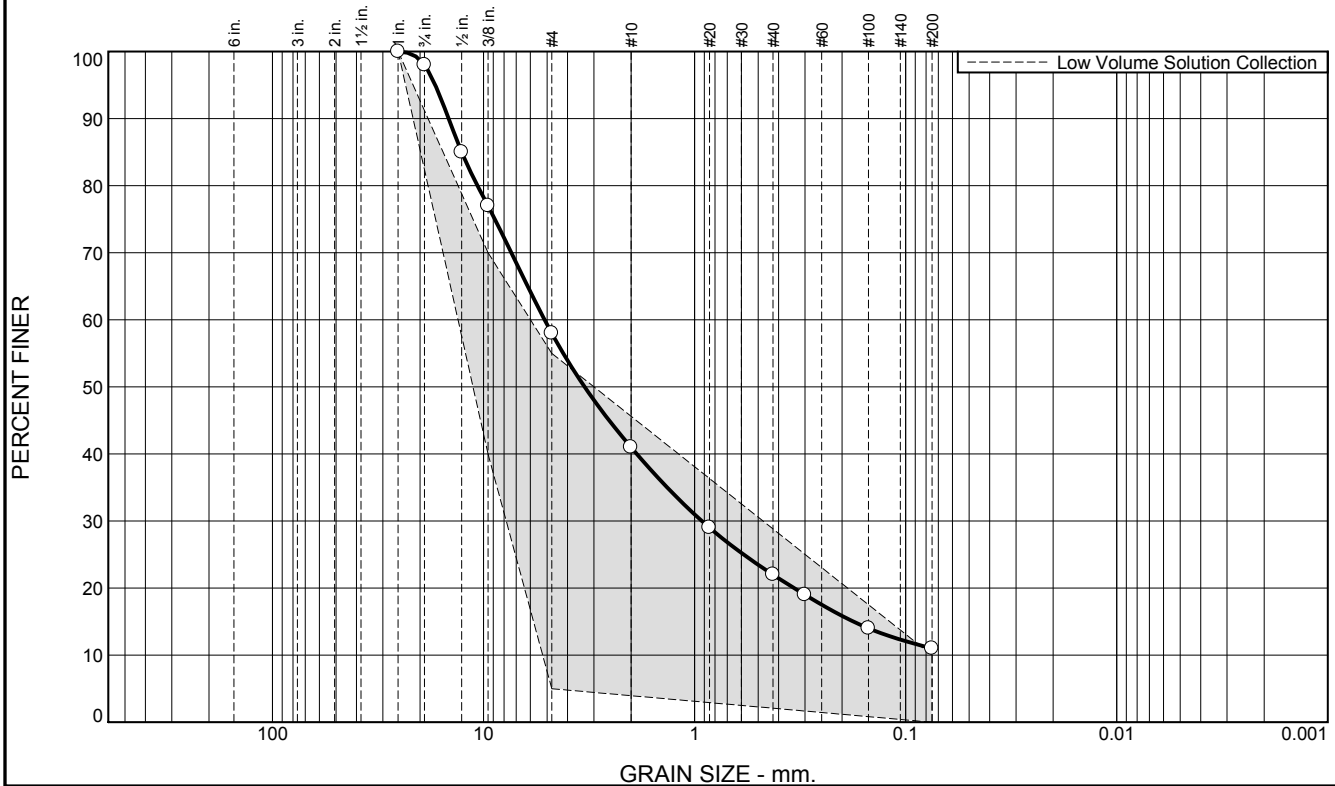
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-16-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	2.0	40.0	17.0	19.0	11.0	11.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	98.0		
.5"	85.0		
.375"	77.0	40.0 - 70.0	X
#4	58.0	5.0 - 55.0	X
#10	41.0		
#20	29.0		
#40	22.0		
#50	19.0		
#100	14.0		
#200	11.0	0.0 - 10.0	X

* Low Volume Solution Collection

Material Description

Grey poorly graded sand with silt and gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SP-SM

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA approximate locaion N 54,990.7 E 35,039.0 at an elevation of 9,431.6'

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-17-R

Date: 9/3/2014



Client: Cripple Creek & Victor Gold Mining Company

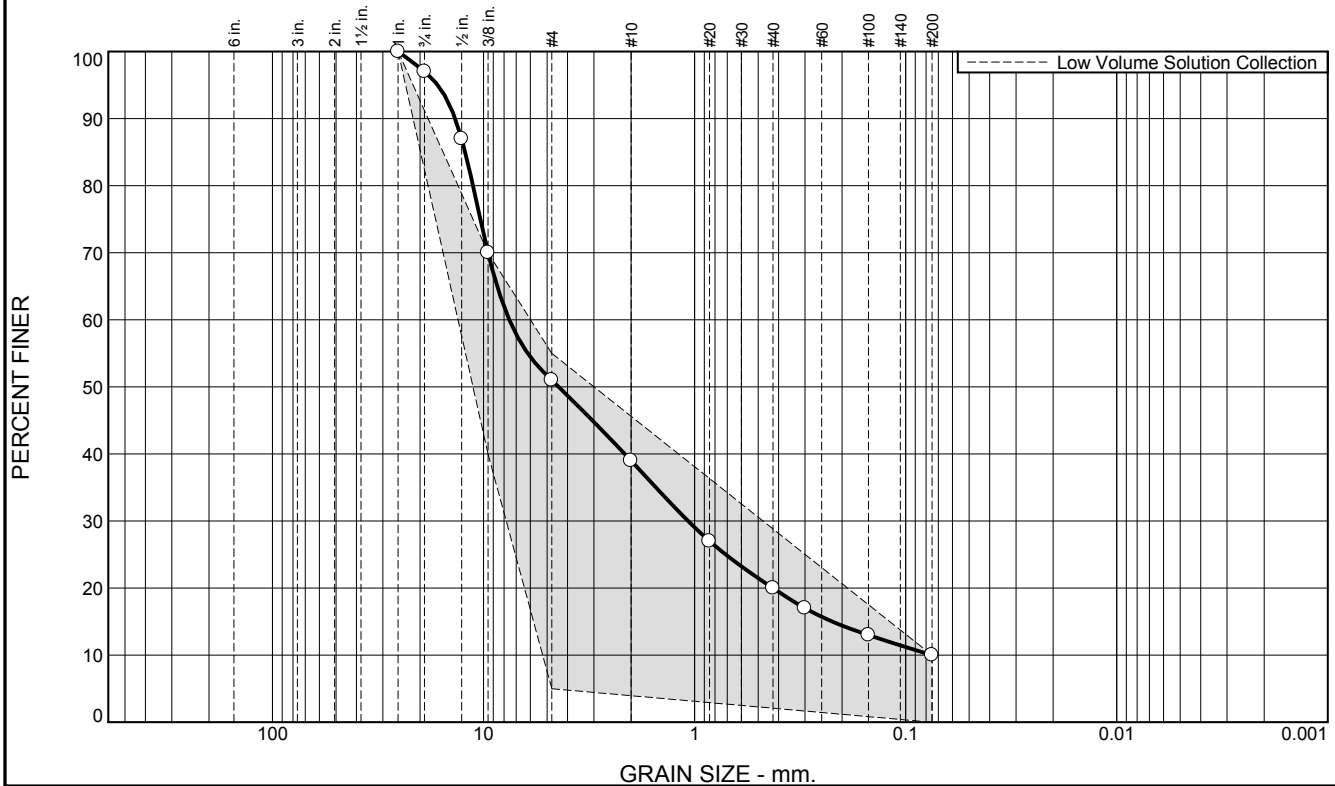
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-17-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	3.0	46.0	12.0	19.0	10.0	10.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	97.0		
.5"	87.0		
.375"	70.0	40.0 - 70.0	
#4	51.0	5.0 - 55.0	
#10	39.0		
#20	27.0		
#40	20.0		
#50	17.0		
#100	13.0		
#200	10.0	0.0 - 10.0	

Material Description

Grey well-graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA approximate location N 54,978 E 35,039.6 at an elevation of 9,435.5'. Material was reprocessed and resampled

* Low Volume Solution Collection

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-17A-R

Date: 9/15/2014



Client: Cripple Creek & Victor Gold Mining Company

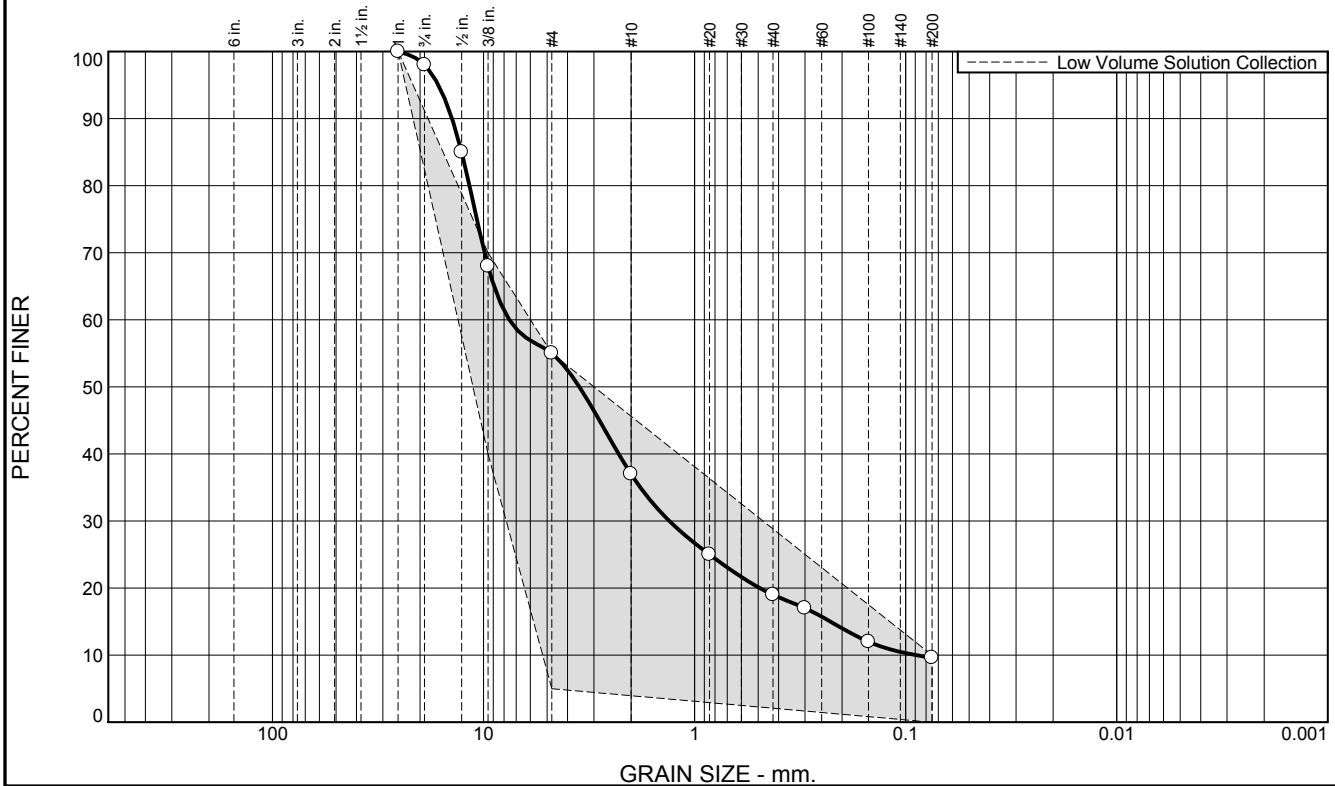
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-17A-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	2.0	43.0	18.0	18.0	9.4	9.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	98.0		
.5"	85.0		
.375"	68.0	40.0 - 70.0	
#4	55.0	5.0 - 55.0	
#10	37.0		
#20	25.0		
#40	19.0		
#50	17.0		
#100	12.0		
#200	9.6	0.0 - 10.0	

* Low Volume Solution Collection

Material Description

Grey well-graded sand with silt and gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SW-SM

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA approximate location N 54,999.1 E 35,040.1 at an elevation of 9,430.3'. Material was reprocessed and resampled

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-17B-R

Date: 9/15/2014



Client: Cripple Creek & Victor Gold Mining Company

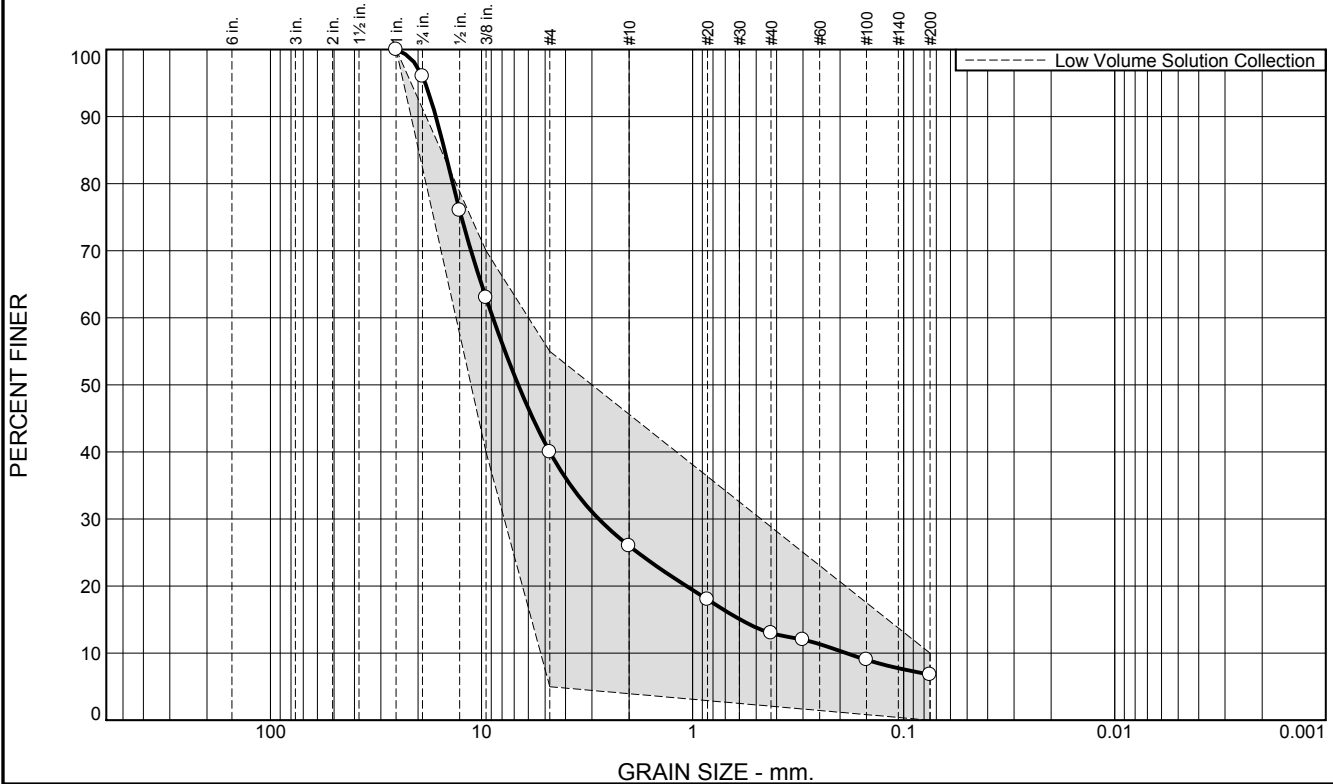
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-17B-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.0	56.0	14.0	13.0	6.2	6.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	96.0		
.5"	76.0		
.375"	63.0	40.0 - 70.0	
#4	40.0	5.0 - 55.0	
#10	26.0		
#20	18.0		
#40	13.0		
#50	12.0		
#100	9.0		
#200	6.8	0.0 - 10.0	

Material Description

Grey poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA approximate locaion N 55,651.9 E 35,092.3 at an elevation of 9,348.8'

* Low Volume Solution Collection

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-18-R

Date: 9/3/2014



Client: Cripple Creek & Victor Gold Mining Company

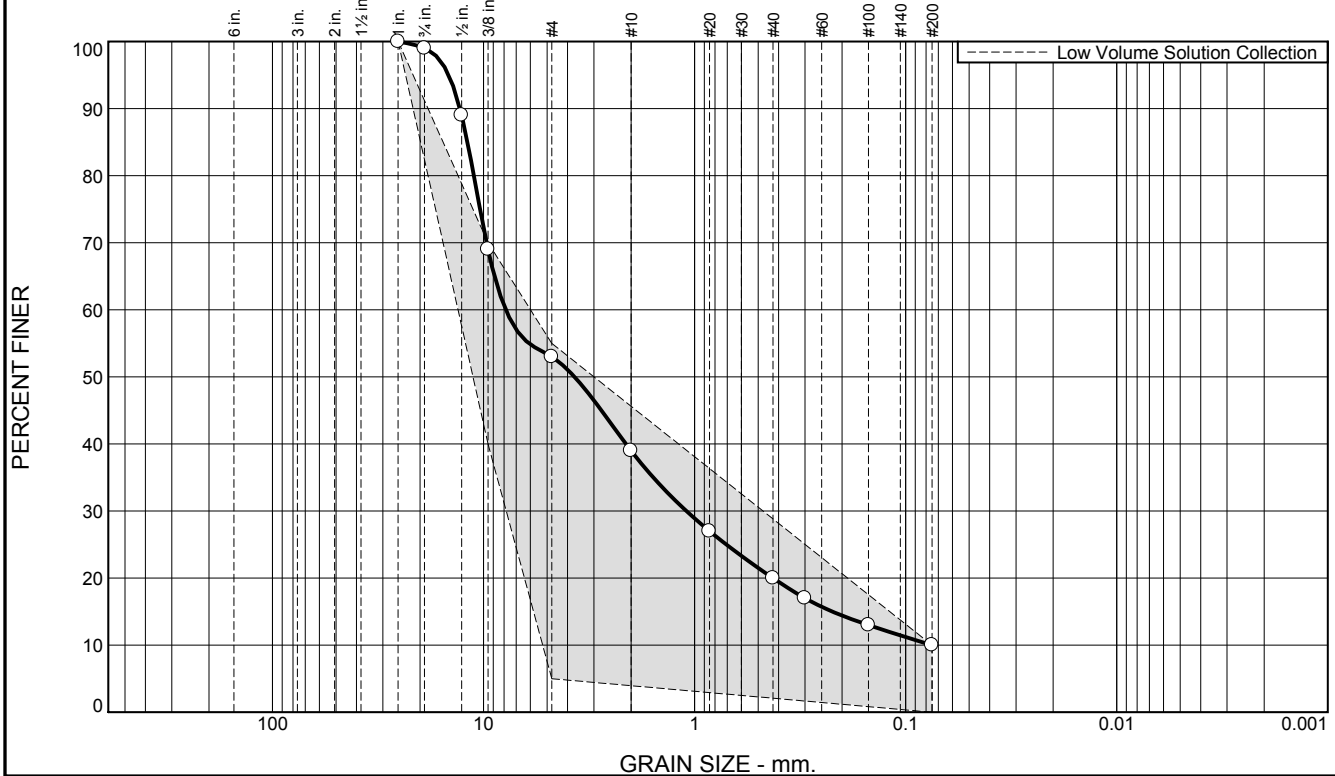
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-18-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	1.0	46.0	14.0	19.0	10.0	10.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	99.0		
.5"	89.0		
.375"	69.0	40.0 - 70.0	
#4	53.0	5.0 - 55.0	
#10	39.0		
#20	27.0		
#40	20.0		
#50	17.0		
#100	13.0		
#200	10.0	0.0 - 10.0	

Material Description

Grey well-graded gravel with silt and sand

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= GW-GM

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA approximate locaion N 55,218.6 E 34,852.5 at an elevation of 9,348.8'

* Low Volume Solution Collection

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-19-R

Date: 9/4/2014



Client: Cripple Creek & Victor Gold Mining Company

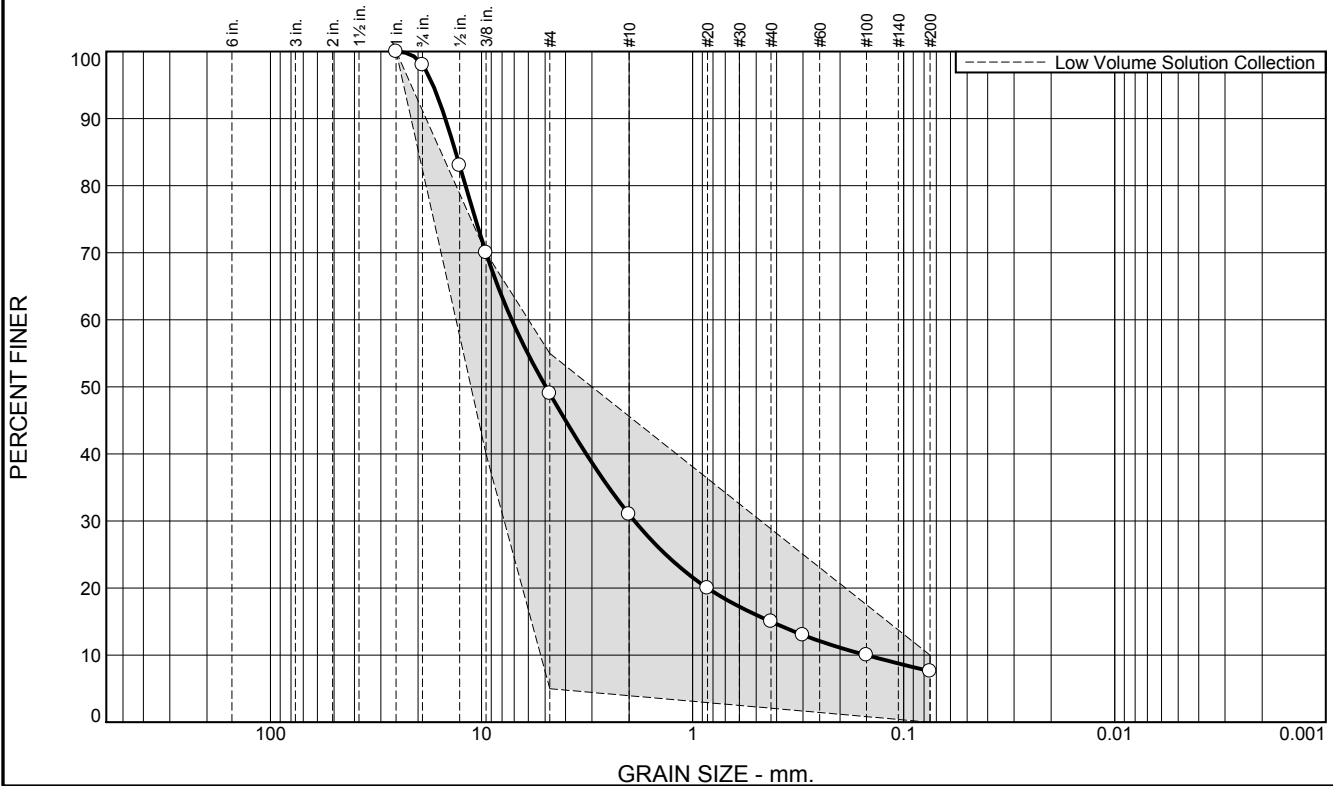
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-19-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	2.0	49.0	18.0	16.0	7.4	7.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	98.0		
.5"	83.0		
.375"	70.0	40.0 - 70.0	
#4	49.0	5.0 - 55.0	
#10	31.0		
#20	20.0		
#40	15.0		
#50	13.0		
#100	10.0		
#200	7.6	0.0 - 10.0	

* Low Volume Solution Collection

Material Description

Grey poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA approximate location N 55,188.5 E 34,880.0 at an elevation of 9,362.5'

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-20-R

Date: 9/4/2014



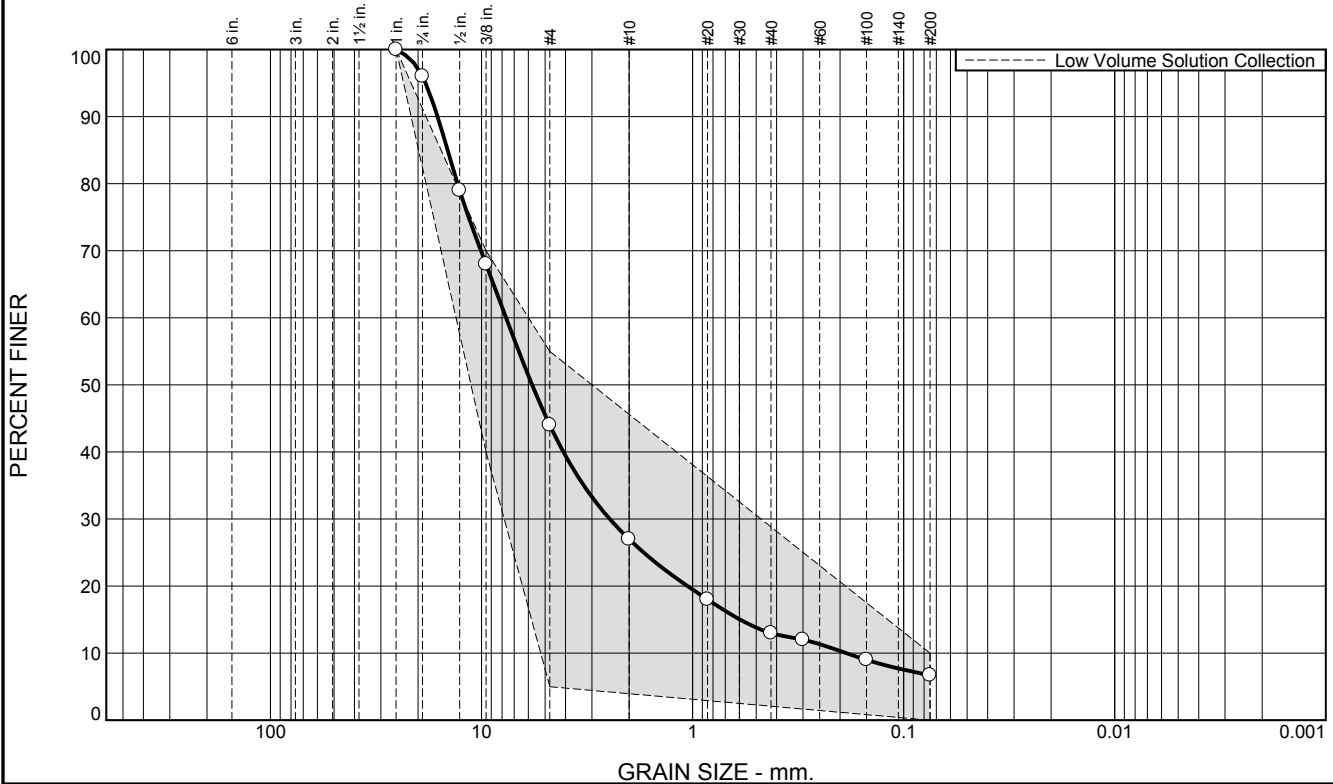
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-20-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.0	52.0	17.0	14.0	6.3	6.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	96.0		
.5"	79.0		
.375"	68.0	40.0 - 70.0	
#4	44.0	5.0 - 55.0	
#10	27.0		
#20	18.0		
#40	13.0		
#50	12.0		
#100	9.0		
#200	6.7	0.0 - 10.0	

* Low Volume Solution Collection

Material Description

Grey poorly graded gravel with silt and sand

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= GP-GM

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA approximate location N 55,565.3 E 34,590.4 at an elevation of 9,448.4'

