

Appendix O

Underground Working Observations

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Shaft Backfill

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Appendix O.1

**Underground Workings Summary
and Figures**

Cripple Creek & Victor Gold Mining Company
Squaw Gulch VLF Pregnant Solution Storage Area
Underground Workings Remediation Summary



IDENTIFICATION			LOCATION			WORKING DESCRIPTION									APPROXIMATE QUANTITIES						COMMENTS
HISTORICAL ID	AMES ID	CC&V WORKING ID	NORTHING	EASTING	ELEV. (feet)	DESCRIPTION	KNOWN OR UNKNOWN	DATE	APPROXIMATE OPENING SIZE	TIMBERS PRESENT	CONFIRMATION DRILLING PERFORMED	REMEDATION PERFORMED	REMEDATION TYPE	STRUCTUR E PRESENT	COARSE SHAFT BACKFILL (yd³)	STRUCTURAL FILL (yd³)	GEOGRID (ft²)	SELECT STRUCTURAL FILL (yd³)	CONCRETE (yd³)	CEMENTED ROCKFILL (yd³)	
U	6016	N/A	54,217.1	33,941.6	9,304	Horz.Drift	Unknown	2/22/2013	5X7	None	Yes	Yes	Structural Rock Backfill	None	0	1,100	0	0	0	0	Blasted rock removed, (blasted Feb. 2013) to competent rock, one excavator, FWS quantified the working prior to backfill. 3/6/13 Additional remediation performed, re-quantified. SITE REMEDIATED.
U	6017	N/A	54,188.3	33,886.7	9,308	Horz.Drift	Unknown	2/16/2013	4X6	None	Yes	Yes	Structural Rock Backfill	None	0	1,525	0	0	0	0	Excavated to 25+ feet, removed blasted rock, compacted in lifts to subgrade elevation using on-site structural fill, FWS quantified excavation. SITE REMEDIATED.
U	6019	N/A	54,306.2	34,198.5	9,360	Adit	Unknown	2/18/2013	4x6	None	Yes	Yes	Structural Rock Fill	None	0	1,153	0	0	0	0	Blasted rock removed, (blasted Feb. 2013) to competent rock, one excavator, FWS quantified the working prior to backfill. 3/6/13 Additional remediation performed, re-quantified. SITE REMEDIATED.
1105	6030	5039	54,906.8	34,260.1	9,350	Collapsed Adit Horizontal Drift	Known	2/16/2013	4X7	None	Yes	Yes	Structural Rock Backfill	None	0	1,260	0	0	0	0	Site blasted, excavation performed April 2013, removed remaining crown pillar to existing portal 50+ feet of rock above portal, FWS quantified fill volume, backfilled and compacted. SITE REMEDIATED.
U	6031	N/A	54,178.5	34,177.4	9,401	Depression	Unknown	3/11/2013	None	None	None	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Backhoe excavated into the depression approximately 10 feet and found competent material; no voids, soft materials, or timbers were found, backfilled (± 37 CY). SITE REMEDIATED.
U	6032	N/A	54,066.5	34,093.9	9,404	Depression	Unknown	3/18/2013	None	None	None	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Backhoe excavated into the depression approximately 8 feet and found competent ground; no voids, soft materials, or timbers were found during excavation. SITE REMEDIATED.
U	6033	N/A	54,336.2	34,160.9	9,333	Surface Working	Unknown	3/18/2013	None	None	None	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Shallow working, excavated to 6 to 8 feet into rock, nothing found. SITE REMEDIATED.
1107	6046	5000	54,407.5	33,947.3	9280	Collapsed Adit	Known	2/18/2013	Unknown	None	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Removed during cut of unsuitable material to weathered rock, visual observation nothing found. SITE REMEDIATED.
1108	6047	5001	54,396.9	34,104.3	9,310	Collapsed Adit	Known	2/18/2013	5X7	None	Yes	Yes	Structural Rock Backfill	None	0	1,250	0	0	0	0	Originally marked as U6019, is part of UG 6047. Tailings spoil removed during embankment fill, FWS quantified fill volume. SITE REMEDIATED.
AD1	6048	5037	54,719.9	34,167.5	9,315	Collapsed Adit	Known	4/4/2013	Unknown	None	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Collapsed adit, retaining wall found, excavated to competent rock on right and left sides and bottom, removed wall, found rock, no adit located, backfilled and compacted with ± 6 yd³ with 1 excavator. SITE REMEDIATED.
1106	6049	5038	54,804.1	34,183.7	9,340	Surface Working Horizontal Drift	Known	4/23/2013	4X5	None	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Horizontal drift ± 30 feet in length (terminated), removed crown pillar, estimated approximate ± 50 yd³ on-site structural fill placed and compacted. SITE REMEDIATED.
1114	6073	5007	54,480.9	34,531.3	9,415	Surface Working	