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-21-R

Date: 9/4/2014



Client: Cripple Creek & Victor Gold Mining Company

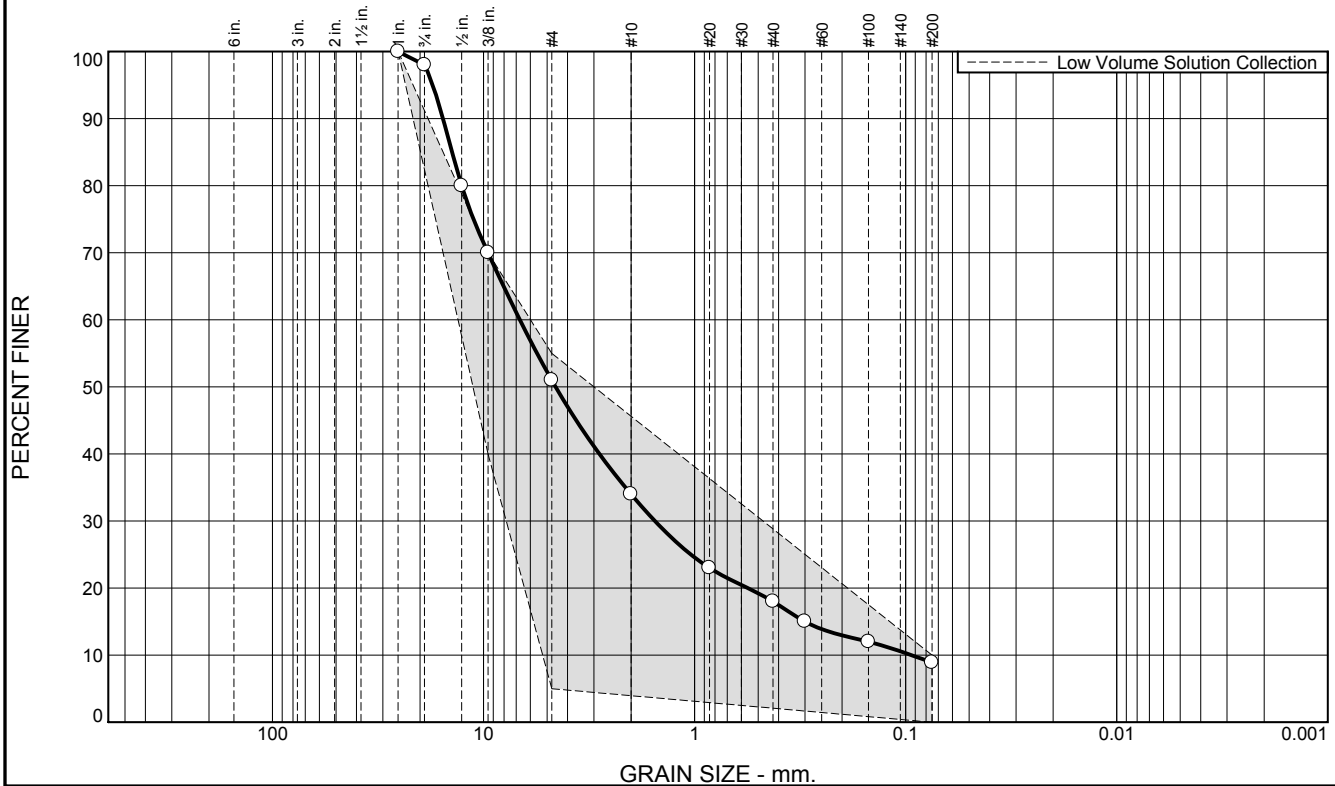
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-21-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	2.0	47.0	17.0	16.0	9.1	8.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	98.0		
.5"	80.0		
.375"	70.0	40.0 - 70.0	
#4	51.0	5.0 - 55.0	
#10	34.0		
#20	23.0		
#40	18.0		
#50	15.0		
#100	12.0		
#200	8.9	0.0 - 10.0	

Material Description

Grey poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA approximate location N 55,291.0 E 34,922.8 at an elevation of 9,351.5'

* Low Volume Solution Collection

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-22-R

Date: 9/5/2014



Client: Cripple Creek & Victor Gold Mining Company

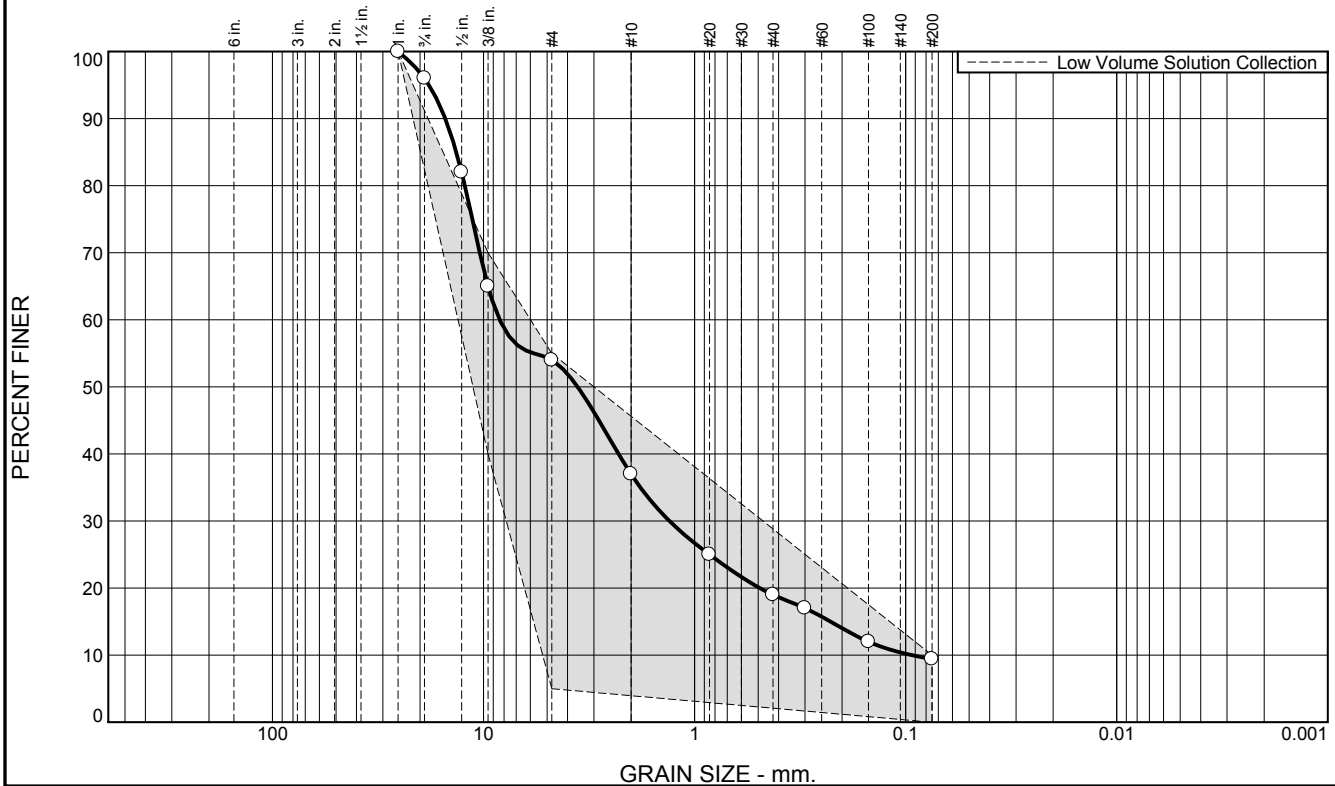
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-22-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.0	42.0	17.0	18.0	9.6	9.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	96.0		
.5"	82.0		
.375"	65.0	40.0 - 70.0	
#4	54.0	5.0 - 55.0	
#10	37.0		
#20	25.0		
#40	19.0		
#50	17.0		
#100	12.0		
#200	9.4	0.0 - 10.0	

Material Description

Grey well-graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA approximate location N 55,492.6 E 34,902.4 at an elevation of 9,351.3'

* Low Volume Solution Collection

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-23-R

Date: 9/5/2014



Client: Cripple Creek & Victor Gold Mining Company

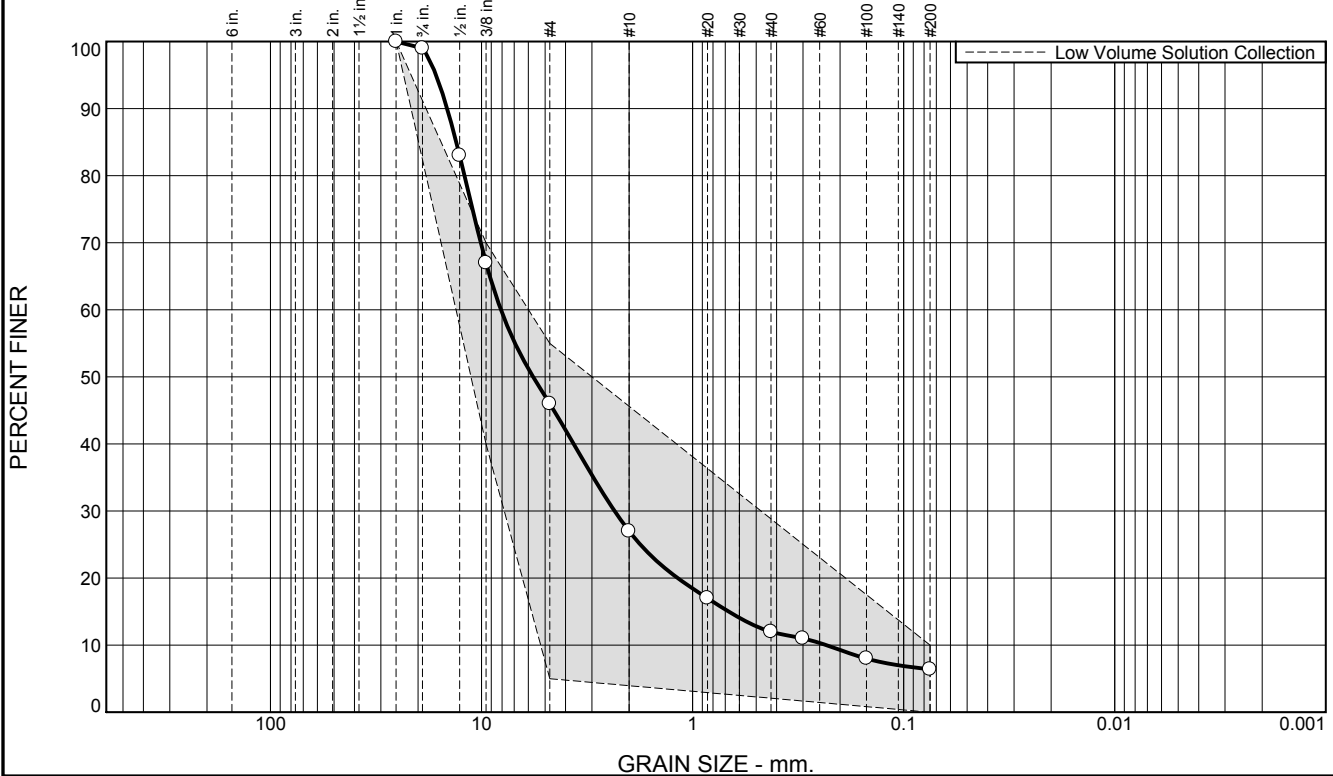
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-23-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	1.0	53.0	19.0	15.0	5.6	6.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	99.0		
.5"	83.0		
.375"	67.0	40.0 - 70.0	
#4	46.0	5.0 - 55.0	
#10	27.0		
#20	17.0		
#40	12.0		
#50	11.0		
#100	8.0		
#200	6.4	0.0 - 10.0	

Material Description

Grey well-graded gravel with silt and sand

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= GW-GM

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA at approximate location N 55,194.5 E 35,020.4 at an elevation of 9,394.6'

* Low Volume Solution Collection

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-24-R

Date: 9/6/2014



Client: Cripple Creek & Victor Gold Mining Company

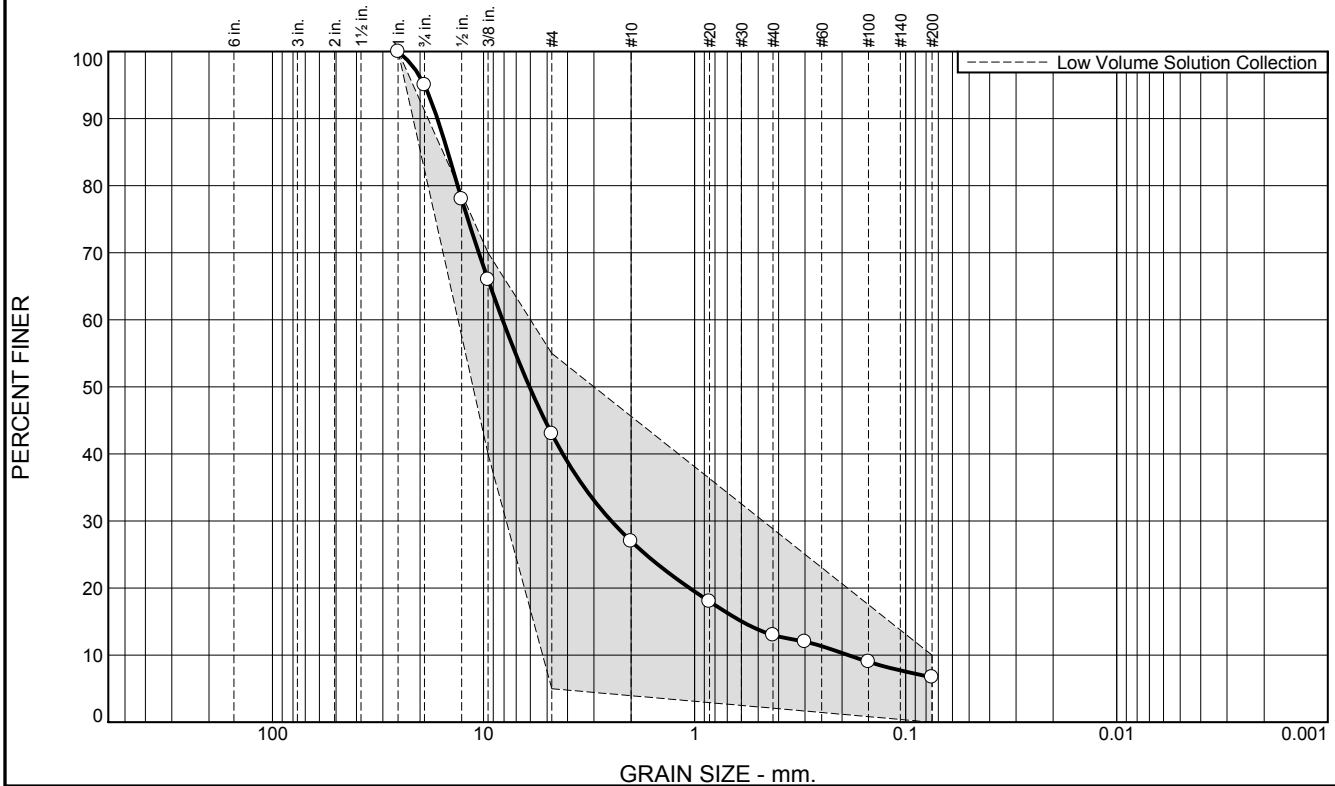
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-24-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.0	52.0	16.0	14.0	6.3	6.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	95.0		
.5"	78.0		
.375"	66.0	40.0 - 70.0	
#4	43.0	5.0 - 55.0	
#10	27.0		
#20	18.0		
#40	13.0		
#50	12.0		
#100	9.0		
#200	6.7	0.0 - 10.0	

* Low Volume Solution Collection

Material Description

Grey poorly graded gravel with silt and sand

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= GP-GM

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA approximate location N 55,461.3 E 34,827.9 at an elevation of 9,359.5'

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-25-R

Date: 9/6/2014



Client: Cripple Creek & Victor Gold Mining Company

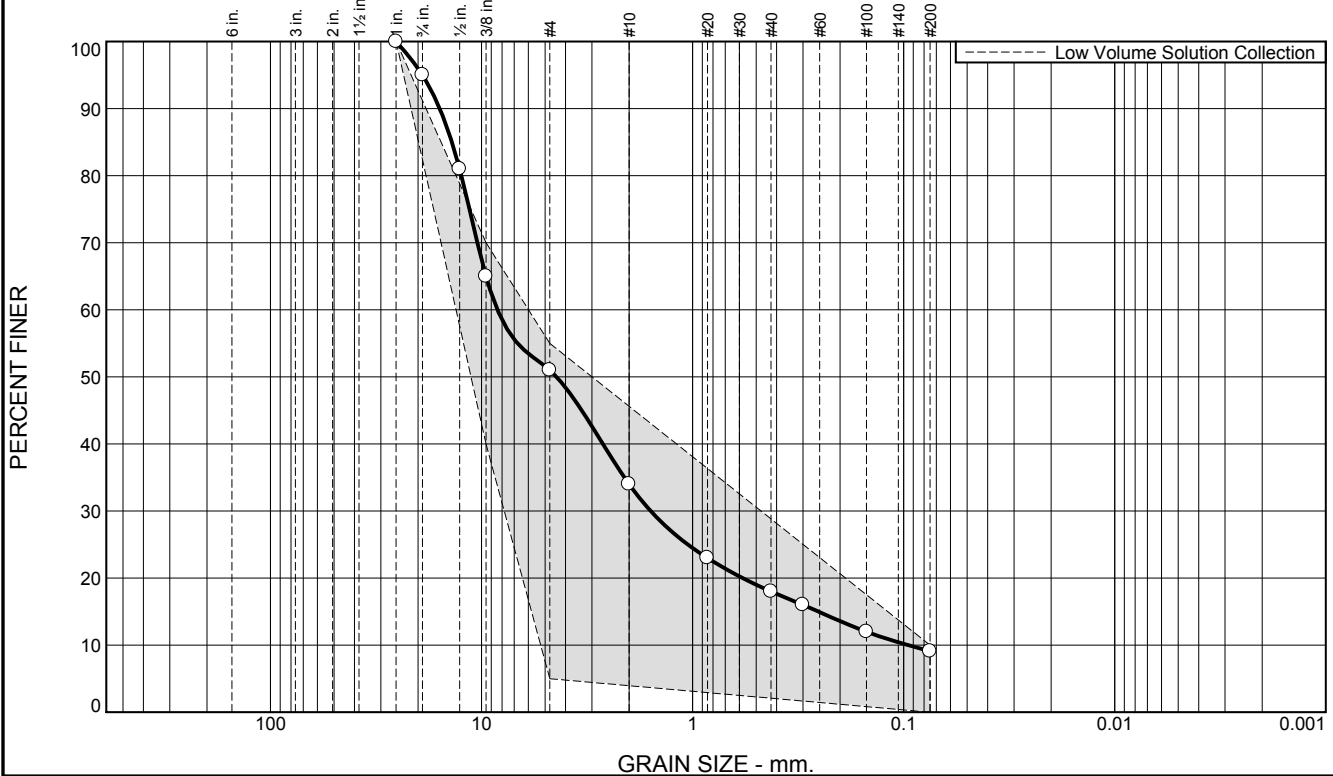
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-25-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.0	44.0	17.0	16.0	8.9	9.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	95.0		
.5"	81.0		
.375"	65.0	40.0 - 70.0	
#4	51.0	5.0 - 55.0	
#10	34.0		
#20	23.0		
#40	18.0		
#50	16.0		
#100	12.0		
#200	9.1	0.0 - 10.0	

* Low Volume Solution Collection

Material Description

Grey poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA approximate location N 55,517.9 E 34,758.5 at an elevation of 9,394.9'

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-26-R

Date: 9/8/2014



Client: Cripple Creek & Victor Gold Mining Company

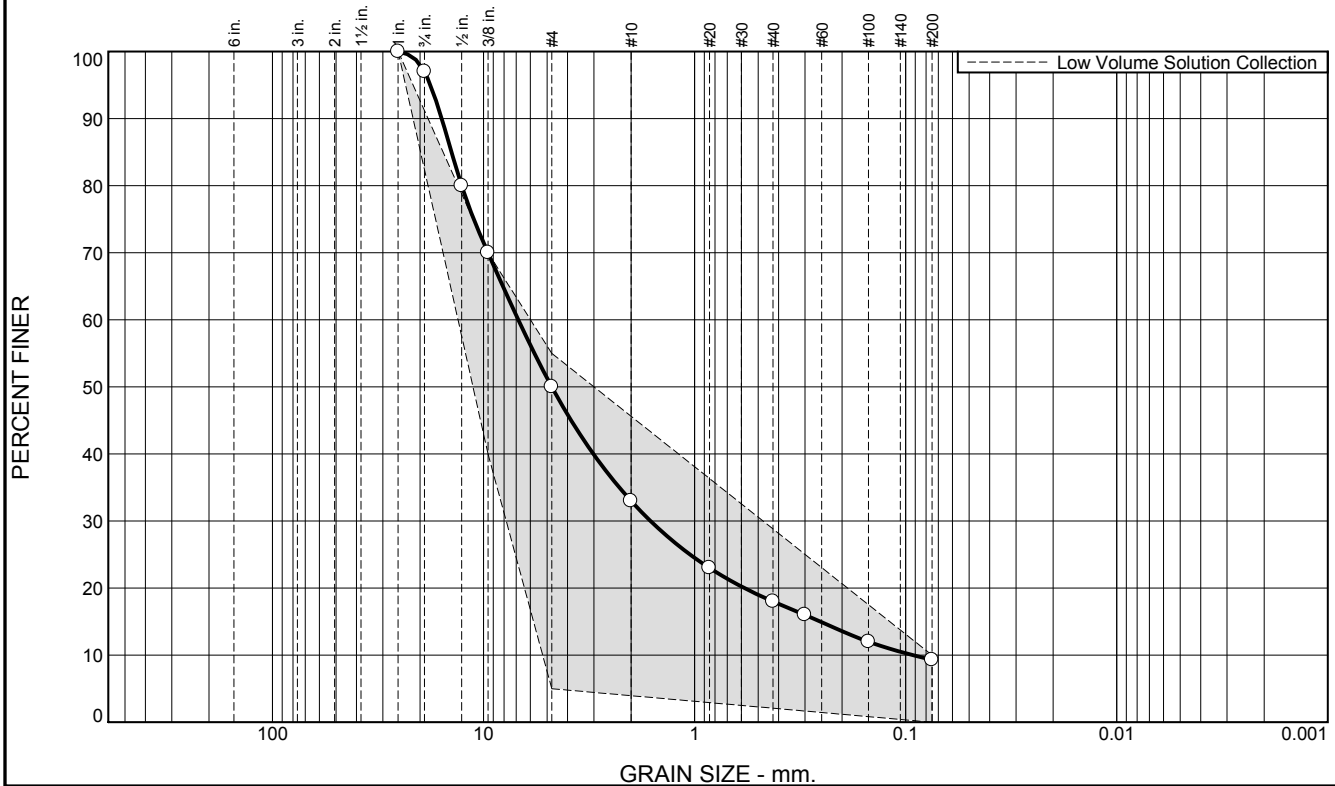
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure LVSCF-26-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	3.0	47.0	17.0	15.0	8.7	9.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.0"	100.0	100.0	
.75"	97.0		
.5"	80.0		
.375"	70.0	40.0 - 70.0	
#4	50.0	5.0 - 55.0	
#10	33.0		
#20	23.0		
#40	18.0		
#50	16.0		
#100	12.0		
#200	9.3	0.0 - 10.0	

Material Description

Grey poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA approximate location N 55,675.9 E 35,285.3 at an elevation of 9,378.9'

* Low Volume Solution Collection

Source of Sample: PSSA-Low Volume Solution Collection Fill
Sample Number: LVSCF-27-R

Date: 9/8/2014



Client: Cripple Creek & Victor Gold Mining Company

Project: VLF Squaw Gulch

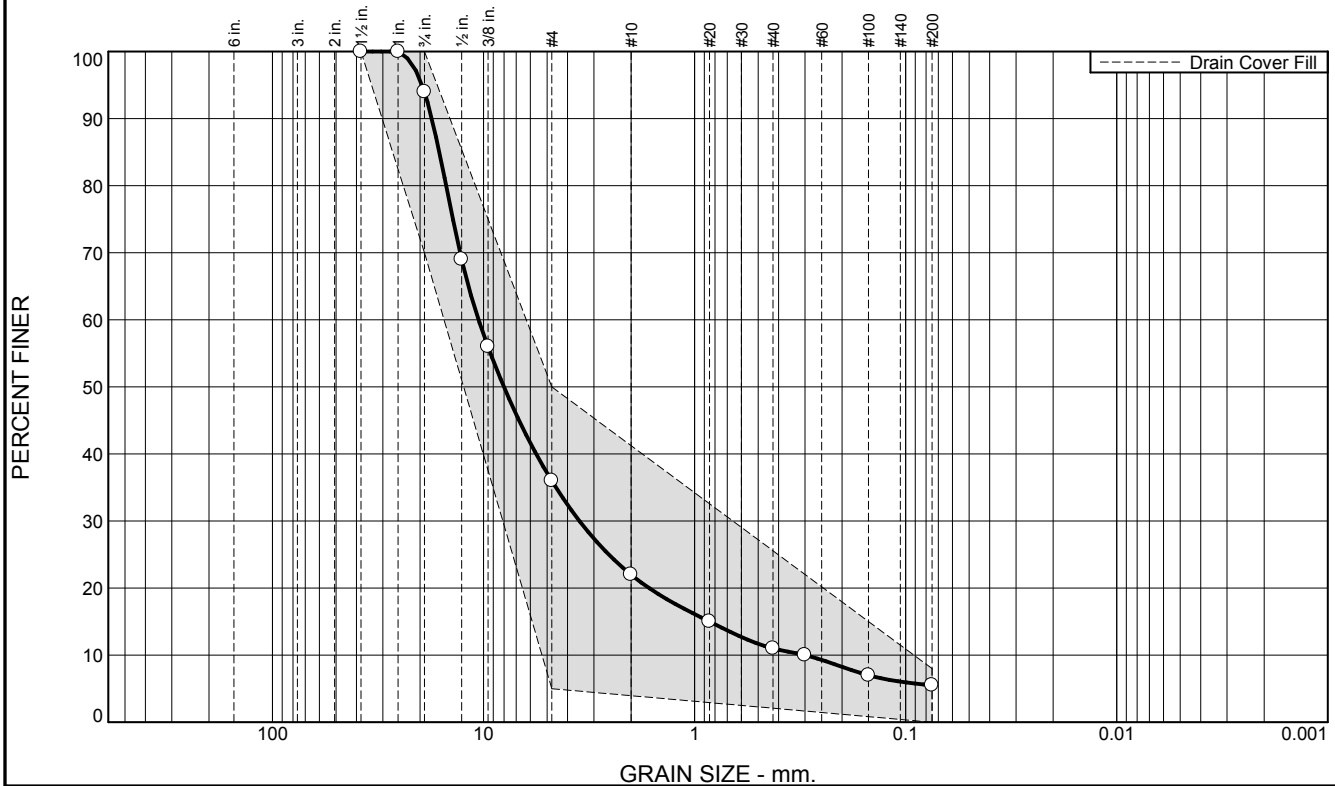
Project No: 74201125N0

Figure LVSCF-27-R

Tested By: Razi Molloy

Drain Cover Fill

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	6.0	58.0	14.0	11.0	5.5	5.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	100.0		
.75"	94.0	70.0 - 100.0	
.5"	69.0		
.375"	56.0		
#4	36.0	5.0 - 50.0	
#10	22.0		
#20	15.0		
#40	11.0		
#50	10.0		
#100	7.0		
#200	5.5	0.0 - 8.0	

* Drain Cover Fill

Material Description

Grey poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA approximate location N 55,494.8 E 35,459.0 at an elevation of 9,454.1'

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

Date: 9/15/2014



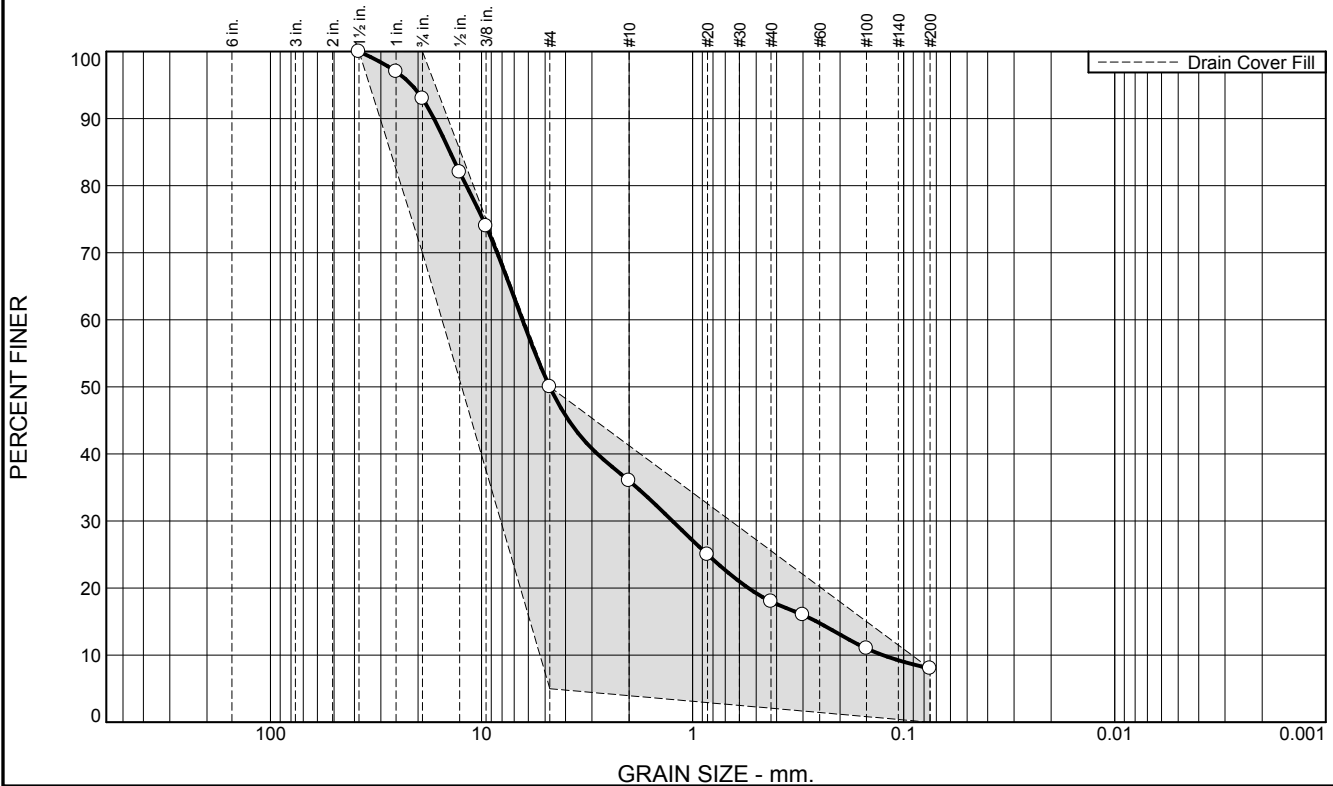
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure DCF-1-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	7.0	43.0	14.0	18.0	10.0	8.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	97.0	70.0 - 100.0	
.75"	93.0		
.5"	82.0		
.375"	74.0	5.0 - 50.0	
#4	50.0		
#10	36.0		
#20	25.0	0.0 - 8.0	
#40	18.0		
#50	16.0		
#100	11.0		
#200	8.0		

* Drain Cover Fill

Material Description

Grey well-graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA approximate location N 55,185.0 E 35,160.1 at an elevation of 9,422.6

Source of Sample: PSSA-Drain Cover Fill
Sample Number: DCF-2-R

Date: 9/22/2014



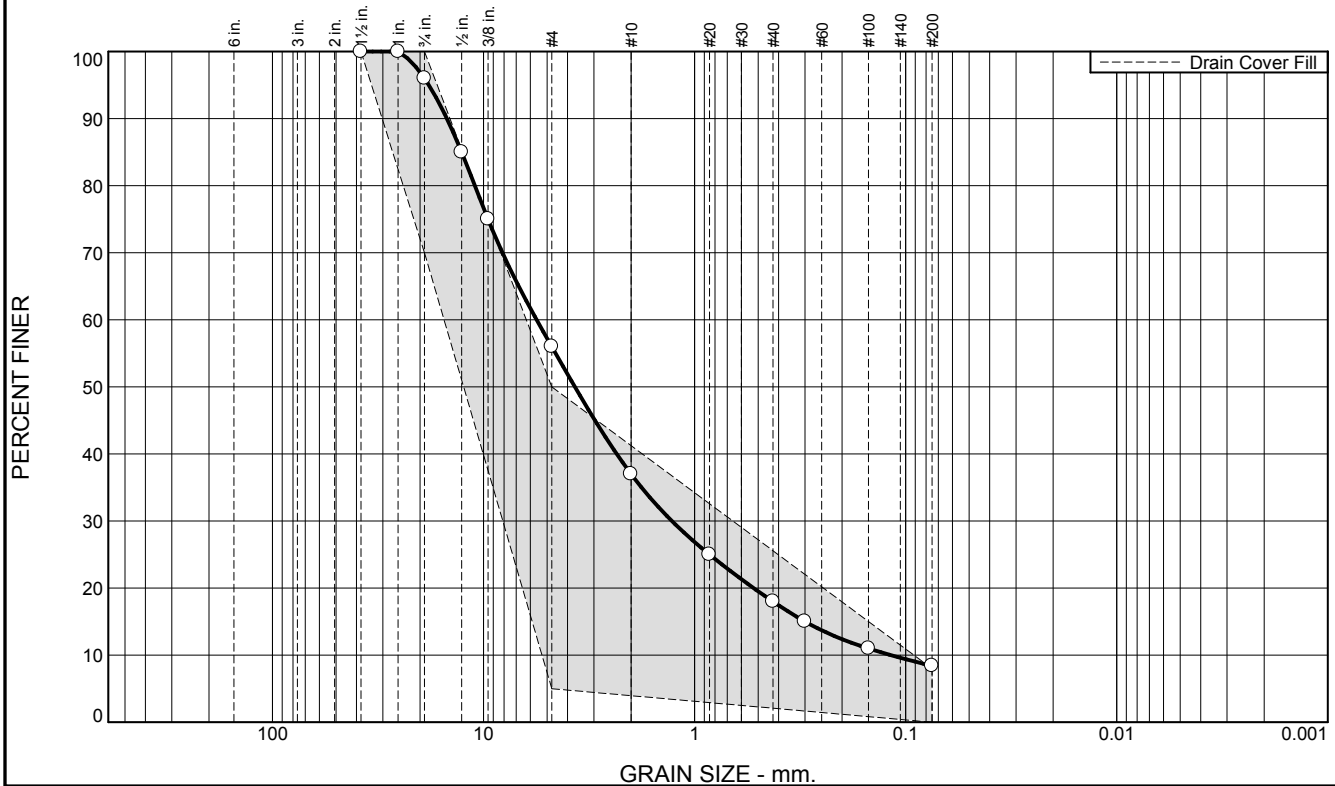
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure DCF-2-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.0	40.0	19.0	19.0	9.6	8.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	100.0		
.75"	96.0	70.0 - 100.0	
.5"	85.0		
.375"	75.0		
#4	56.0	5.0 - 50.0	X
#10	37.0		
#20	25.0		
#40	18.0		
#50	15.0		
#100	11.0		
#200	8.4	0.0 - 8.0	X

* Drain Cover Fill

Material Description

Grey well-graded sand with silt and gravel

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA approximate location N 55,284.7 E 35,233.7 at an elevation of 9,425.5

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

Date: 9/22/2014



Client: Cripple Creek & Victor Gold Mining Company

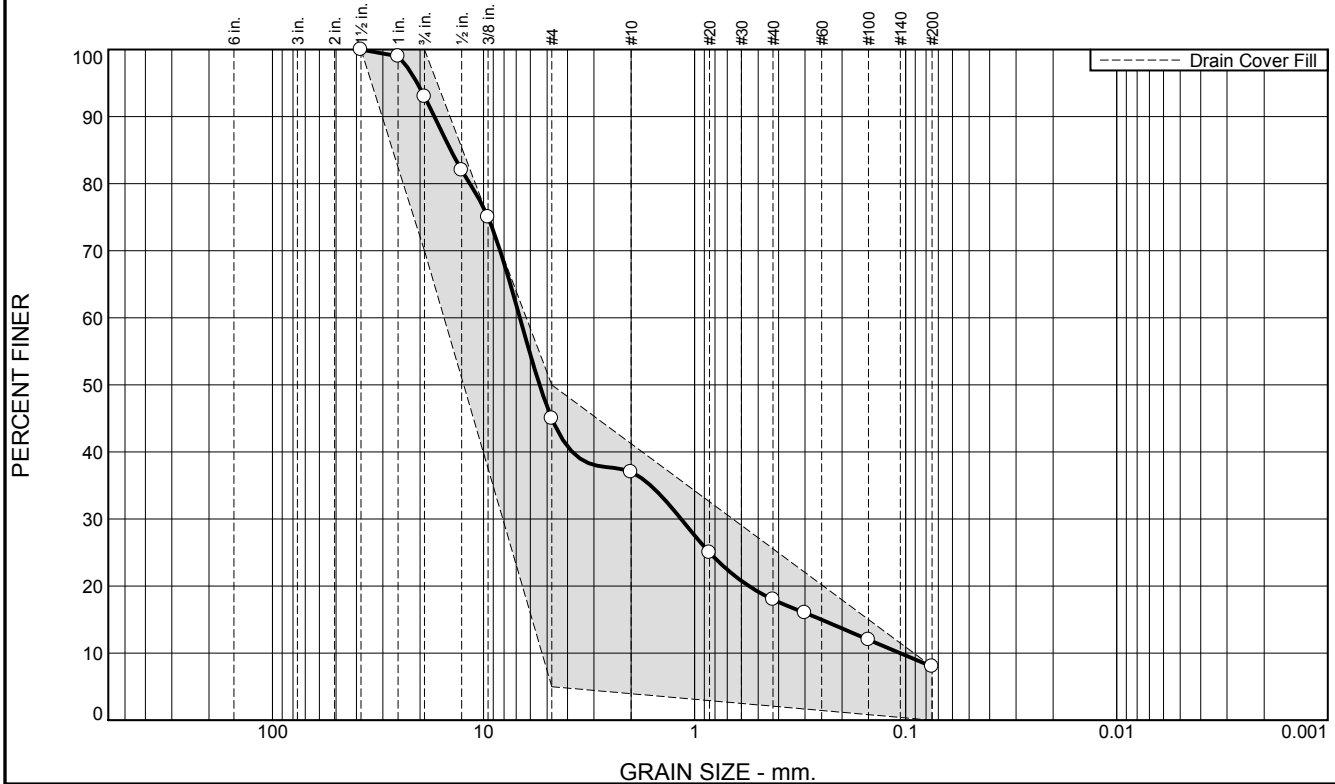
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure DCF-3-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	7.0	48.0	8.0	19.0	10.0	8.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	99.0		
.75"	93.0	70.0 - 100.0	
.5"	82.0		
.375"	75.0		
#4	45.0	5.0 - 50.0	
#10	37.0		
#20	25.0		
#40	18.0		
#50	16.0		
#100	12.0		
#200	8.0	0.0 - 8.0	

* Drain Cover Fill

Material Description

Grey well-graded gravel with silt and sand

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= GW-GM

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA approximate locaiton N 55,192.1 E 35,167.0 at an elevation of 9,427.6'. Material was reprocessed and resampled

Source of Sample: PSSA-Drain Cover Fill
Sample Number: DCF-3A-R

Date: 9/23/2014



Client: Cripple Creek & Victor Gold Mining Company

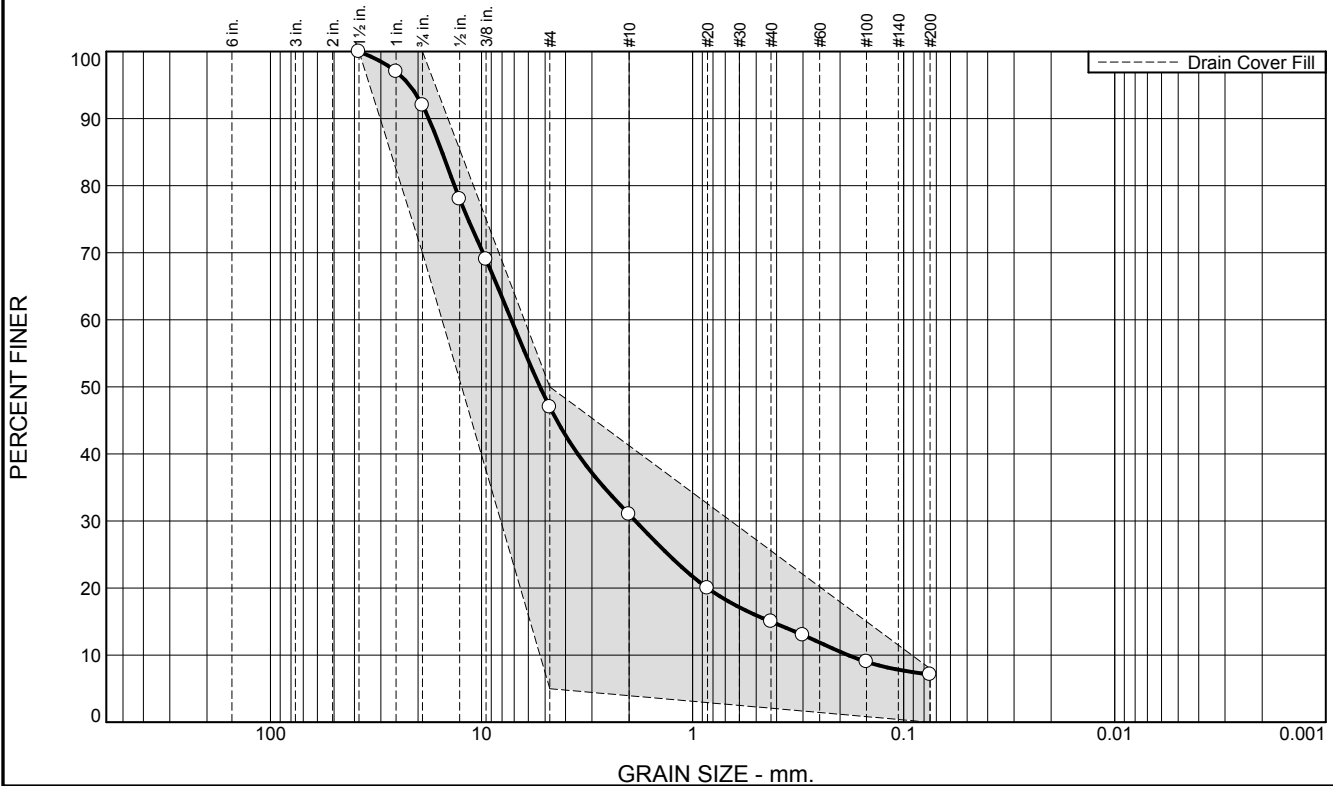
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure DCF-3A-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	8.0	45.0	16.0	16.0	7.9	7.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	97.0		
.75"	92.0	70.0 - 100.0	
.5"	78.0		
.375"	69.0		
#4	47.0	5.0 - 50.0	
#10	31.0		
#20	20.0		
#40	15.0		
#50	13.0		
#100	9.0		
#200	7.1	0.0 - 8.0	

* Drain Cover Fill

Material Description

Grey well-graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA approximate location N 55, 176.2 E 35,152.1 at an elevation of 9,412.6'. Material was reprocessed and resampled

Source of Sample: PSSA-Drain Cover Fill
Sample Number: DCF-3B-R

Date: 9/23/2014



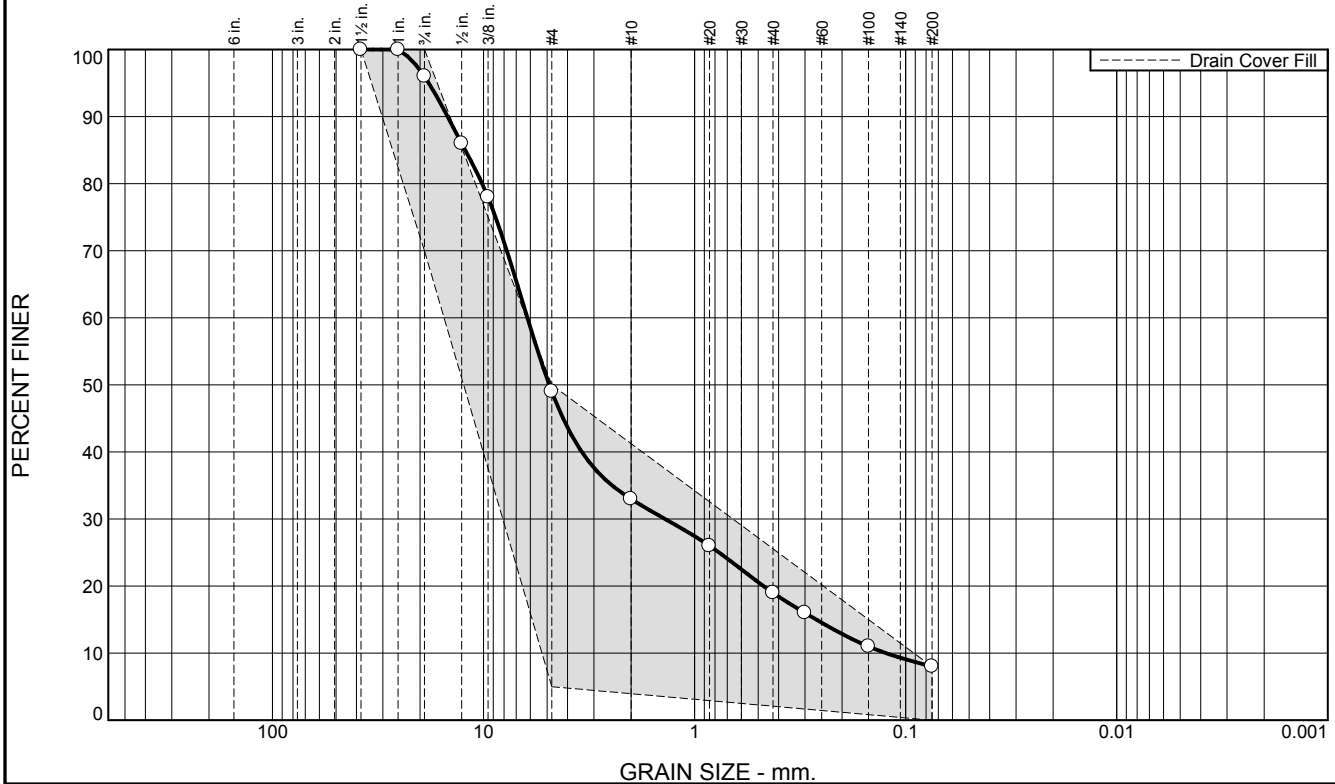
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure DCF-3B-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.0	47.0	16.0	14.0	11.0	8.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	100.0		
.75"	96.0	70.0 - 100.0	
.5"	86.0		
.375"	78.0		
#4	49.0	5.0 - 50.0	
#10	33.0		
#20	26.0		
#40	19.0		
#50	16.0		
#100	11.0		
#200	8.0	0.0 - 8.0	

* Drain Cover Fill

Material Description

Grey well-graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA approximate location N 55, 348.0 E 34,767.7 at an elevation of 9,350.0'

Source of Sample: PSSA-Drain Cover Fill
Sample Number: DCF-4-R

Date: 9/25/2014



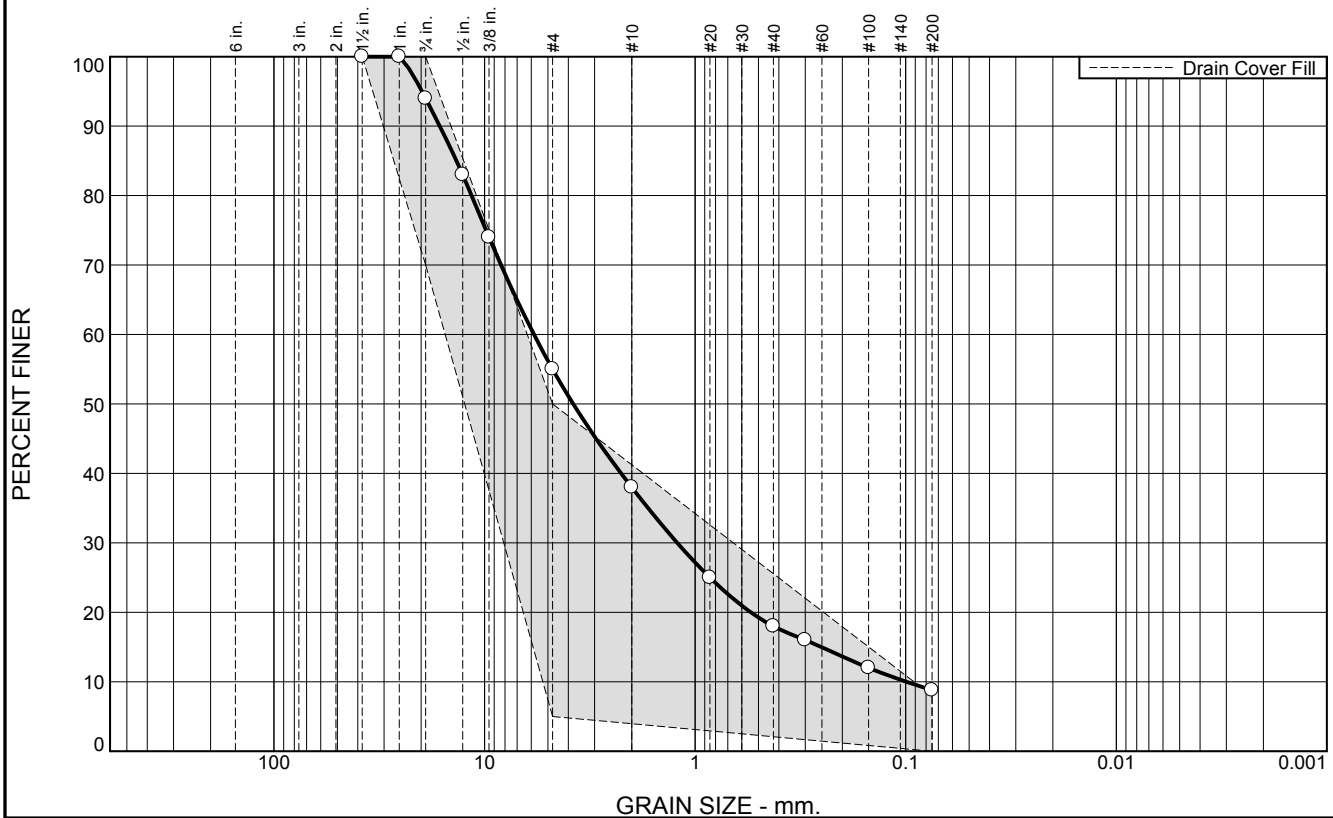
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure DCF-4-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	6.0	39.0	17.0	20.0	9.2	8.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	100.0		
.75"	94.0	70.0 - 100.0	
.5"	83.0		
.375"	74.0		
#4	55.0	5.0 - 50.0	X
#10	38.0		
#20	25.0		
#40	18.0		
#50	16.0		
#100	12.0		
#200	8.8	0.0 - 8.0	X

* Drain Cover Fill

Material Description

Grey well-graded sand with silt and gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= SW-SM

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA approximate location N 55,266.3 E 34,516.7 at an elevation of 9,383.3'

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

Date: 9/25/2014



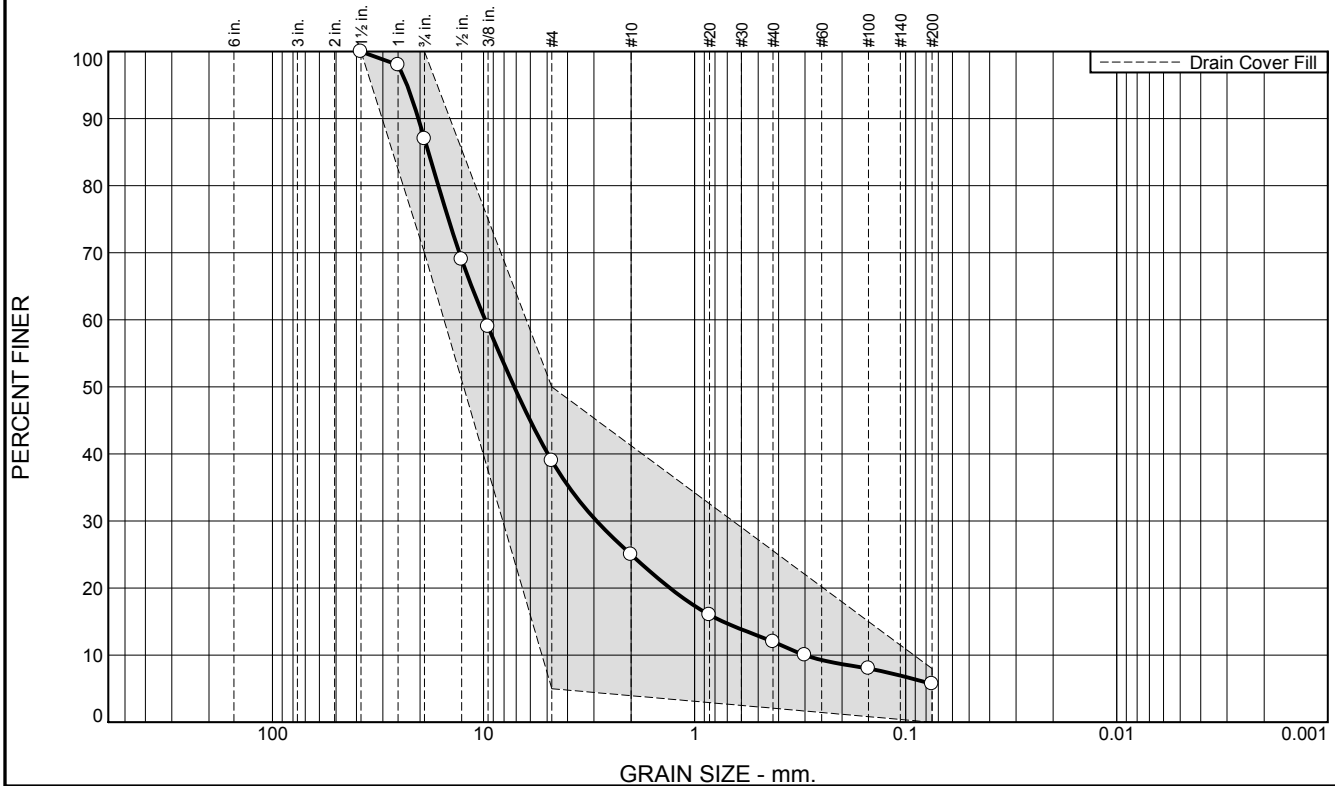
Client: Cripple Creek & Victor Gold Mining Company

Project: VLF Squaw Gulch

Project No: 74201125N0

Figure DCF-5-R

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	13.0	48.0	14.0	13.0	6.3	5.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	98.0	70.0 - 100.0	
.75"	87.0		
.5"	69.0		
.375"	59.0	5.0 - 50.0	
#4	39.0		
#10	25.0		
#20	16.0	0.0 - 8.0	
#40	12.0		
#50	10.0		
#100	8.0		
#200	5.7		

* Drain Cover Fill

Material Description

Grey well-graded gravel with silt and sand

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= GW-GM

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA approximate location N 55,268.9 E 34,520.1 at an elevation of 9,381.5'. Material was reprocessed and resampled

Source of Sample: PSSA-Drain Cover Fill
Sample Number: DCF-5A-R

Date: 9/27/2014



Client: Cripple Creek & Victor Gold Mining Company

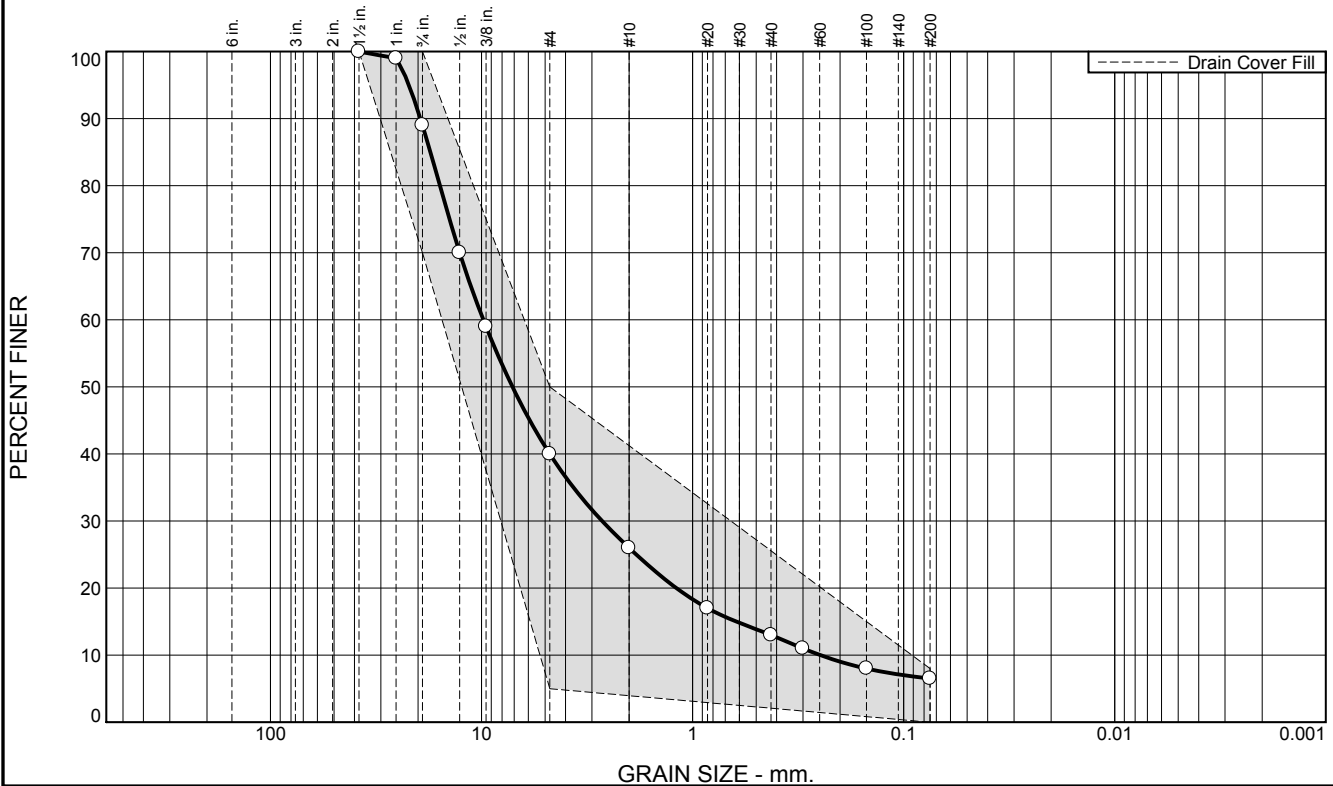
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure DCF-5A-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	11.0	49.0	14.0	13.0	6.5	6.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	99.0		
.75"	89.0	70.0 - 100.0	
.5"	70.0		
.375"	59.0		
#4	40.0	5.0 - 50.0	
#10	26.0		
#20	17.0		
#40	13.0		
#50	11.0		
#100	8.0		
#200	6.5	0.0 - 8.0	

* Drain Cover Fill

Material Description

Grey well-graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA approximate location N 55,268.9 E 34,520.1 at an elevation of 9,381.5'. Material was reprocessed and resampled

Source of Sample: PSSA-Drain Cover Fill
Sample Number: DCF-5B-R

Date: 9/27/2014



Client: Cripple Creek & Victor Gold Mining Company

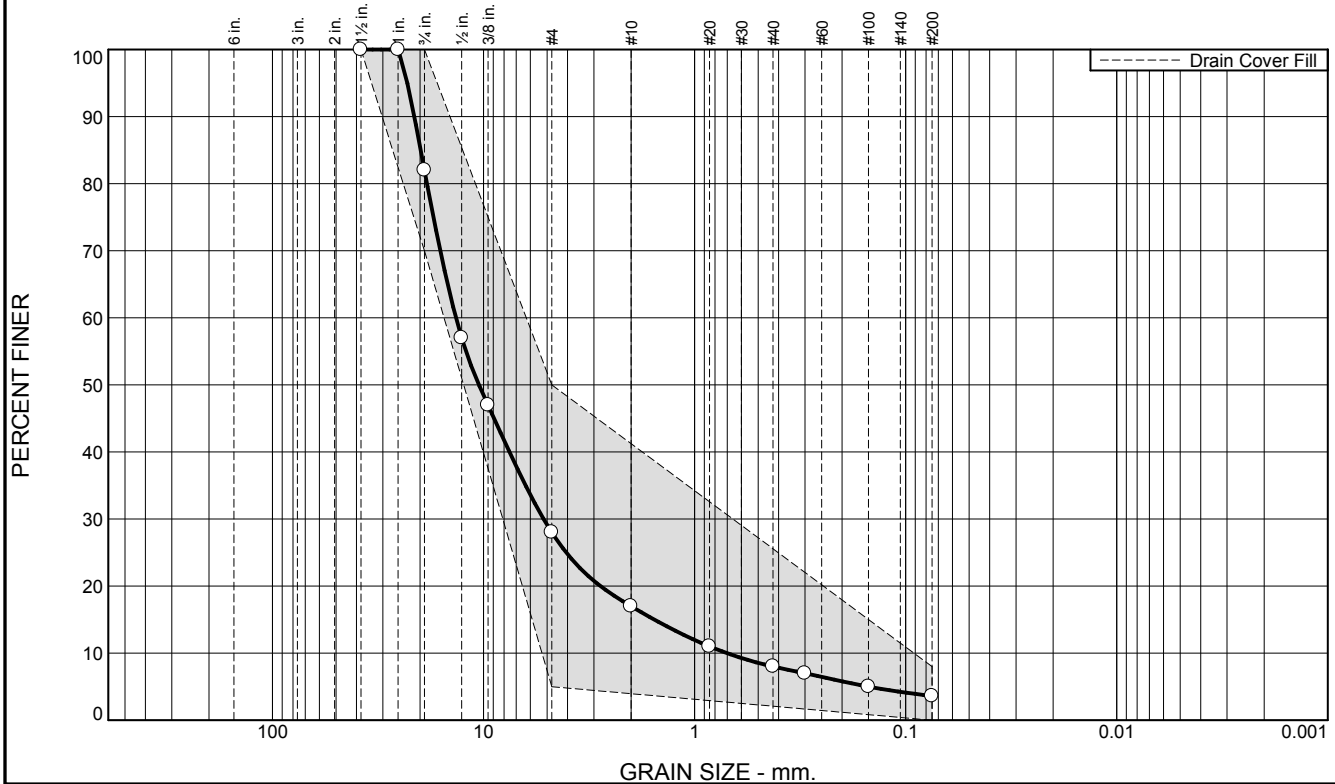
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure DCF-5B-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	18.0	54.0	11.0	9.0	4.4	3.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	100.0		
.75"	82.0	70.0 - 100.0	
.5"	57.0		
.375"	47.0		
#4	28.0	5.0 - 50.0	
#10	17.0		
#20	11.0		
#40	8.0		
#50	7.0		
#100	5.0		
#200	3.6	0.0 - 8.0	

* Drain Cover Fill

Material Description

Grey well-graded gravel with sand

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= GW

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA approximate location N 55, 225.0 E 34,398.7 at an elevation of 9,413.0'

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

Date: 10/3/2014



Client: Cripple Creek & Victor Gold Mining Company

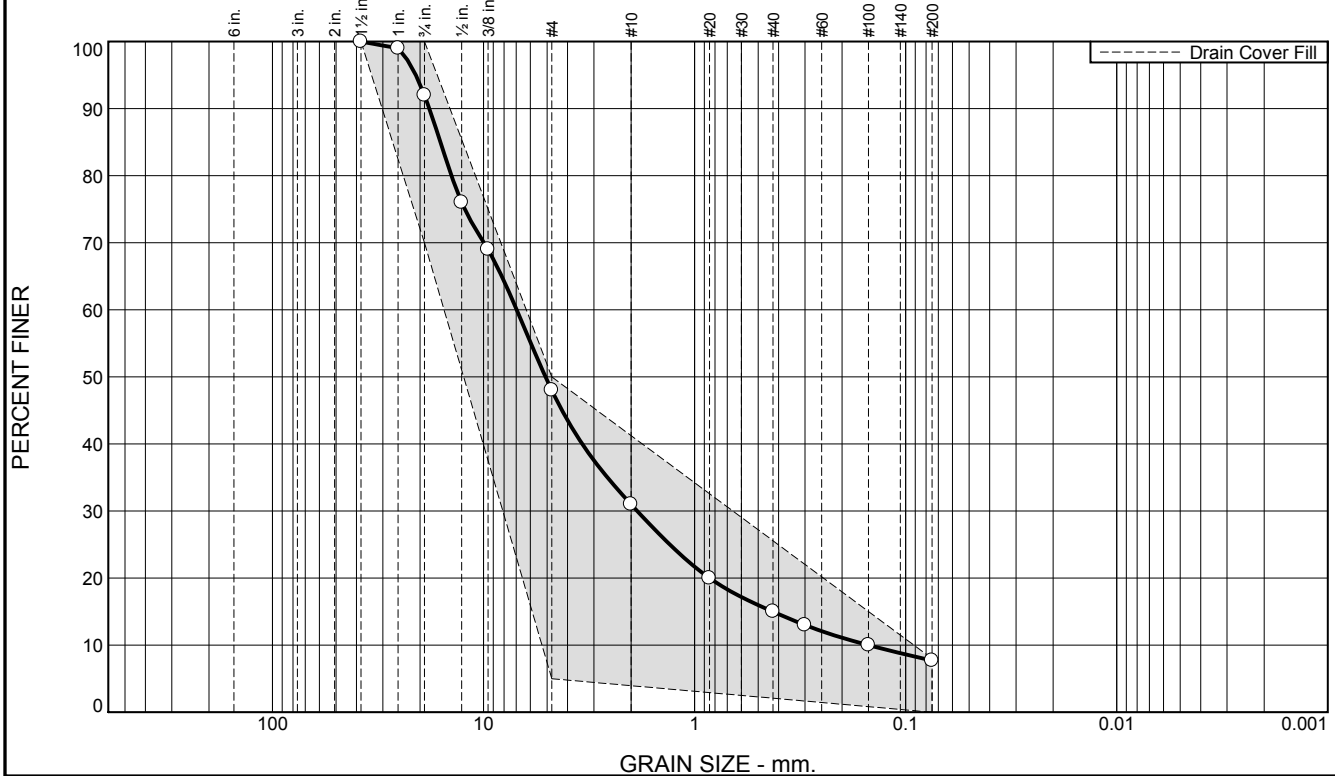
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure DCF-6-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	8.0	44.0	17.0	16.0	7.3	7.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	99.0		
.75"	92.0	70.0 - 100.0	
.5"	76.0		
.375"	69.0		
#4	48.0	5.0 - 50.0	
#10	31.0		
#20	20.0		
#40	15.0		
#50	13.0		
#100	10.0		
#200	7.7	0.0 - 8.0	

* Drain Cover Fill

Material Description

Grey poorly graded gravel with silt and sand

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= GP-GM

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA approximate location N 55,626.1 E 35,176.1 at an elevation of 9,356.9'

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

Date: 10/7/2014



Client: Cripple Creek & Victor Gold Mining Company

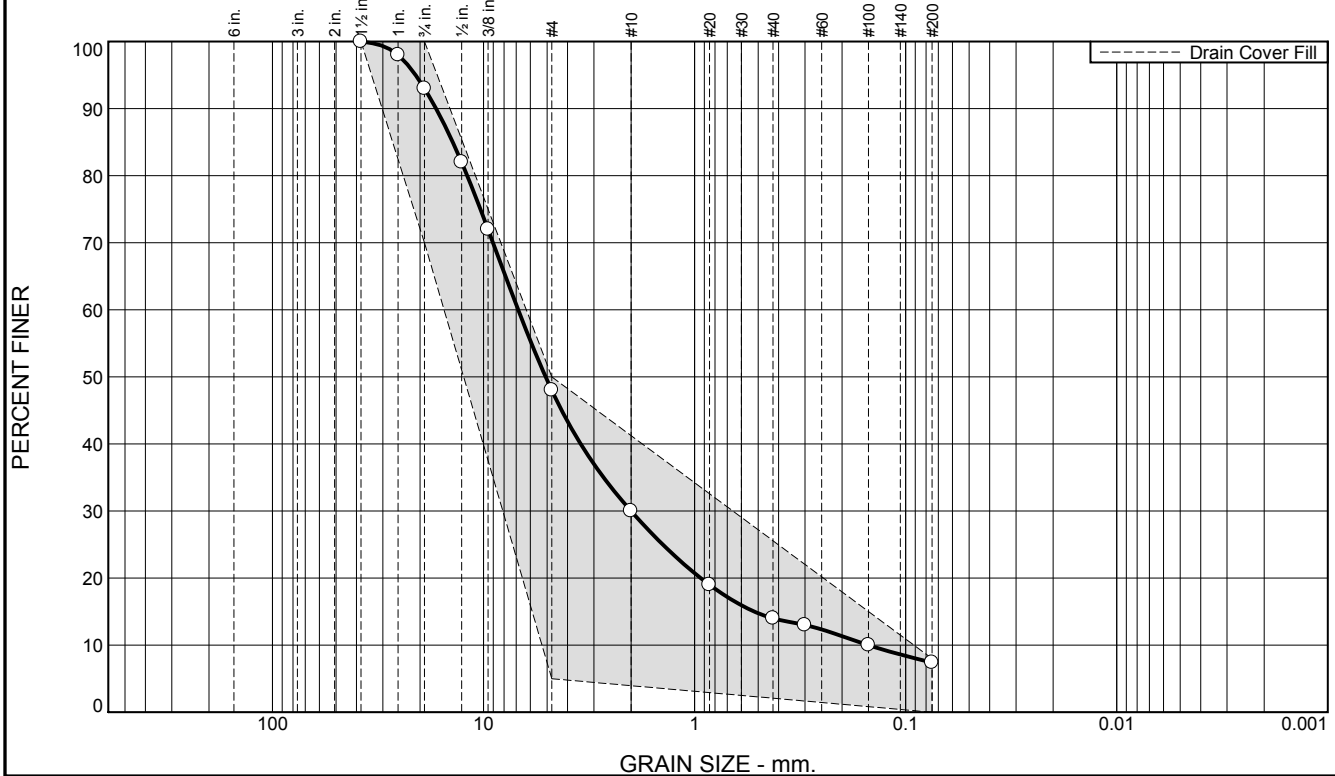
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure DCF-7-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	7.0	45.0	18.0	16.0	6.6	7.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	98.0	70.0 - 100.0	
.75"	93.0		
.5"	82.0		
.375"	72.0	5.0 - 50.0	
#4	48.0		
#10	30.0		
#20	19.0	0.0 - 8.0	
#40	14.0		
#50	13.0		
#100	10.0		
#200	7.4		

* Drain Cover Fill

Material Description

Grey poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA approximate location N 55,561.4 E 35,145.1 at an elevation of 9,359.7'

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

Date: 10/7/2014



Client: Cripple Creek & Victor Gold Mining Company

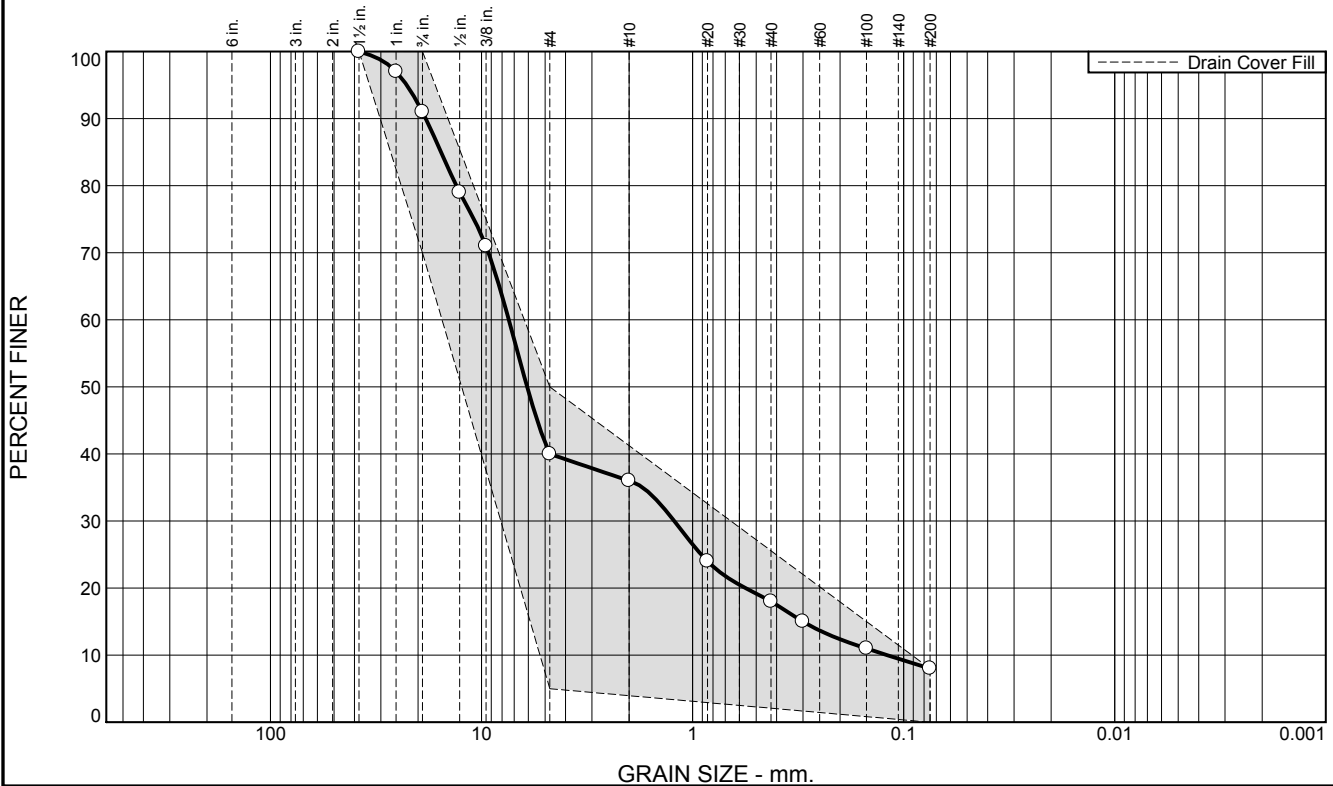
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure DCF-8-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	9.0	51.0	4.0	18.0	10.0	8.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	97.0	70.0 - 100.0	
.75"	91.0		
.5"	79.0		
.375"	71.0	5.0 - 50.0	
#4	40.0		
#10	36.0		
#20	24.0	0.0 - 8.0	
#40	18.0		
#50	15.0		
#100	11.0		
#200	8.0		

* Drain Cover Fill

Material Description

Grey well-graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA approximate location N 55,099.4 E 34,438.8 at an elevation of 9,371.5'

Source of Sample: PSSA-Drain Cover Fill
Sample Number: DCF-9-R

Date: 10/7/2014



Client: Cripple Creek & Victor Gold Mining Company

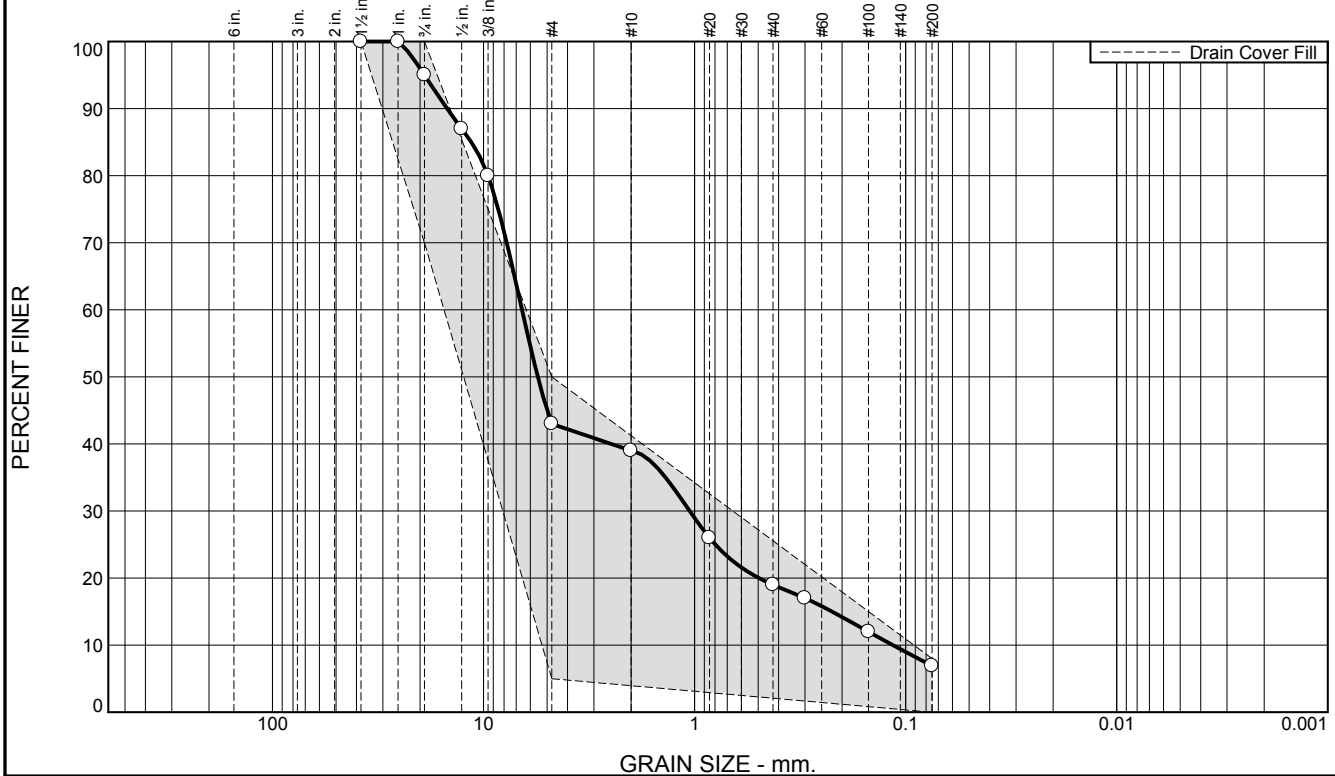
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure DCF-9-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.0	52.0	4.0	20.0	12.1	6.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	100.0		
.75"	95.0	70.0 - 100.0	
.5"	87.0		
.375"	80.0		
#4	43.0	5.0 - 50.0	
#10	39.0		
#20	26.0		
#40	19.0		
#50	17.0		
#100	12.0		
#200	6.9	0.0 - 8.0	

* Drain Cover Fill

Material Description

Grey well-graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA approximate location N 54,881.9 E 34,399.2 at an elevation of 9,363.3'

Source of Sample: PSSA-Drain Cover Fill
Sample Number: DCF-10-R

Date: 10/7/2014



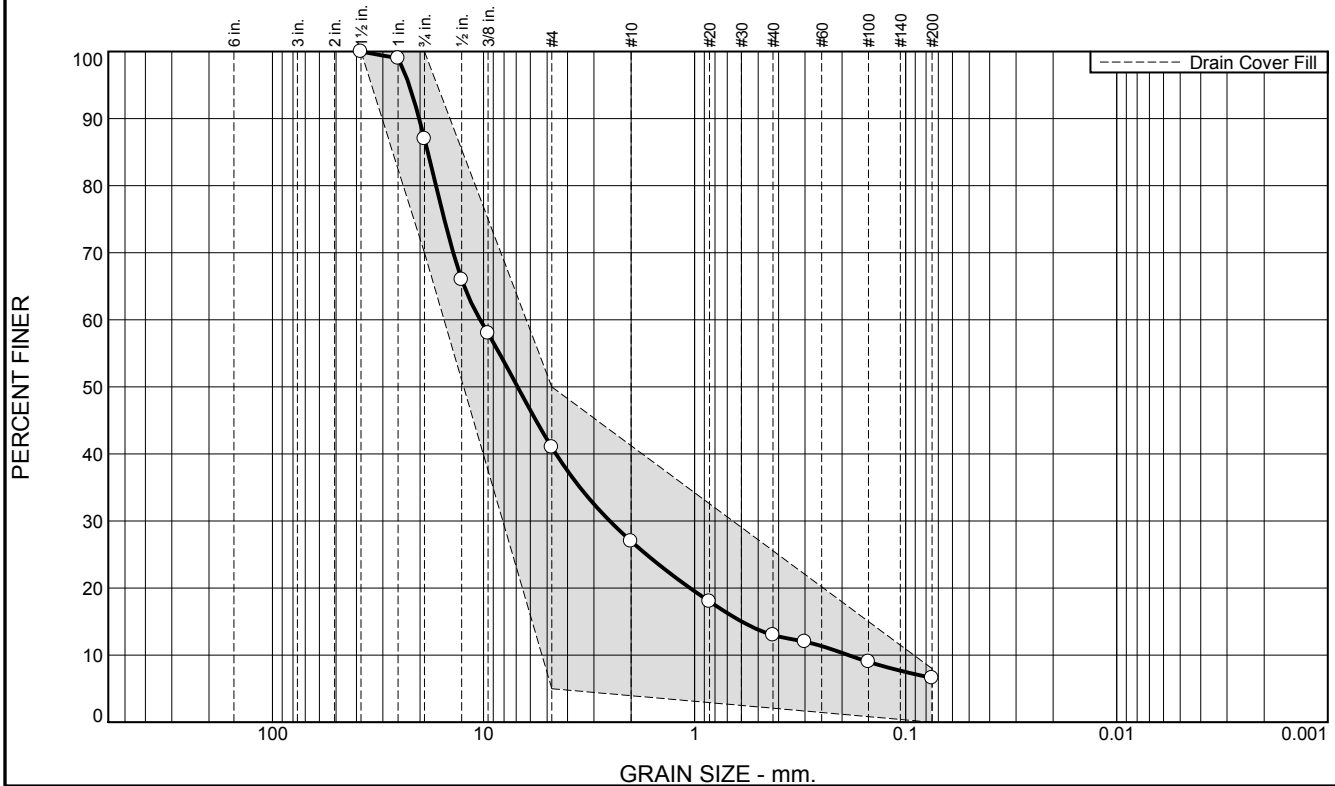
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure DCF-10-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	13.0	46.0	14.0	14.0	6.4	6.6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	99.0		
.75"	87.0	70.0 - 100.0	
.5"	66.0		
.375"	58.0		
#4	41.0	5.0 - 50.0	
#10	27.0		
#20	18.0		
#40	13.0		
#50	12.0		
#100	9.0		
#200	6.6	0.0 - 8.0	

* Drain Cover Fill

Material Description

Grey poorly graded gravel with silt and sand

Atterberg Limits

PL= NP LL= NV PI= NP

Classification

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

Remarks

Sample obtained from the PSSA approximate location N 55,261.2 E 35,242.2 at an elevation of 9,431.0'

Source of Sample: PSSA-Drain Cover Fill
Sample Number: DCF-11-R

Date: 10/7/2014



Client: Cripple Creek & Victor Gold Mining Company

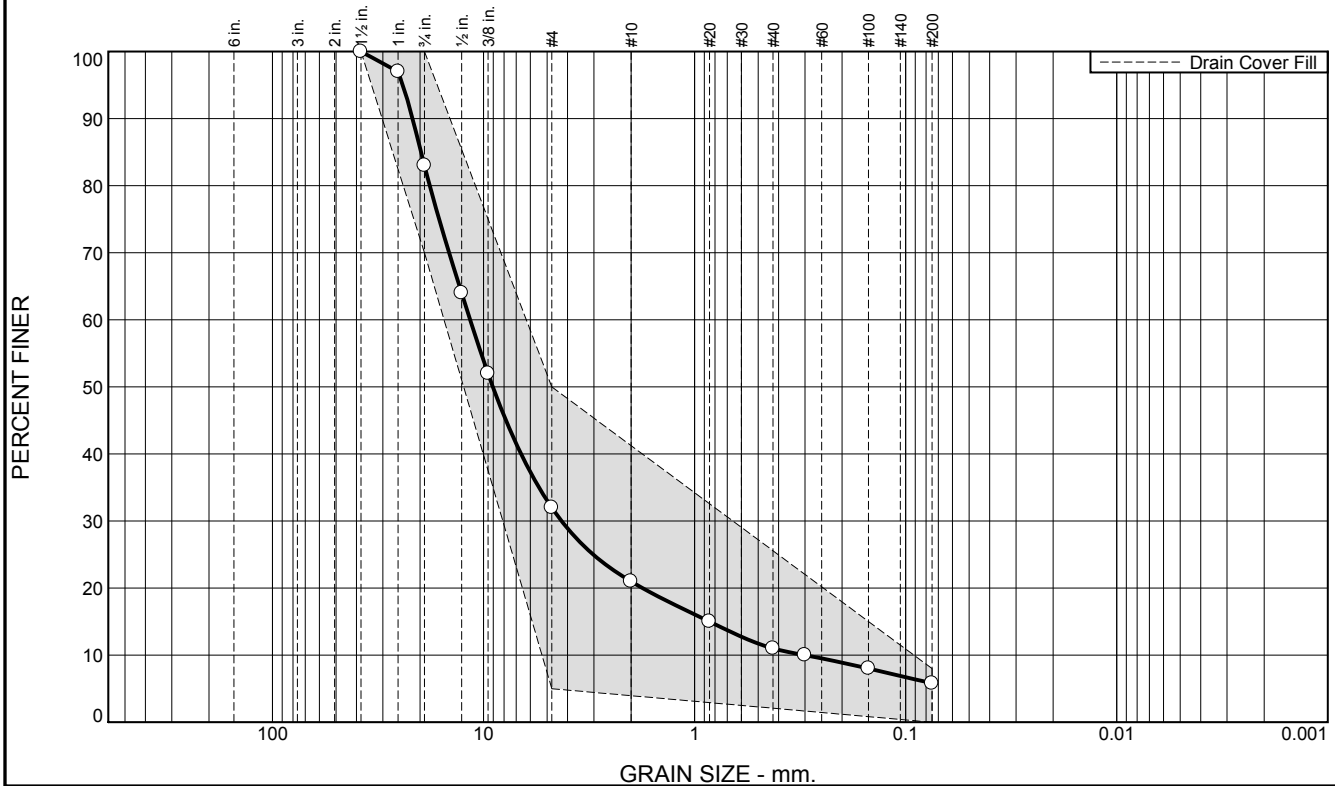
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure DCF-11-R

Tested By: Razi Molloy

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	17.0	51.0	11.0	10.0	5.2	5.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1.5"	100.0	100.0	
1.0"	97.0	70.0 - 100.0	
.75"	83.0		
.5"	64.0		
.375"	52.0	5.0 - 50.0	
#4	32.0		
#10	21.0		
#20	15.0	0.0 - 8.0	
#40	11.0		
#50	10.0		
#100	8.0		
#200	5.8		

* Drain Cover Fill

Material Description

Grey poorly graded gravel with silt and sand

Atterberg Limits

PL= NP

LL= NV

PI= NP

Classification

USCS= GP-GM

AASHTO= A-1-a

Remarks

Sample obtained from the PSSA approximate location N 54,701.8 E 34,442.2 at an elevation of 9,346.9'

Source of Sample: PSSA-Drain Cover Fill
Sample Number: DCF-12-R

Date: 10/15/2014



Client: Cripple Creek & Victor Gold Mining Company

Project: VLF Squaw Gulch

Project No: 74201125N0

Figure DCF-12-R

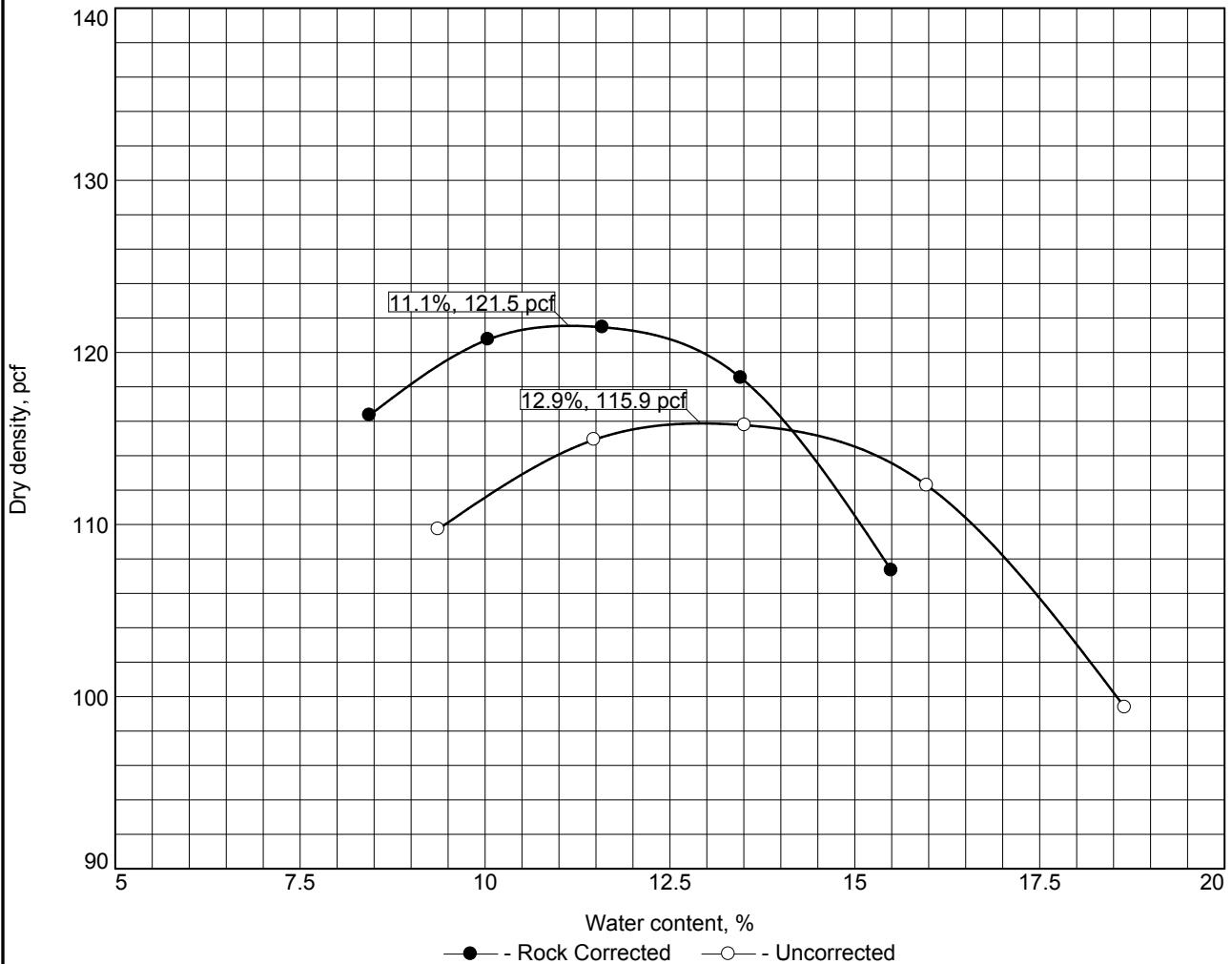
Tested By: Razi Molloy

Appendix H.2

Compaction Testing

Soil Liner Fill

COMPACTION TEST REPORT



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

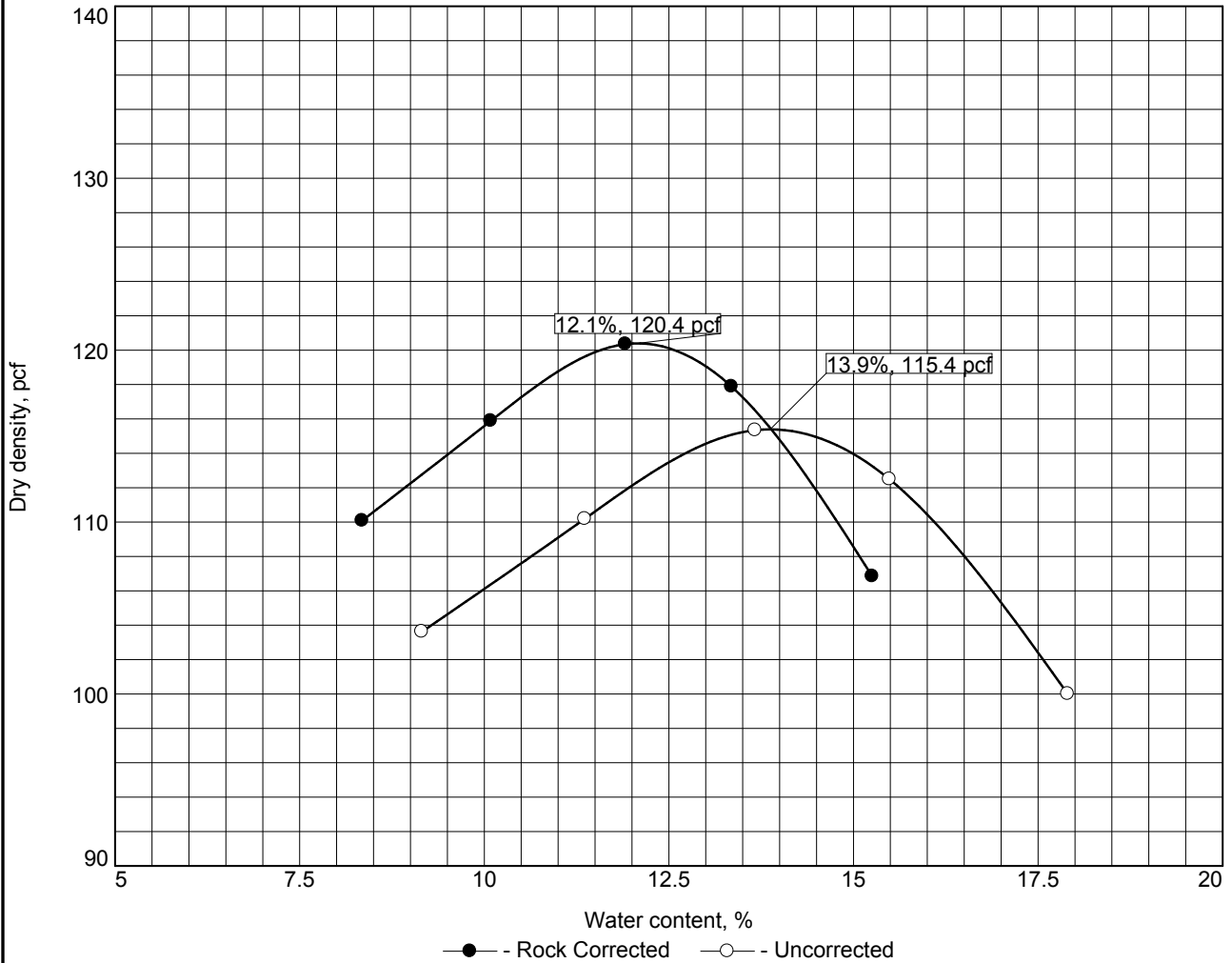
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-6(1)			34	15	24.0	34.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 121.5 pcf		115.9 pcf	Brown clayey sand with gravel
Optimum moisture = 11.1 %		12.9 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch			Remarks:
☐ Source of Sample: PSSA-Soil Liner Fill Sample Number: SLF-1-R			
			
			Figure SLF-1-R

Figure SLF-1-R

Tested By: Razi Molloy

COMPACTION TEST REPORT



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

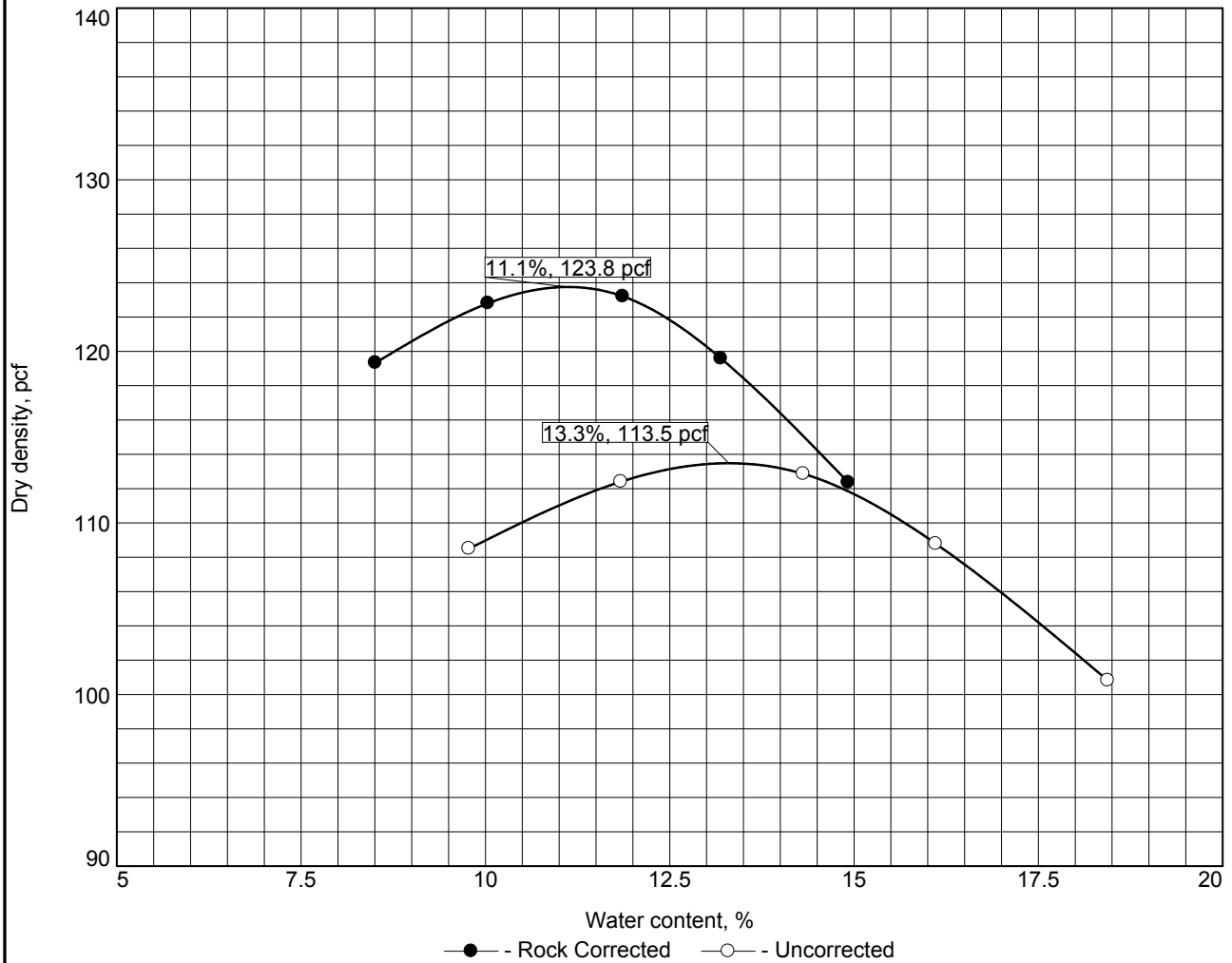
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
		A-2-6(1)			36	17	21.0	35.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 120.4 pcf		115.4 pcf	Brown clayey sand with gravel
Optimum moisture = 12.1 %		13.9 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch			Remarks:
Source of Sample: PSSA-Soil Liner Fill Sample Number: SLF-2-R			
			Figure SLF-2-R

Figure SLF-2-R

Tested By: Razi Molloy

COMPACTION TEST REPORT



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

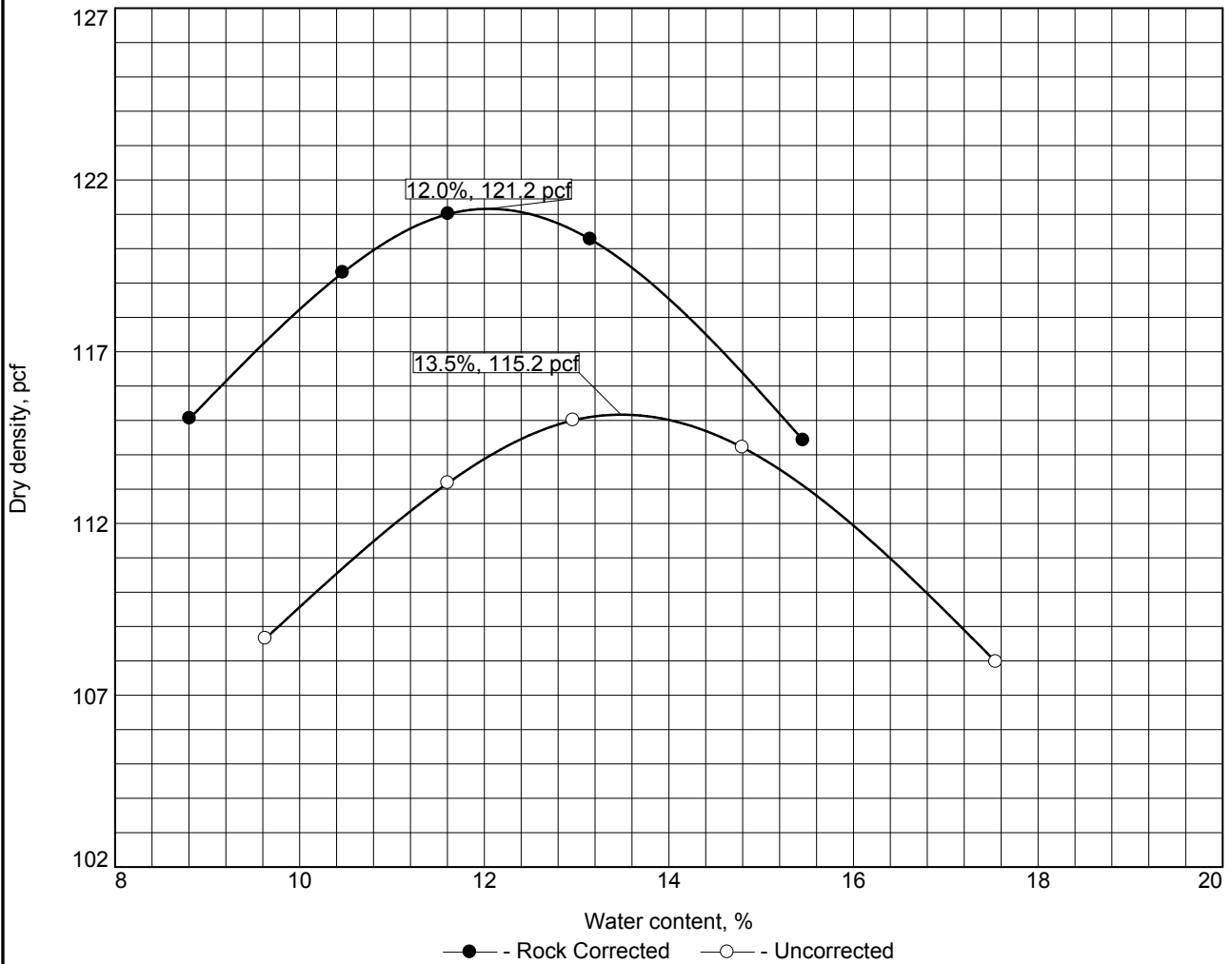
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
		A-2-6(2)			36	20	26.0	34.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 123.8 pcf		113.5 pcf	Brown clayey sand with gravel
Optimum moisture = 11.1 %		13.3 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch			Remarks:
○ Source of Sample: PSSA-Soil Liner Fill Sample Number: SLF-3-R			
			
			Figure SLF-3-R

Figure SLF-3-R

Tested By: Razi Molloy

COMPACTION TEST REPORT



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

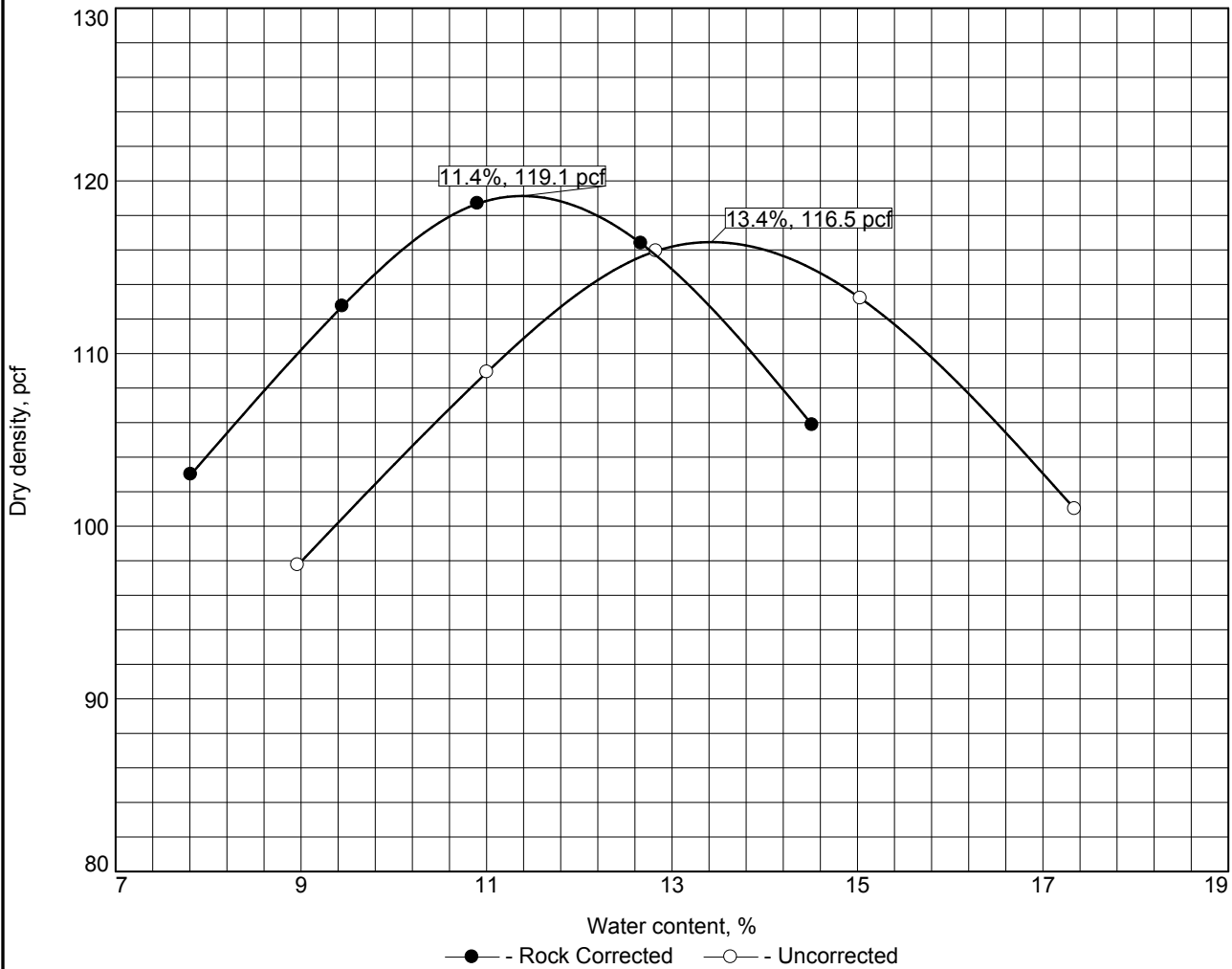
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-6(2)			34	17	16.0	39.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 121.2 pcf		115.2 pcf	Brown clayey sand with gravel
Optimum moisture = 12.0 %		13.5 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch			Remarks:
○ Source of Sample: PSSA-Soil Liner Fill Sample Number: SLF-4-R			
			Figure SLF-4-R

Figure SLF-4-R

Tested By: Razi Molloy

COMPACTION TEST REPORT



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

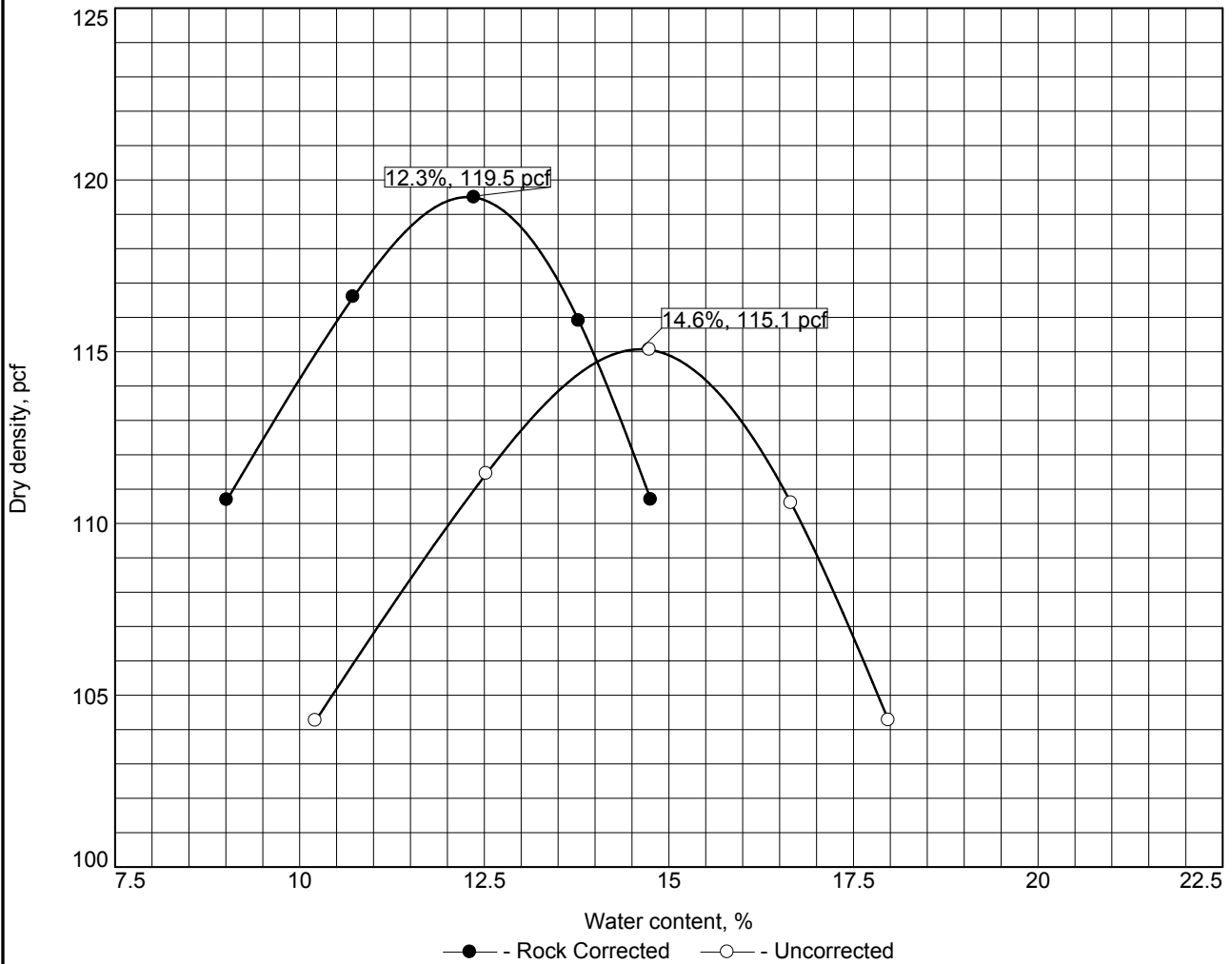
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-6(2)			36	19	20.0	35.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 119.1 pcf		116.5 pcf	Brown clayey sand with gravel
Optimum moisture = 11.4 %		13.4 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch			Remarks:
Source of Sample: PSSA-Soil Liner Fill Sample Number: SLF-5-R			
			
			Figure SLF-5-R

Figure SLF-5-R

Tested By: Razi Molloy

COMPACTION TEST REPORT



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

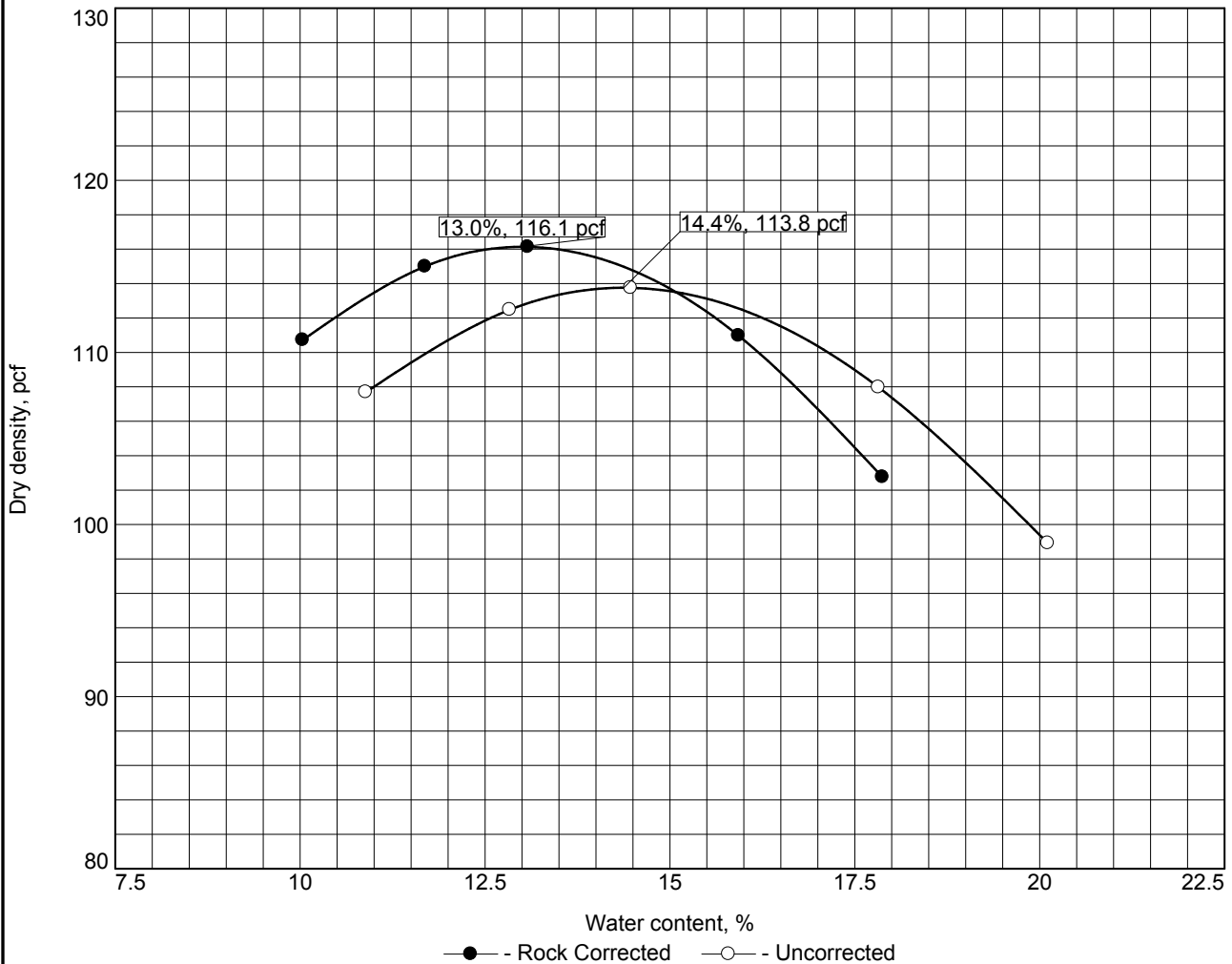
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-6(1)			37	18	26.0	32.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 119.5 pcf		115.1 pcf	Brown clayey sand with gravel
Optimum moisture = 12.3 %		14.6 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch			Remarks:
Source of Sample: PSSA-Soil Liner Fill Sample Number: SLF-6-R			
			Figure SLF-6-R

Figure SLF-6-R

Tested By: Razi Molloy

COMPACTION TEST REPORT



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

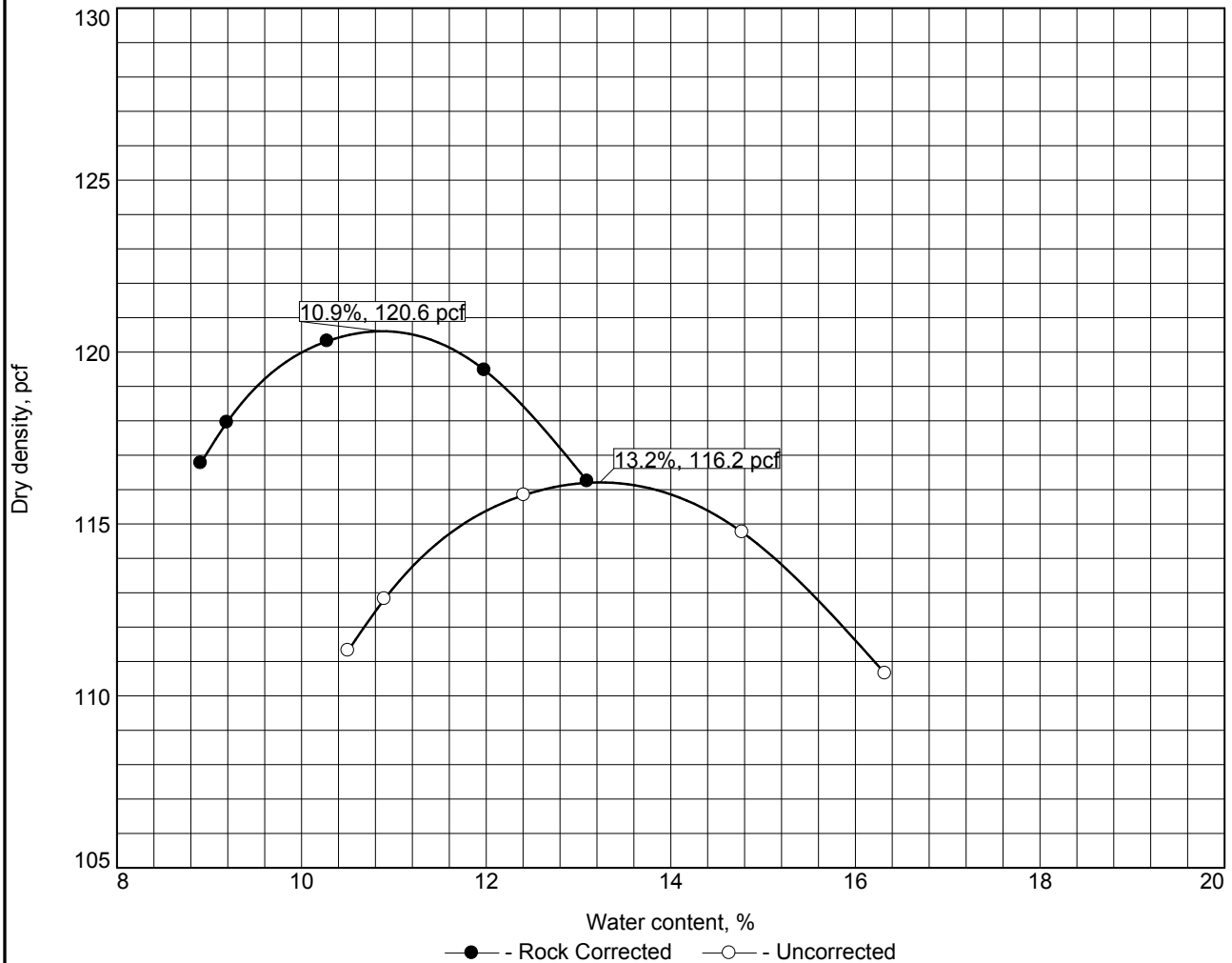
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-6(3)			36	19	15.0	38.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 116.1 pcf		113.8 pcf	Brown clayey sand with gravel
Optimum moisture = 13.0 %		14.4 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch			Remarks:
☐ Source of Sample: PSSA-Soil Liner Fill Sample Number: SLF-7-R			
			Figure SLF-7-R

Figure SLF-7-R

Tested By: Razi Molloy

COMPACTION TEST REPORT



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

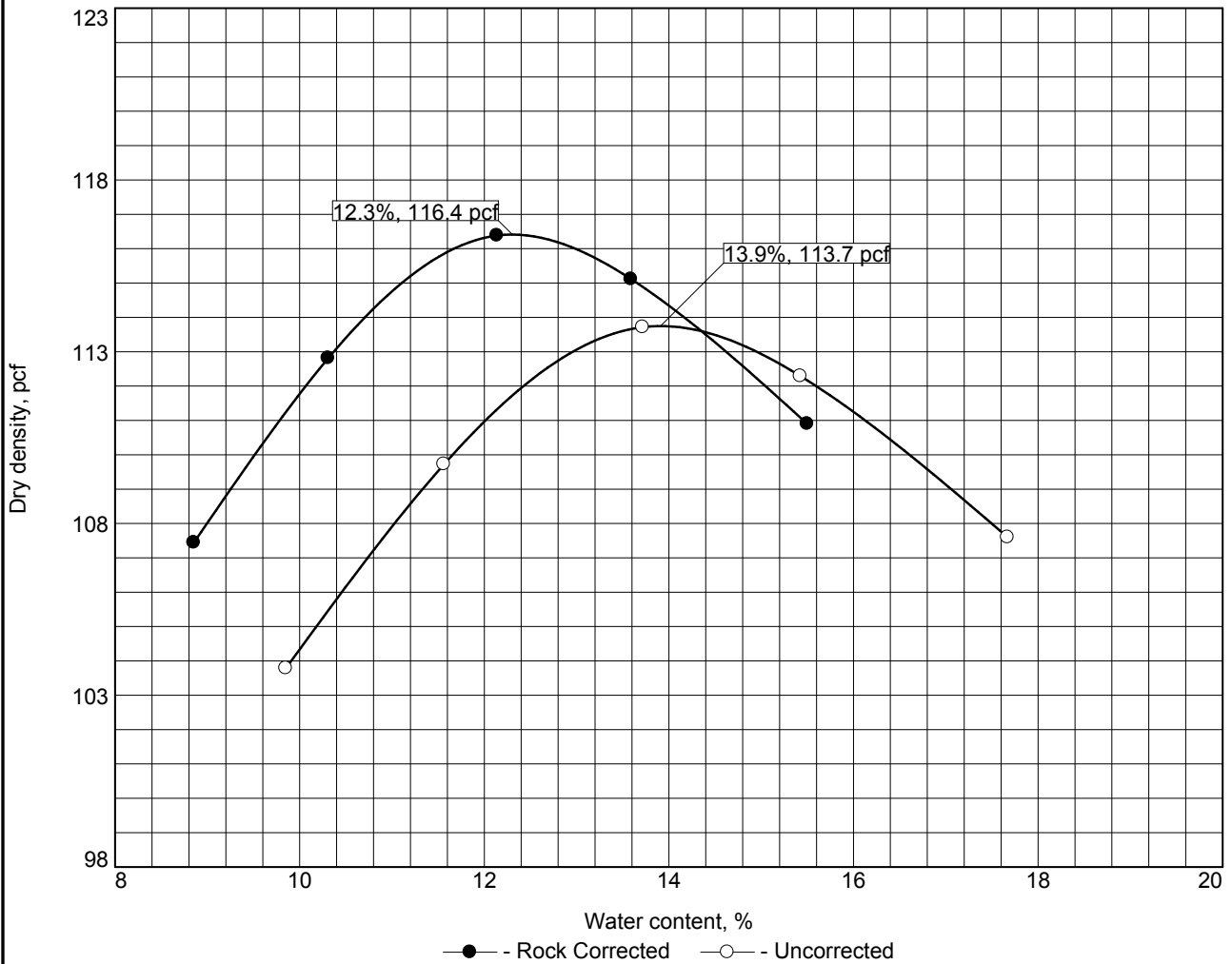
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	GM	A-2-4(0)			18	18	28.0	30.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 120.6 pcf		116.2 pcf	Brown silty gravel with sand
Optimum moisture = 10.9 %		13.2 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch			Remarks:
Source of Sample: PSSA-Soil Liner Fill Sample Number: SLF-8-R			
			Figure SLF-8-R

Figure SLF-8-R

Tested By: Razi Molloy

COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-6(2)			33	16	15.0	37.0

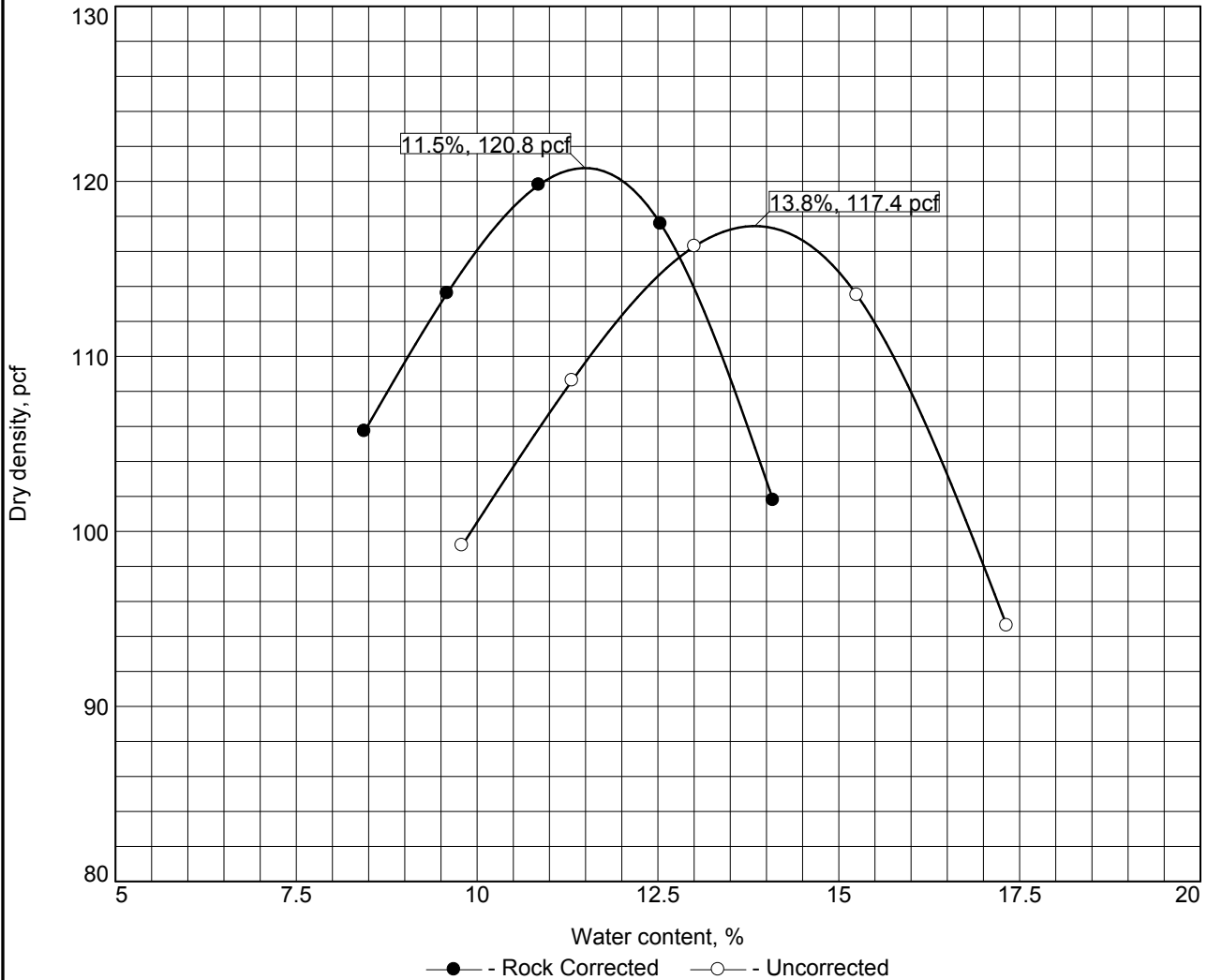
ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 116.4 pcf		113.7 pcf	Brown clayey sand with gravel
Optimum moisture = 12.3 %		13.9 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch			Remarks:
Source of Sample: PSSA-Soil Liner Fill Sample Number: SLF-9-R			
			

Figure SLF-9-R

Figure SLF-9-R

Tested By: Razi Molloy

COMPACTION TEST REPORT



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

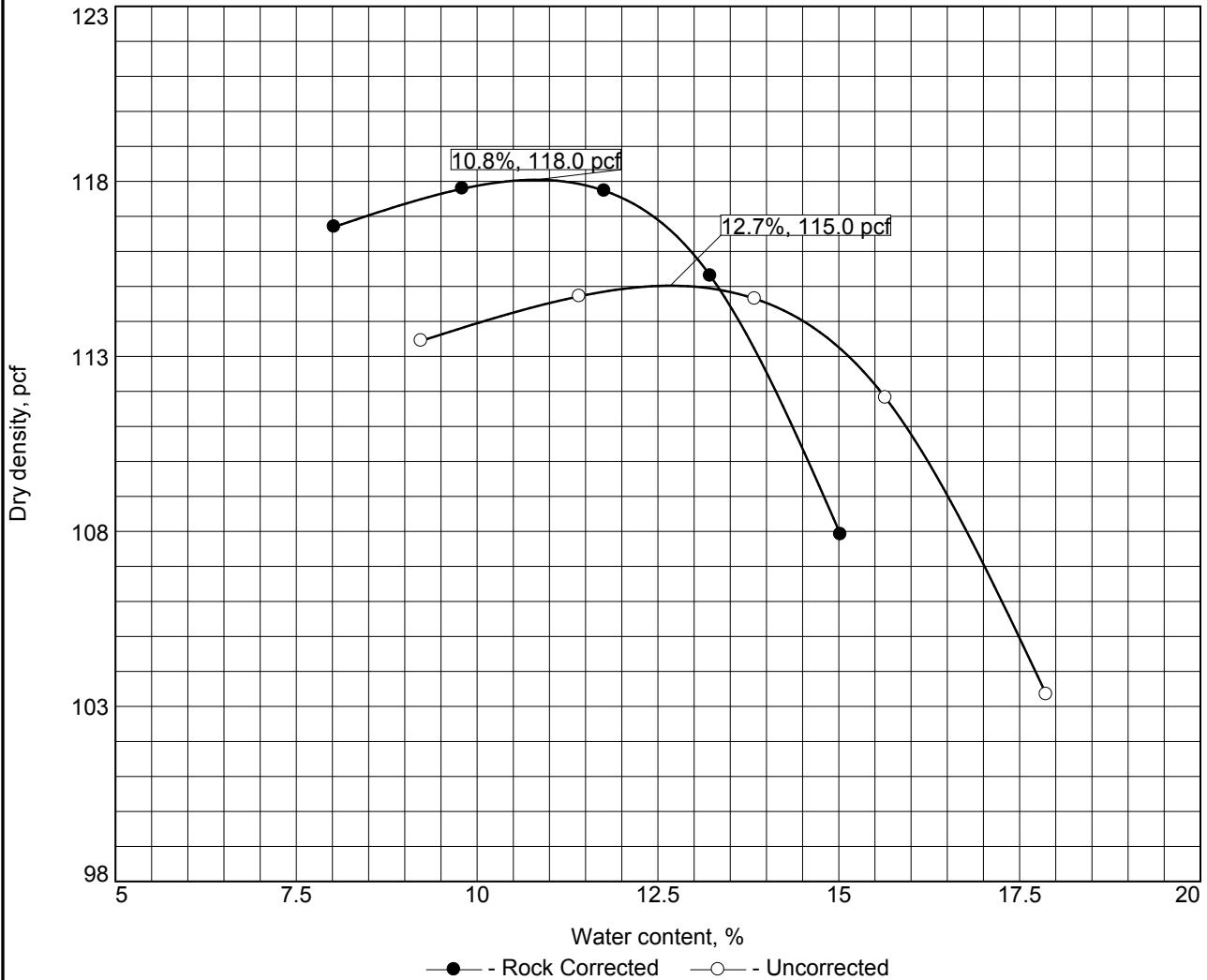
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-6(1)			34	16	25.0	34.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 120.8 pcf		117.4 pcf	Brown clayey sand with gravel
Optimum moisture = 11.5 %		13.8 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch Source of Sample: PSSA-Soil Liner Fill Sample Number: SLF-10-R			Remarks:
			

Figure SLF-10-R

Figure SLF-10-R

COMPACTION TEST REPORT



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

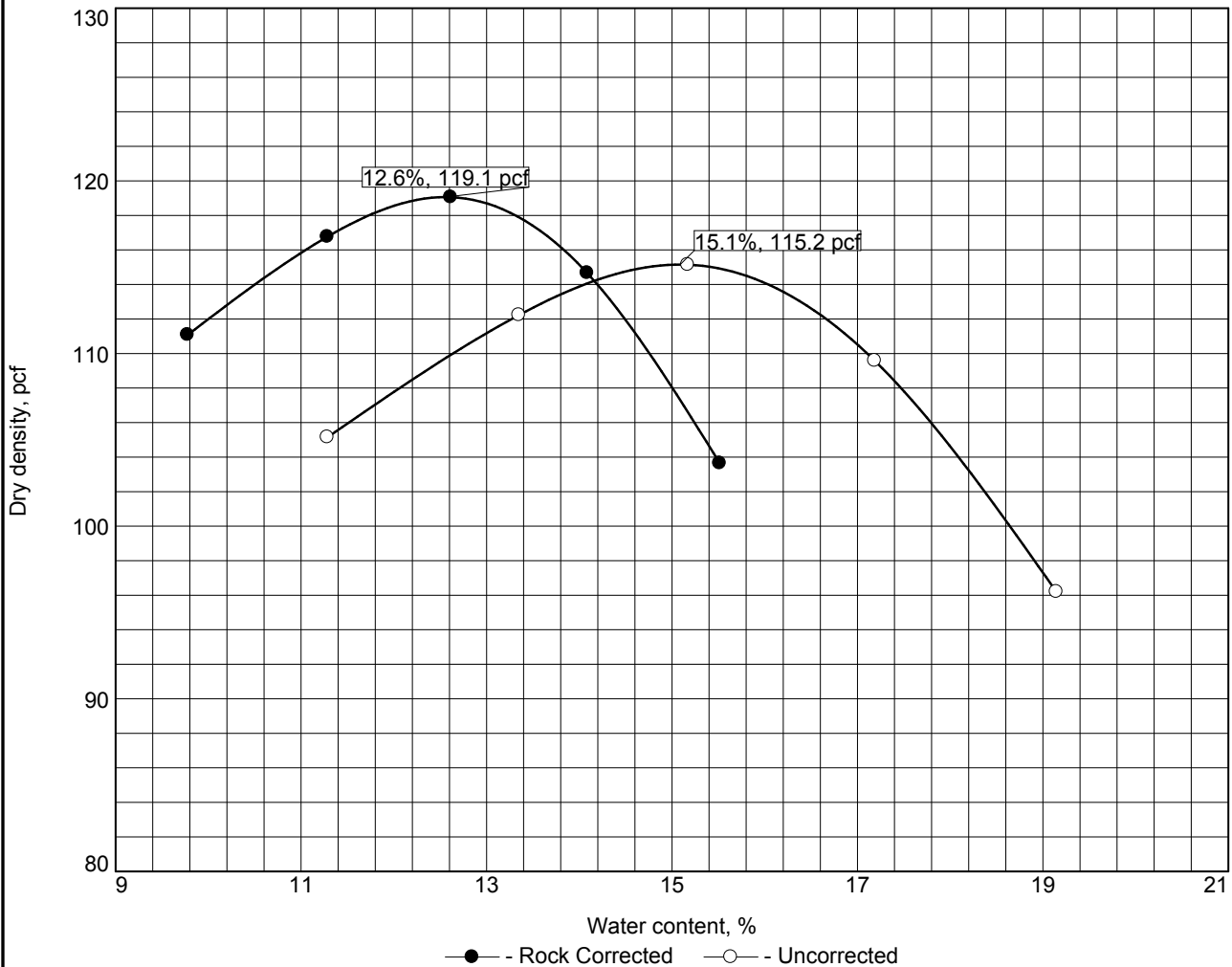
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-6(2)			34	17	19.0	36.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 118.0 pcf		115.0 pcf	Brown clayey sand with gravel
Optimum moisture = 10.8 %		12.7 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch Source of Sample: PSSA-Soil Liner Fill Sample Number: SLF-11-R			Remarks:
			

Figure SLF-11-R

Figure SLF-11-R

COMPACTION TEST REPORT



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

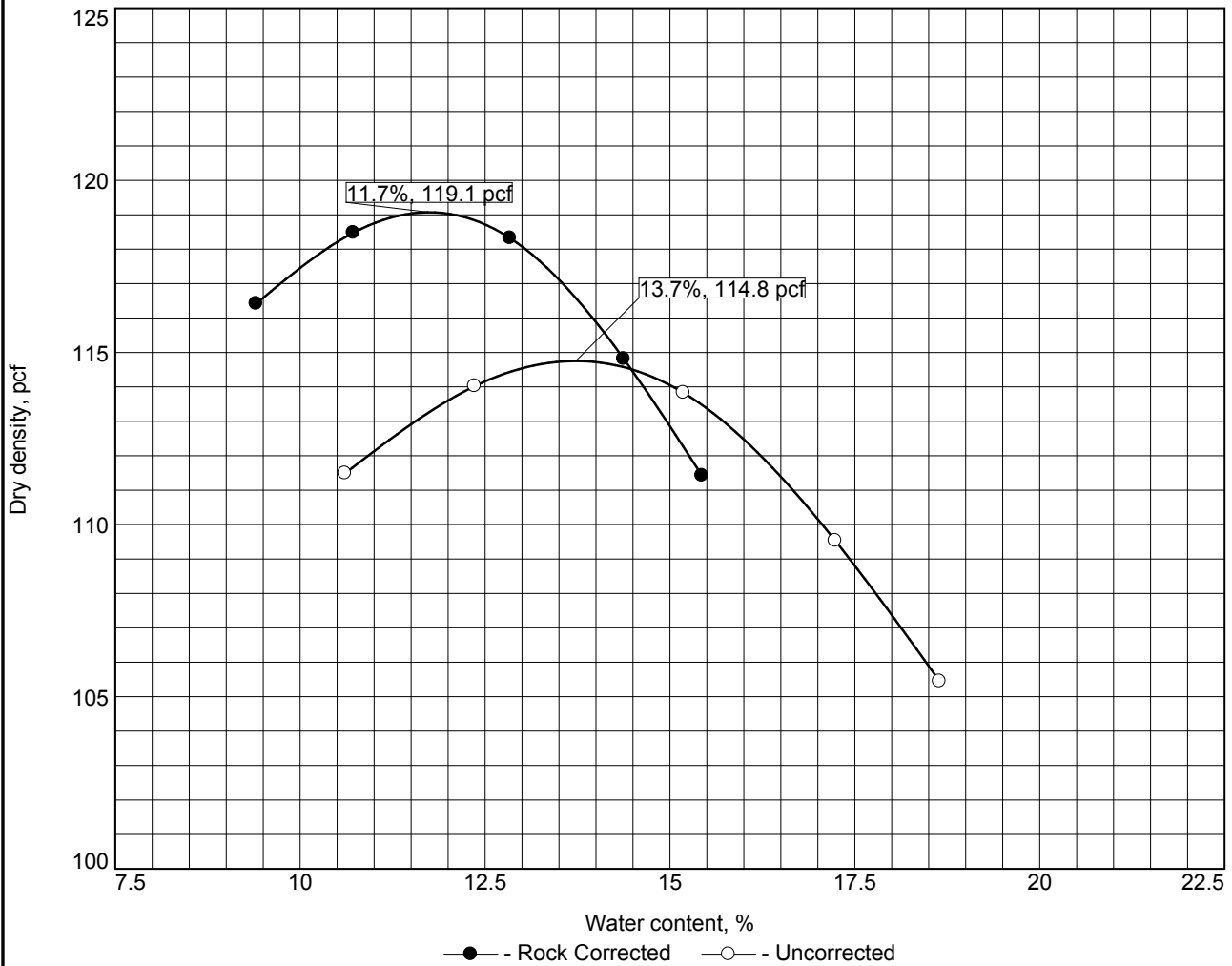
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	GC	A-2-6(1)			36	18	27.0	32.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 119.1 pcf		115.2 pcf	Brown clayey gravel with sand
Optimum moisture = 12.6 %		15.1 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch			Remarks:
Source of Sample: PSSA-Soil Liner Fill Sample Number: SLF-12-R			
			Figure SLF-12-R

Figure SLF-12-R

Tested By: Razi Molloy

COMPACTION TEST REPORT



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

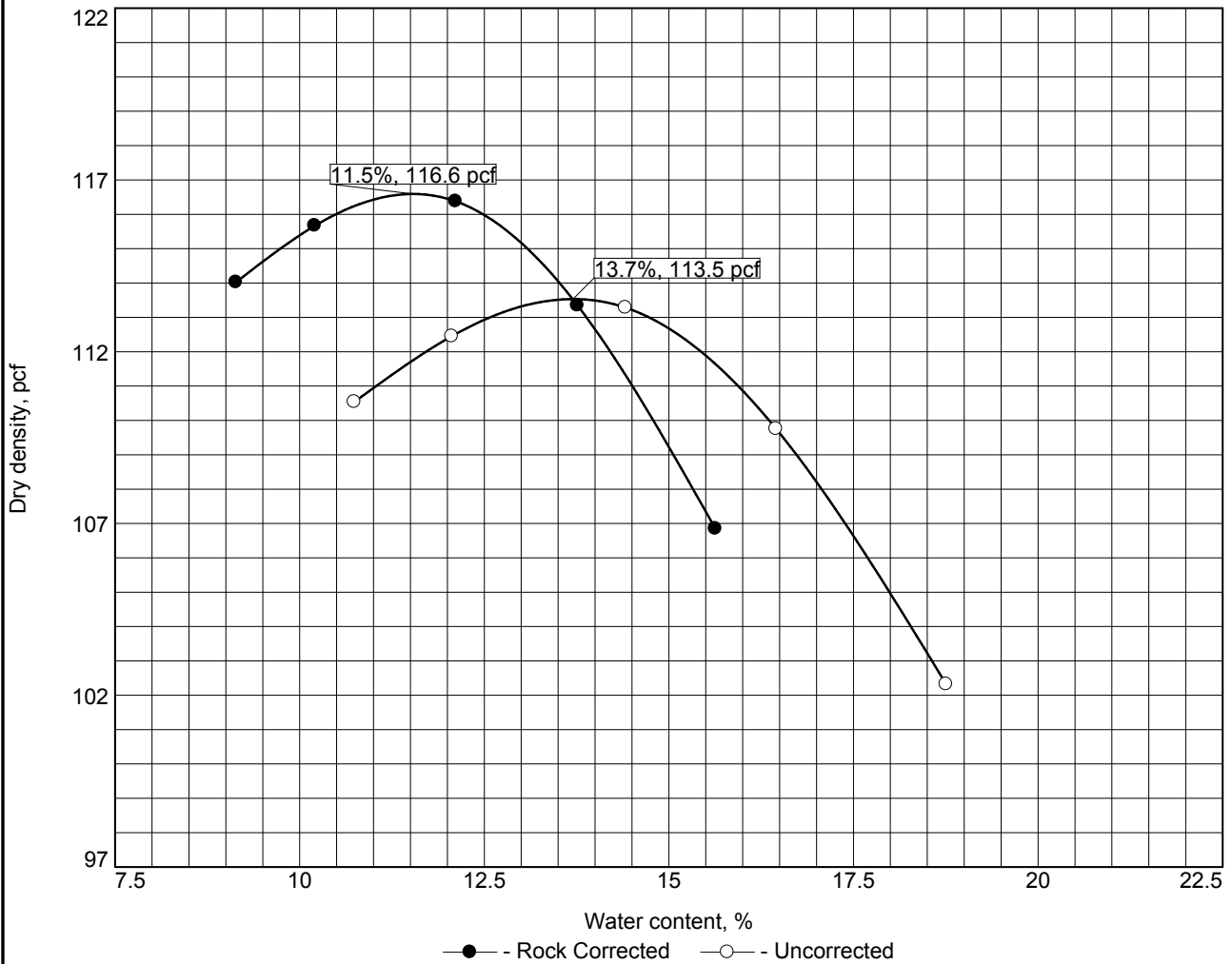
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-6(1)			36	19	25.0	31.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 119.1 pcf		114.8 pcf	Brown clayey sand with gravel
Optimum moisture = 11.7 %		13.7 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch			Remarks:
Source of Sample: PSSA-Soil Liner Fill Sample Number: SLF-13-R			
			
			Figure SLF-13-R

Figure SLF-13-R

Tested By: Razi Molloy

COMPACTION TEST REPORT



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

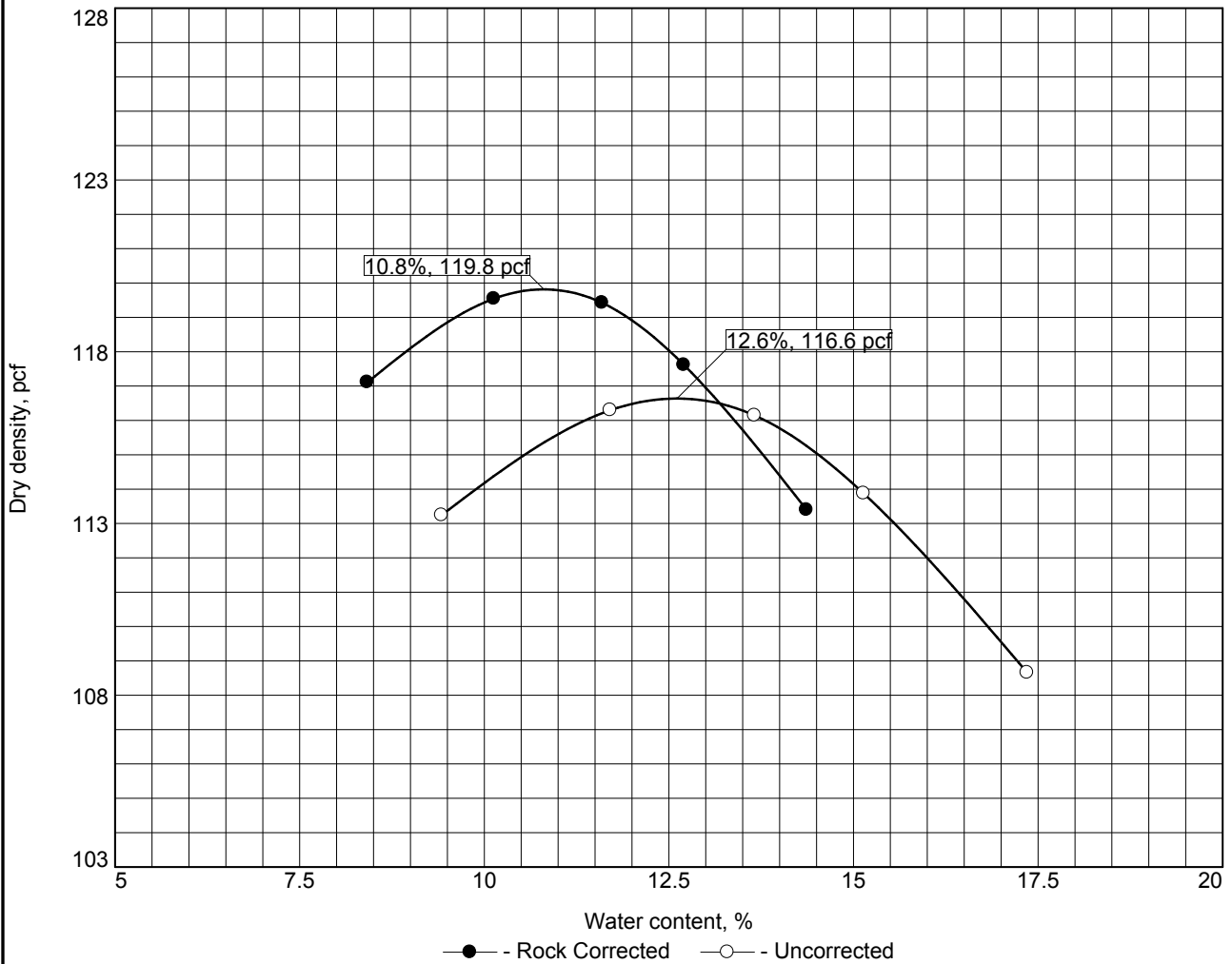
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-6(2)			36	18	19.0	35.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 116.6 pcf		113.5 pcf	Brown clayey sand with gravel
Optimum moisture = 11.5 %		13.7 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch			Remarks:
Source of Sample: PSSA-Soil Liner Fill Sample Number: SLF-14-R			
			Figure SLF-14-R

Figure SLF-14-R

Tested By: Razi Molloy

COMPACTION TEST REPORT



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

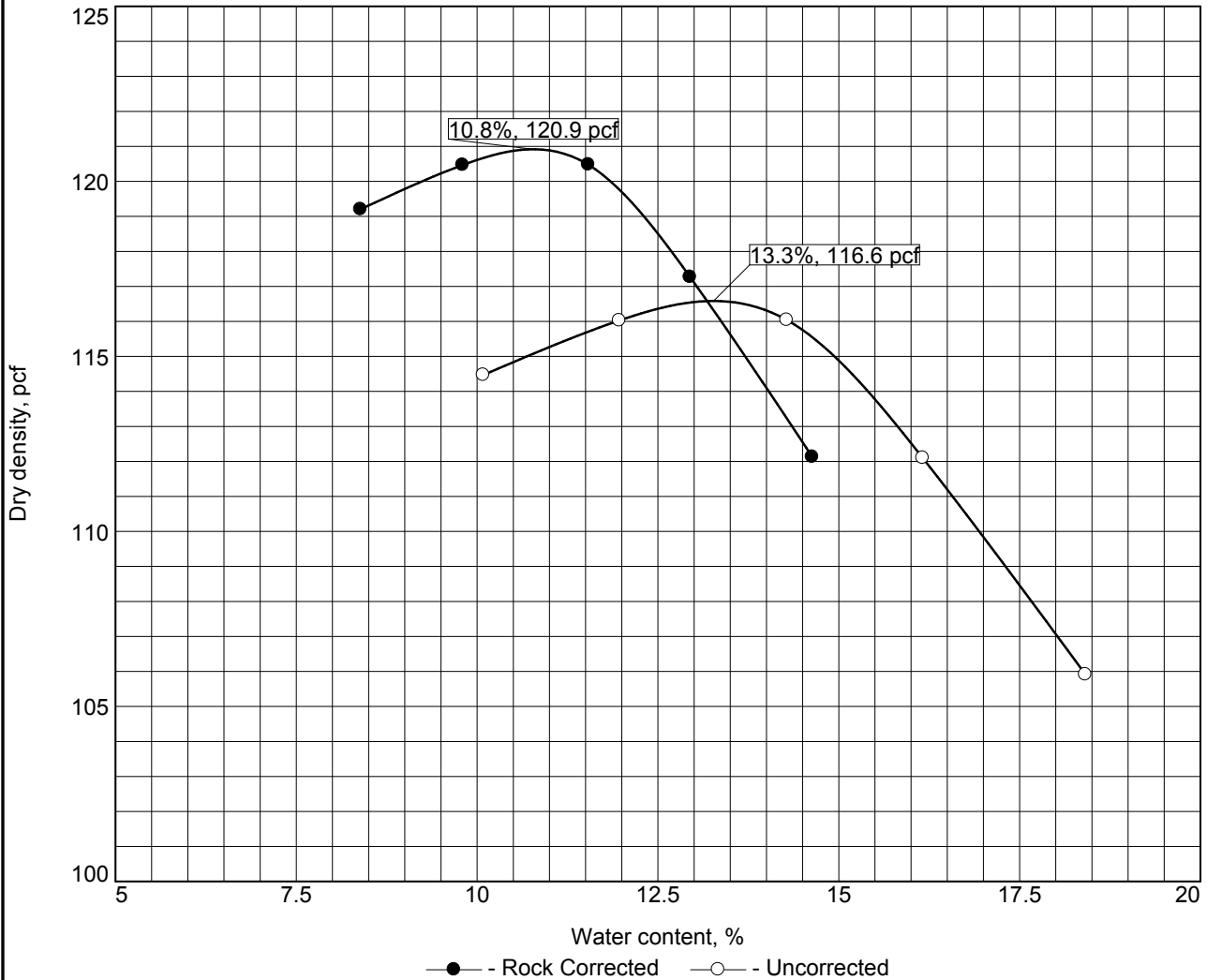
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	GC	A-2-6(2)			34	19	25.0	34.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 119.8 pcf		116.6 pcf	Brown clayey gravel with sand
Optimum moisture = 10.8 %		12.6 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch			Remarks:
Source of Sample: PSSA-Soil Liner Fill Sample Number: SLF-15-R			
			Figure SLF-15-R

Figure SLF-15-R

Tested By: Razi Molloy

COMPACTION TEST REPORT



Test specification: ASTM D 1557-07 Method B Modified
ASTM D 4718-87 Oversize Corr. Applied to Each Test Point

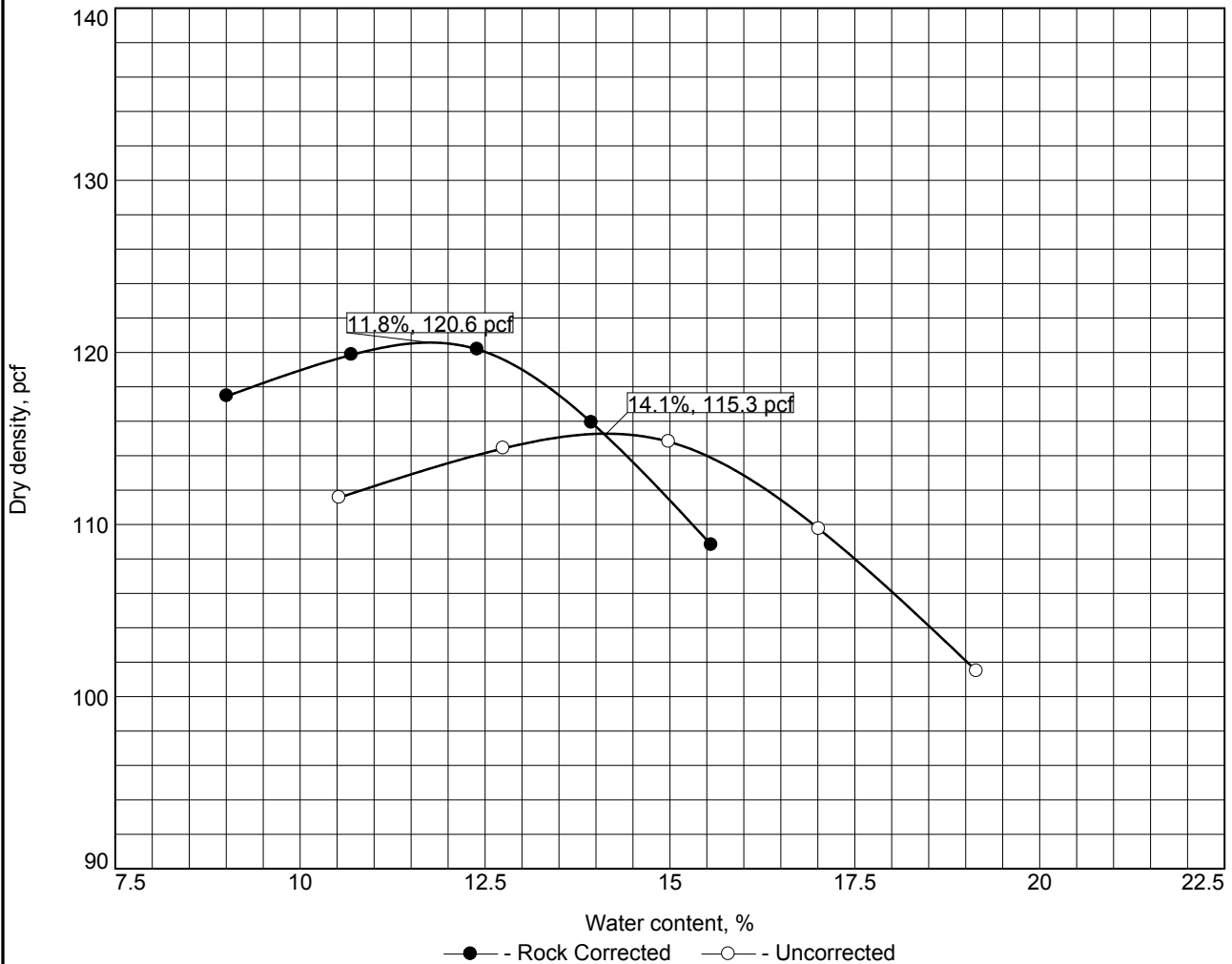
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-6(1)			34	17	25.0	35.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 120.9 pcf		116.6 pcf	Brown clayey sand with gravel
Optimum moisture = 10.8 %		13.3 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch Source of Sample: PSSA-Soil Liner Fill Sample Number: SLF-16-R			Remarks:
			

Figure SLF-16-R

Figure SLF-16-R

COMPACTION TEST REPORT



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

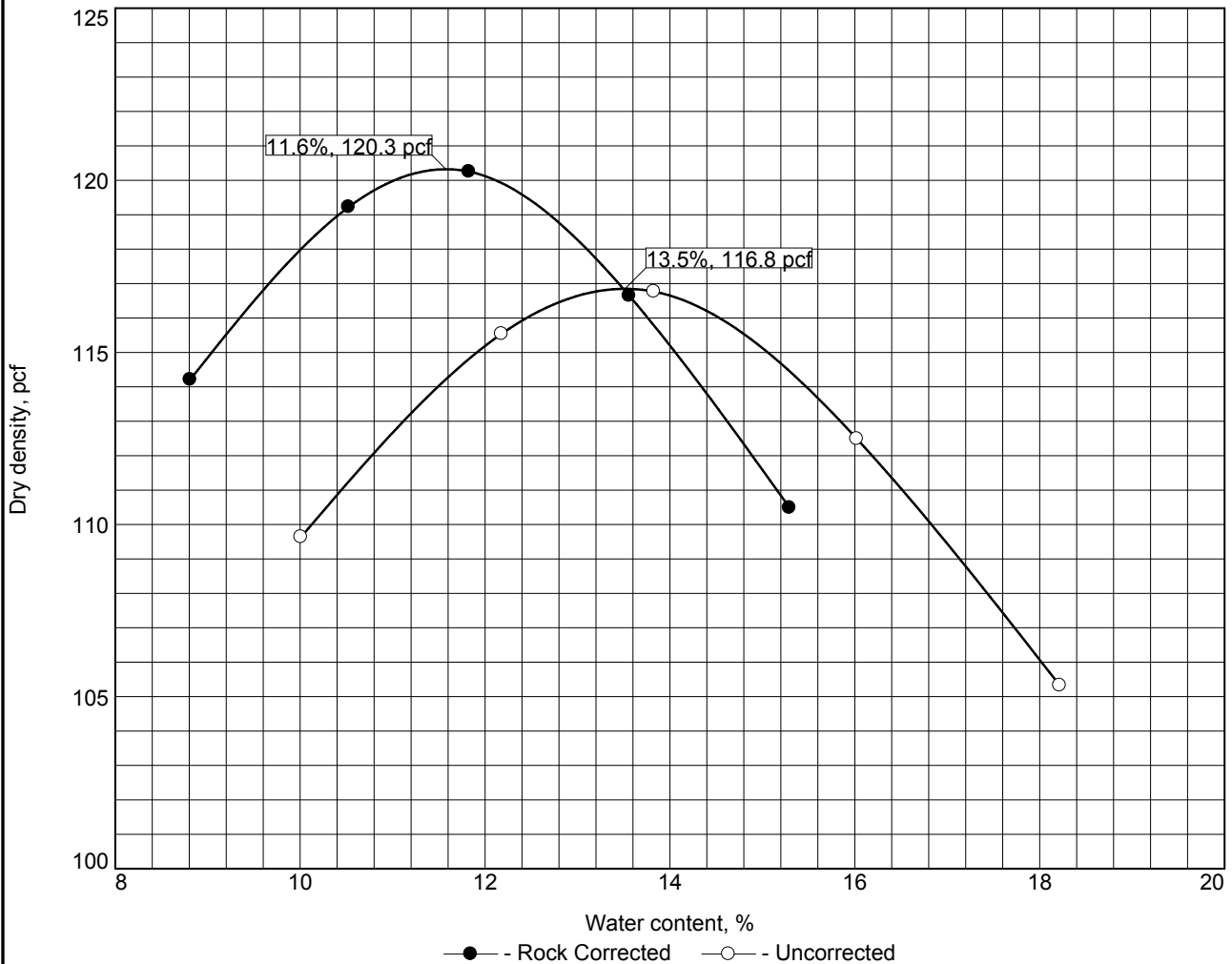
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-6(2)			35	18	24.0	35.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 120.6 pcf		115.3 pcf	Brown clayey sand with gravel
Optimum moisture = 11.8 %		14.1 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch			Remarks:
Source of Sample: PSSA-Soil Liner Fill Sample Number: SLF-17-R			
			Figure SLF-17-R

Figure SLF-17-R

Tested By: Razi Molloy

COMPACTION TEST REPORT



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

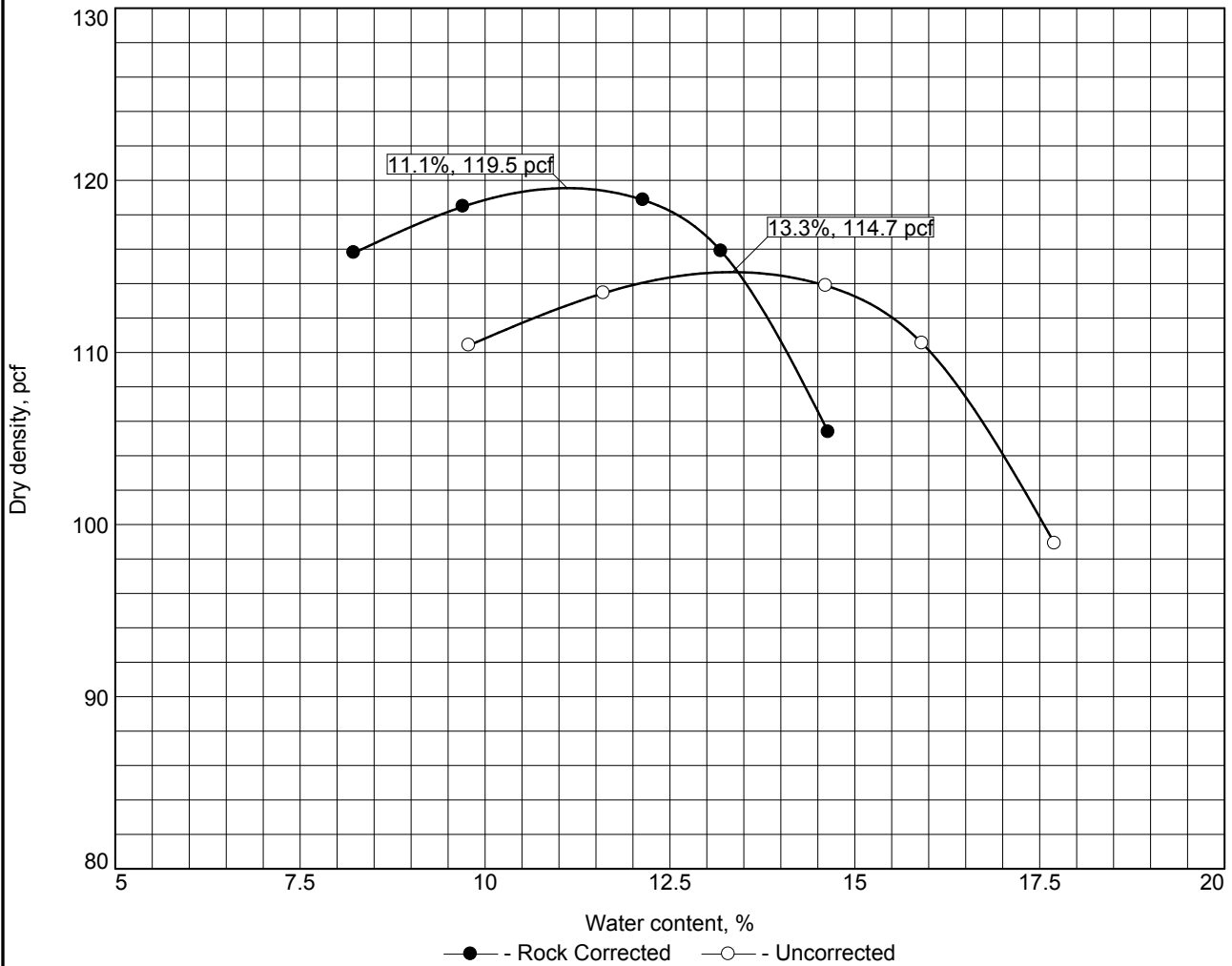
Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-2-6(2)			35	18	21.0	35.0

ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 120.3 pcf		116.8 pcf	Brown clayey sand with gravel
Optimum moisture = 11.6 %		13.5 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch			Remarks:
Source of Sample: PSSA-Soil Liner Fill Sample Number: SLF-18-R			
			Figure SLF-18-R

Figure SLF-18-R

Tested By: Razi Molloy

COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/8 in.	% < No.200
	USCS	AASHTO						
	SC	A-6(1)			31	14	19.0	36.0

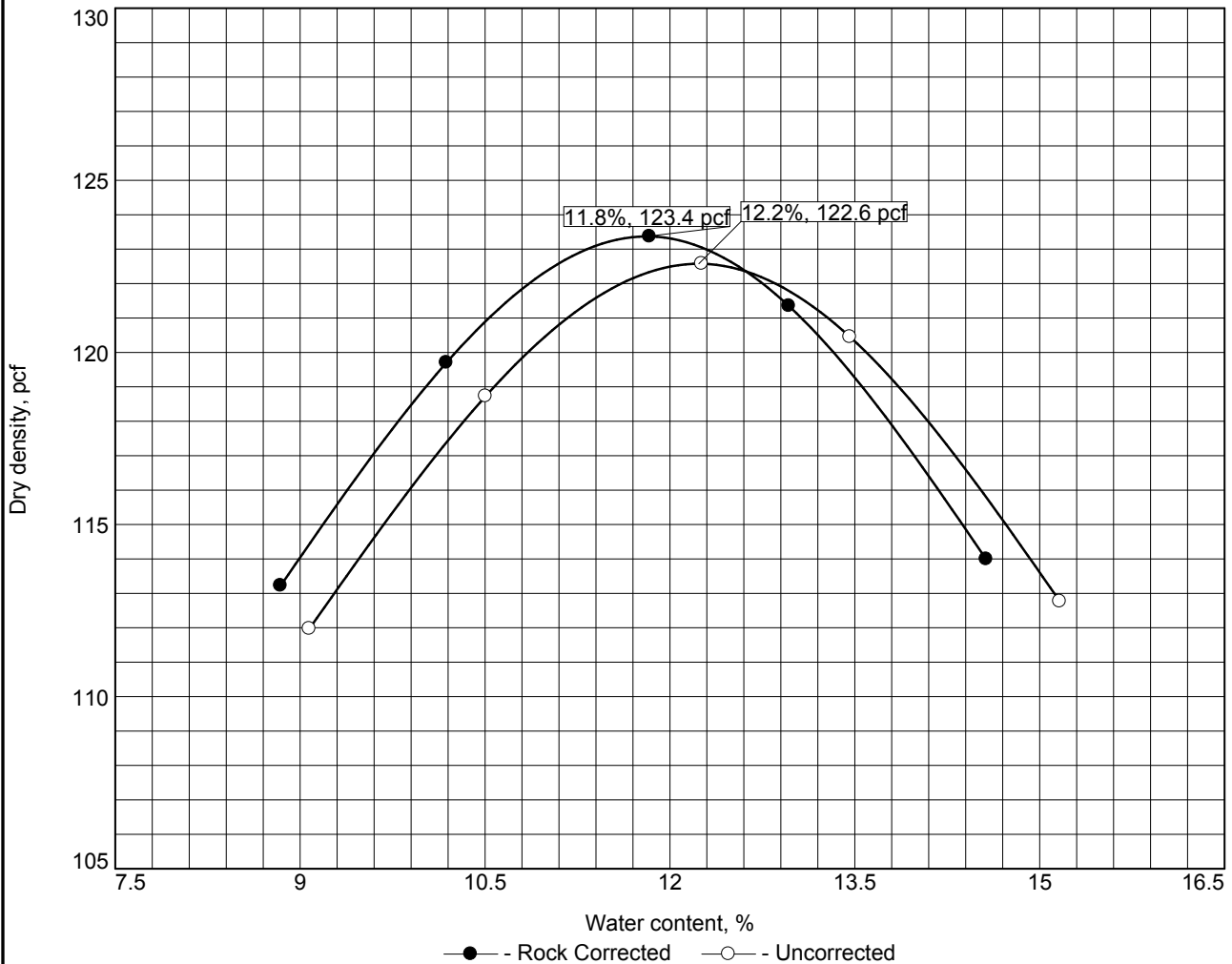
ROCK CORRECTED TEST RESULTS		UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 119.5 pcf		114.7 pcf	Brown clayey sand with gravel
Optimum moisture = 11.1 %		13.3 %	
Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch			Remarks:
Source of Sample: PSSA-Soil Liner Fill Sample Number: SLF-19-R			
			Figure SLF-19-R

Figure SLF-19-R

Tested By: Razi Molloy

Low Volume Solution Collection Fill

COMPACTION TEST REPORT



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

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > 3/4 in.	% < No.200
	USCS	AASHTO						
	GP-GM	A-1-a			NP	NP	6.0	5.7

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 123.4 pcf	122.6 pcf	Grey poorly graded gravel with silt and sand
Optimum moisture = 11.8 %	12.2 %	

Project No. 74201125N0 Client: Cripple Creek & Victor Gold Mining Company Project: VLF Squaw Gulch Source: PSSA-Low Volume Solution Collection Fill Sample No.: LVSCF-14-R	Remarks:
	

Figure LVSCF-14-R

Tested By: Razi Molloy

Appendix H.3

Soil Liner Fill Permeability Test Results



PROJECT: CC&V VLF
LOCATION: PSSA N:54812.03 E:34493.17
MATERIAL: BROWN CLAYEY SAND WITH GRAVEL
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST NUMBER: N-4

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: SLF-1-R
DATE SAMPLED: 6/5/2014

**MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING
A FLEXIBLE WALL PERMEAMETER (ASTM D5084-00)**

AVERAGE PERMEABILITY

1.04E-07 cm/sec

INITIAL LENGTH OF SPECIMEN	7.27	cm
INITIAL DIAMETER OF SPECIMEN	7.29	cm
INITIAL WATER CONTENT	10.6	%
INITIAL DRY UNIT WEIGHT	116.8	pcf
INITIAL VOLUME	303.4	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	13.3	to 16.8
FINAL LENGTH OF SPECIMEN	7.21	cm
FINAL DIAMETER OF SPECIMEN	7.29	cm
FINAL WATER CONTENT	13.2	%
FINAL DRY UNIT WEIGHT	117.8	pcf
FINAL VOLUME	300.9	cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	74%	and 95%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION	2.560	

TIME INTERVAL	K (cm/sec)	K (ft/yr)
2:25:29	1.32E-07	0.14
3:49:14	1.24E-07	0.13
5:18:58	7.85E-08	0.08
7:42:19	7.99E-08	0.08

REVIEWED BY



PROJECT: CC&V VLF
LOCATION: PSSA N:54916.23 E:34411.38
MATERIAL: BROWN CLAYEY SAND WITH GRAVEL
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST NUMBER: N-20

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: SLF-2-R
DATE SAMPLED: 6/6/2014

**MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING
A FLEXIBLE WALL PERMEAMETER (ASTM D5084-00)**

AVERAGE PERMEABILITY

1.09E-07 cm/sec

INITIAL LENGTH OF SPECIMEN	7.20	cm
INITIAL DIAMETER OF SPECIMEN	7.26	cm
INITIAL WATER CONTENT	11.5	%
INITIAL DRY UNIT WEIGHT	118.1	pcf
INITIAL VOLUME	298.1	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 16.7
FINAL LENGTH OF SPECIMEN	7.33	cm
FINAL DIAMETER OF SPECIMEN	7.36	cm
FINAL WATER CONTENT	18.2	%
FINAL DRY UNIT WEIGHT	112.9	pcf
FINAL VOLUME	311.9	cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	75%	and 102%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION	2.670	

TIME INTERVAL	K (cm/sec)	K (ft/yr)
5:17:32	1.48E-07	0.15
6:26:54	7.54E-08	0.08
8:44:36	1.34E-07	0.14
10:02:54	7.98E-08	0.08

REVIEWED BY



PROJECT: CC&V VLF
LOCATION: PSSA N:55006.07 E:34105.63
MATERIAL: BROWN CLAYEY SAND WITH GRAVEL
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST NUMBER: N-15

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: SLF-3-R
DATE SAMPLED: 6/9/2014

**MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING
A FLEXIBLE WALL PERMEAMETER (ASTM D5084-00)**

AVERAGE PERMEABILITY

7.02E-07 cm/sec

INITIAL LENGTH OF SPECIMEN	7.29	cm
INITIAL DIAMETER OF SPECIMEN	7.27	cm
INITIAL WATER CONTENT	9.2	%
INITIAL DRY UNIT WEIGHT	120.3	pcf
INITIAL VOLUME	302.6	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	12.7	to 16.0
FINAL LENGTH OF SPECIMEN	7.43	cm
FINAL DIAMETER OF SPECIMEN	7.28	cm
FINAL WATER CONTENT	22.0	%
FINAL DRY UNIT WEIGHT	117.7	pcf
FINAL VOLUME	309.3	cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	47%	and 105%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION	3.110	

TIME INTERVAL	K (cm/sec)	K (ft/yr)
1:37:43	9.70E-07	1.00
2:13:41	1.67E-07	0.17
3:24:23	1.05E-06	1.09
3:47:16	6.23E-07	0.64

REVIEWED BY



PROJECT: CC&V VLF
LOCATION: PSSA N:54715.96 E:34079.61
MATERIAL: BROWN CLAYEY SAND WITH GRAVEL
SAMPLE SOURCE: SOIL LINER FILL
SAMPLE PREP: N-16A

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: SLF-4-R
DATE SAMPLED: 6/10/2014

**MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING
A FLEXIBLE WALL PERMEAMETER (ASTM D5084-00)**

AVERAGE PERMEABILITY

4.50E-08 cm/sec

INITIAL LENGTH OF SPECIMEN	7.26 cm
INITIAL DIAMETER OF SPECIMEN	7.27 cm
INITIAL WATER CONTENT	10.5 %
INITIAL DRY UNIT WEIGHT	117.7 pcf
INITIAL VOLUME	301.4 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 14.4
FINAL LENGTH OF SPECIMEN	7.80 cm
FINAL DIAMETER OF SPECIMEN	7.34 cm
FINAL WATER CONTENT	20.0 %
FINAL DRY UNIT WEIGHT	107.5 pcf
FINAL VOLUME	330.0 cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	66% and 95%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION	2.700

TIME INTERVAL	K (cm/sec)	K (ft/yr)
2:01:52	5.39E-08	0.06
5:13:04	2.67E-08	0.03
11:41:15	7.28E-08	0.08
14:04:57	2.65E-08	0.03

REVIEWED BY



PROJECT: CC&V VLF
LOCATION: PSSA N:54744.64 E:34386.16
MATERIAL: BROWN CLAYEY SAND WITH GRAVEL
SAMPLE SOURCE: SOIL LINER FILL
SAMPLE PREP: D-31

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: SLF-5-R
DATE SAMPLED: 6/13/2014

**MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING
A FLEXIBLE WALL PERMEAMETER (ASTM D5084-00)**

AVERAGE PERMEABILITY

8.00E-08 cm/sec

INITIAL LENGTH OF SPECIMEN	7.27	cm
INITIAL DIAMETER OF SPECIMEN	7.28	cm
INITIAL WATER CONTENT	9.2	%
INITIAL DRY UNIT WEIGHT	119.1	pcf
INITIAL VOLUME	302.6	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	13.5	to 16.3
FINAL LENGTH OF SPECIMEN	7.52	cm
FINAL DIAMETER OF SPECIMEN	7.41	cm
FINAL WATER CONTENT	16.8	%
FINAL DRY UNIT WEIGHT	111.1	pcf
FINAL VOLUME	324.3	cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	66%	and 95%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION	2.600	

TIME INTERVAL	K (cm/sec)	K (ft/yr)
2:39:02	1.26E-07	0.13
4:02:56	8.23E-08	0.09
6:12:11	7.31E-08	0.08
8:39:02	3.89E-08	0.04

REVIEWED BY



PROJECT: CC&V VLF
LOCATION: PSSA N:54816.44 E:34623.02
MATERIAL: BROWN CLAYEY SAND WITH GRAVEL
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST: N-60

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: SLF-6-R
DATE SAMPLED: 6/13/2014

**MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING
A FLEXIBLE WALL PERMEAMETER (ASTM D5084-00)**

AVERAGE PERMEABILITY

5.96E-08 cm/sec

INITIAL LENGTH OF SPECIMEN	7.26	cm
INITIAL DIAMETER OF SPECIMEN	7.27	cm
INITIAL WATER CONTENT	11.1	%
INITIAL DRY UNIT WEIGHT	118.9	pcf
INITIAL VOLUME	301.4	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	13.6	to 16.8
FINAL LENGTH OF SPECIMEN	7.35	cm
FINAL DIAMETER OF SPECIMEN	7.37	cm
FINAL WATER CONTENT	17.8	%
FINAL DRY UNIT WEIGHT	114.3	pcf
FINAL VOLUME	313.6	cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	68%	and 96%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION	2.770	

TIME INTERVAL	K (cm/sec)	K (ft/yr)
9:02:22	6.54E-08	0.07
11:43:09	4.44E-08	0.05
15:42:01	6.16E-08	0.06
18:35:33	6.72E-08	0.07

REVIEWED BY



PROJECT: CC&V VLF
LOCATION: PSSA N:54560.84 E:34727.96
MATERIAL: BROWN CLAYEY SAND WITH GRAVEL
SAMPLE SOURCE: SOIL LINER FILL
SAMPLE PREP: D-43

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: SLF-7-R
DATE SAMPLED: 6/13/2014

**MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING
A FLEXIBLE WALL PERMEAMETER (ASTM D5084-00)**

AVERAGE PERMEABILITY

5.60E-08 cm/sec

INITIAL LENGTH OF SPECIMEN	7.27	cm
INITIAL DIAMETER OF SPECIMEN	7.28	cm
INITIAL WATER CONTENT	12.2	%
INITIAL DRY UNIT WEIGHT	116.1	pcf
INITIAL VOLUME	302.6	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	15.6	to 16.8
FINAL LENGTH OF SPECIMEN	7.39	cm
FINAL DIAMETER OF SPECIMEN	7.35	cm
FINAL WATER CONTENT	17.6	%
FINAL DRY UNIT WEIGHT	112.0	pcf
FINAL VOLUME	313.6	cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	75%	and 97%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION	2.670	

TIME INTERVAL	K (cm/sec)	K (ft/yr)
3:49:16	8.48E-08	0.09
5:38:35	5.15E-08	0.05
8:39:44	3.54E-08	0.04
13:05:23	5.24E-08	0.05

REVIEWED BY



PROJECT: CC&V VLF
LOCATION: PSSA N:54365.98 E:34431.76
MATERIAL: BROWN CLAYEY GRAVEL WITH SAND
SAMPLE SOURCE: SOIL LINER FILL
SAMPLE PREP: D-44

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: SLF-8-R
DATE SAMPLED: 6/13/2014

**MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING
A FLEXIBLE WALL PERMEAMETER (ASTM D5084-00)**

AVERAGE PERMEABILITY

1.57E-07 cm/sec

INITIAL LENGTH OF SPECIMEN	7.26	cm
INITIAL DIAMETER OF SPECIMEN	7.27	cm
INITIAL WATER CONTENT	11.1	%
INITIAL DRY UNIT WEIGHT	120.6	pcf
INITIAL VOLUME	301.4	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	14.5	to 16.5
FINAL LENGTH OF SPECIMEN	7.39	cm
FINAL DIAMETER OF SPECIMEN	7.37	cm
FINAL WATER CONTENT	17.4	%
FINAL DRY UNIT WEIGHT	115.3	pcf
FINAL VOLUME	315.3	cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	72%	and 97%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION	2.760	

TIME INTERVAL	K (cm/sec)	K (ft/yr)
2:06:52	2.47E-07	0.26
2:47:02	2.76E-07	0.29
3:23:14	5.28E-08	0.05
6:33:57	5.26E-08	0.05

REVIEWED BY



PROJECT: CC&V VLF
LOCATION: PSSA N:54561.09 E:34370.25
MATERIAL: BROWN CLAYEY SAND WITH GRAVEL
SAMPLE SOURCE: SOIL LINER FILL
SAMPLE PREP: D-36

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: SLF-9-R
DATE SAMPLED: 6/13/2014

**MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING
A FLEXIBLE WALL PERMEAMETER (ASTM D5084-00)**

AVERAGE PERMEABILITY

1.35E-07 cm/sec

INITIAL LENGTH OF SPECIMEN	7.25	cm
INITIAL DIAMETER OF SPECIMEN	7.29	cm
INITIAL WATER CONTENT	12.1	%
INITIAL DRY UNIT WEIGHT	116.1	pcf
INITIAL VOLUME	302.6	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	14.7	to 17.0
FINAL LENGTH OF SPECIMEN	7.29	cm
FINAL DIAMETER OF SPECIMEN	7.33	cm
FINAL WATER CONTENT	16.7	%
FINAL DRY UNIT WEIGHT	114.2	pcf
FINAL VOLUME	307.6	cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	72%	and 95%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION	2.700	

TIME INTERVAL	K (cm/sec)	K (ft/yr)
2:50:49	4.54E-07	0.47
3:12:30	4.09E-08	0.04
7:14:51	2.14E-08	0.02
15:02:16	2.32E-08	0.02

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PROJECT: CC&V VLF
LOCATION: PSSA N:55233.62 E:34706.64
MATERIAL: BROWN CLAYEY SAND WITH GRAVEL
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST: N-79

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: SLF-10-R
DATE SAMPLED: 6/19/2014

**MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING
A FLEXIBLE WALL PERMEAMETER (ASTM D5084-00)**

AVERAGE PERMEABILITY

7.57E-08 cm/sec

INITIAL LENGTH OF SPECIMEN	7.26	cm
INITIAL DIAMETER OF SPECIMEN	7.29	cm
INITIAL WATER CONTENT	12.0	%
INITIAL DRY UNIT WEIGHT	122.6	pcf
INITIAL VOLUME	303.0	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	13.9	to 16.5
FINAL LENGTH OF SPECIMEN	7.48	cm
FINAL DIAMETER OF SPECIMEN	7.32	cm
FINAL WATER CONTENT	15.3	%
FINAL DRY UNIT WEIGHT	118.1	pcf
FINAL VOLUME	314.8	cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	86%	and 96%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION	2.710	

TIME INTERVAL	K (cm/sec)	K (ft/yr)
8:39:35	1.11E-07	0.11
10:14:09	7.06E-08	0.07
12:44:04	6.44E-08	0.07
15:29:35	5.69E-08	0.06

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PROJECT: CC&V VLF
LOCATION: PSSA N:55366.3 E:34603.27
MATERIAL: BROWN CLAYEY SAND WITH GRAVEL
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST: N-53

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: SLF-11-R
DATE SAMPLED: 6/19/2014

**MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING
A FLEXIBLE WALL PERMEAMETER (ASTM D5084-00)**

AVERAGE PERMEABILITY

5.32E-08 cm/sec

INITIAL LENGTH OF SPECIMEN	7.26 cm
INITIAL DIAMETER OF SPECIMEN	7.27 cm
INITIAL WATER CONTENT	9.0 %
INITIAL DRY UNIT WEIGHT	117.8 pcf
INITIAL VOLUME	301.4 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	14.6 to 16.6
FINAL LENGTH OF SPECIMEN	7.44 cm
FINAL DIAMETER OF SPECIMEN	7.35 cm
FINAL WATER CONTENT	18.6 %
FINAL DRY UNIT WEIGHT	112.5 pcf
FINAL VOLUME	315.7 cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	53% and 96%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION	2.770

TIME INTERVAL	K (cm/sec)	K (ft/yr)
6:59:02	8.08E-08	0.08
9:01:13	3.57E-08	0.04
13:39:38	6.64E-08	0.07
16:10:42	3.00E-08	0.03

REVIEWED BY



PROJECT: CC&V VLF
LOCATION: PSSA N:55473.33 E:34731.75
MATERIAL: BROWN CLAYEY SAND WITH GRAVEL
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST: N-64

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: SLF-12-R
DATE SAMPLED: 6/19/2014

**MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING
A FLEXIBLE WALL PERMEAMETER (ASTM D5084-00)**

AVERAGE PERMEABILITY

5.61E-07 cm/sec

INITIAL LENGTH OF SPECIMEN	7.25	cm
INITIAL DIAMETER OF SPECIMEN	7.27	cm
INITIAL WATER CONTENT	11.7	%
INITIAL DRY UNIT WEIGHT	118.2	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	9.8	to 15.1
FINAL LENGTH OF SPECIMEN	7.38	cm
FINAL DIAMETER OF SPECIMEN	7.32	cm
FINAL WATER CONTENT	17.6	%
FINAL DRY UNIT WEIGHT	114.6	pcf
FINAL VOLUME	310.6	cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	70%	and 96%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION	2.770	

TIME INTERVAL	K (cm/sec)	K (ft/yr)
1:50:54	8.41E-07	0.87
2:26:07	3.03E-07	0.31
3:15:47	8.08E-07	0.84
6:14:20	2.90E-07	0.30

REVIEWED BY



PROJECT: CC&V VLF
LOCATION: PSSA N:55125.00 E:35072.53
MATERIAL: BROWN CLAYEY SAND WITH GRAVEL
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST: N-111

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: SLF-13-R
DATE SAMPLED: 6/19/2014

**MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING
A FLEXIBLE WALL PERMEAMETER (ASTM D5084-00)**

AVERAGE PERMEABILITY

4.17E-08 cm/sec

INITIAL LENGTH OF SPECIMEN	7.29	cm
INITIAL DIAMETER OF SPECIMEN	7.27	cm
INITIAL WATER CONTENT	9.8	%
INITIAL DRY UNIT WEIGHT	118.7	pcf
INITIAL VOLUME	302.6	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	13.7	to 16.6
FINAL LENGTH OF SPECIMEN	7.44	cm
FINAL DIAMETER OF SPECIMEN	7.37	cm
FINAL WATER CONTENT	16.4	%
FINAL DRY UNIT WEIGHT	113.1	pcf
FINAL VOLUME	317.4	cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	75%	and 105%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION	2.530	

TIME INTERVAL	K (cm/sec)	K (ft/yr)
1:22:07	7.03E-08	0.07
3:50:58	3.04E-08	0.03
9:37:57	3.25E-08	0.03
15:05:09	3.37E-08	0.03

REVIEWED BY



PROJECT: CC&V VLF
LOCATION: PSSA N:54697.46 E:34594.4
MATERIAL: BROWN CLAYEY SAND WITH GRAVEL
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST: N-90A

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: SLF-14-R
DATE SAMPLED: 6/19/2014

**MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING
A FLEXIBLE WALL PERMEAMETER (ASTM D5084-00)**

AVERAGE PERMEABILITY

5.25E-08 cm/sec

INITIAL LENGTH OF SPECIMEN	7.27	cm
INITIAL DIAMETER OF SPECIMEN	7.28	cm
INITIAL WATER CONTENT	10.5	%
INITIAL DRY UNIT WEIGHT	116.1	pcf
INITIAL VOLUME	302.6	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	7.38	cm
FINAL DIAMETER OF SPECIMEN	7.47	cm
FINAL WATER CONTENT	20.2	%
FINAL DRY UNIT WEIGHT	108.6	pcf
FINAL VOLUME	323.4	cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	59%	and 95%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION	2.770	

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



PROJECT: CC&V VLF
LOCATION: PSSA N:56018.41 E:35088.59
MATERIAL: BROWN CLAYEY SAND WITH GRAVEL
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST: N-114

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: SLF-15-R
DATE SAMPLED: 6/30/2014

**MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING
A FLEXIBLE WALL PERMEAMETER (ASTM D5084-00)**

AVERAGE PERMEABILITY

4.82E-08 cm/sec

INITIAL LENGTH OF SPECIMEN	7.26 cm
INITIAL DIAMETER OF SPECIMEN	7.26 cm
INITIAL WATER CONTENT	10.7 %
INITIAL DRY UNIT WEIGHT	119.4 pcf
INITIAL VOLUME	300.5 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	14.9 to 16.9
FINAL LENGTH OF SPECIMEN	7.34 cm
FINAL DIAMETER OF SPECIMEN	7.38 cm
FINAL WATER CONTENT	17.0 %
FINAL DRY UNIT WEIGHT	114.3 pcf
FINAL VOLUME	314.0 cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	69% and 95%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION	2.720

TIME INTERVAL	K (cm/sec)	K (ft/yr)
6:55:12	7.31E-08	0.08
9:06:21	2.73E-08	0.03
15:00:28	4.48E-08	0.05
18:37:57	4.76E-08	0.05

REVIEWED BY



PROJECT: CC&V VLF
LOCATION: PSSA N:55914.36 E:35348.66
MATERIAL: BROWN CLAYEY SAND WITH GRAVEL
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST: N-121

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: SLF-16-R
DATE SAMPLED: 7/10/2014

**MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING
A FLEXIBLE WALL PERMEAMETER (ASTM D5084-00)**

AVERAGE PERMEABILITY

4.14E-08 cm/sec

INITIAL LENGTH OF SPECIMEN	7.26	cm
INITIAL DIAMETER OF SPECIMEN	7.28	cm
INITIAL WATER CONTENT	10.1	%
INITIAL DRY UNIT WEIGHT	119.1	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	14.5	to 16.7
FINAL LENGTH OF SPECIMEN	7.42	cm
FINAL DIAMETER OF SPECIMEN	7.40	cm
FINAL WATER CONTENT	17.2	%
FINAL DRY UNIT WEIGHT	112.8	pcf
FINAL VOLUME	319.1	cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	66%	and 95%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION	2.690	

TIME INTERVAL	K (cm/sec)	K (ft/yr)
7:24:35	3.80E-08	0.04
11:42:22	4.98E-08	0.05
15:00:39	3.41E-08	0.04
19:52:14	4.38E-08	0.05

REVIEWED BY



PROJECT: CC&V VLF
LOCATION: PSSA N:55,699.3 E:34,983.3
MATERIAL: BROWN CLAYEY SAND WITH GRAVEL
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST: N-108

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: SLF-17-R
DATE SAMPLED: 7/25/2014

**MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING
A FLEXIBLE WALL PERMEAMETER (ASTM D5084-00)**

AVERAGE PERMEABILITY

6.90E-08 cm/sec

INITIAL LENGTH OF SPECIMEN	7.25	cm
INITIAL DIAMETER OF SPECIMEN	7.28	cm
INITIAL WATER CONTENT	9.9	%
INITIAL DRY UNIT WEIGHT	119.5	pcf
INITIAL VOLUME	301.8	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	12.5	to 12.1
FINAL LENGTH OF SPECIMEN	7.39	cm
FINAL DIAMETER OF SPECIMEN	7.34	cm
FINAL WATER CONTENT	16.4	%
FINAL DRY UNIT WEIGHT	115.3	pcf
FINAL VOLUME	312.7	cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	65%	and 95%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION	2.710	

TIME INTERVAL	K (cm/sec)	K (ft/yr)
2:31:55	7.06E-08	0.07
5:15:08	6.50E-08	0.07
8:14:16	8.74E-08	0.09
10:28:37	5.29E-08	0.05

REVIEWED BY



PROJECT: CC&V VLF
LOCATION: PSSA N:55048.31 E:34755.22
MATERIAL: BROWN CLAYEY SAND WITH GRAVEL
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST: N-145

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: SLF-18-R
DATE SAMPLED: 8/13/2014

**MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING
A FLEXIBLE WALL PERMEAMETER (ASTM D5084-00)**

AVERAGE PERMEABILITY

4.24E-08 cm/sec

INITIAL LENGTH OF SPECIMEN	7.29	cm
INITIAL DIAMETER OF SPECIMEN	7.29	cm
INITIAL WATER CONTENT	9.6	%
INITIAL DRY UNIT WEIGHT	119.7	pcf
INITIAL VOLUME	304.3	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	13.6	to 16.4
FINAL LENGTH OF SPECIMEN	7.47	cm
FINAL DIAMETER OF SPECIMEN	7.35	cm
FINAL WATER CONTENT	17.0	%
FINAL DRY UNIT WEIGHT	114.9	pcf
FINAL VOLUME	316.9	cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	63%	and 98%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION	2.710	

TIME INTERVAL	K (cm/sec)	K (ft/yr)
6:00:39	3.09E-08	0.03
11:43:41	5.38E-08	0.06
15:02:24	3.85E-08	0.04
19:42:22	4.63E-08	0.05

REVIEWED BY



PROJECT: CC&V VLF
LOCATION: PSSA N:55479.85 E:35220.12
MATERIAL: BROWN CLAYEY SAND WITH GRAVEL
SAMPLE SOURCE: SOIL LINER FILL
DENSITY TEST: N-164

JOB NO: 74201125N0
WORK ORDER NO:
LAB NO: SLF-19-R
DATE SAMPLED: 8/14/2014

**MEASUREMENT OF HYDRAULIC CONDUCTIVITY OF SATURATED POROUS MATERIALS USING
A FLEXIBLE WALL PERMEAMETER (ASTM D5084-00)**

AVERAGE PERMEABILITY

4.61E-08 cm/sec

INITIAL LENGTH OF SPECIMEN	7.23	cm
INITIAL DIAMETER OF SPECIMEN	7.30	cm
INITIAL WATER CONTENT	10.9	%
INITIAL DRY UNIT WEIGHT	119.6	pcf
INITIAL VOLUME	302.6	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	13.4	to 16.8
FINAL LENGTH OF SPECIMEN	7.39	cm
FINAL DIAMETER OF SPECIMEN	7.43	cm
FINAL WATER CONTENT	16.1	%
FINAL DRY UNIT WEIGHT	112.9	pcf
FINAL VOLUME	320.4	cu.cm
DEGREE OF SATURATION (BEFORE AND AFTER TEST)	79%	and 96%
SPECIFIC GRAVITY USED IN CALCULATIONS OF SATURATION	2.600	

TIME INTERVAL	K (cm/sec)	K (ft/yr)
8:14:37	5.01E-08	0.05
11:44:47	5.31E-08	0.05
15:04:59	3.88E-08	0.04
19:41:32	4.25E-08	0.04

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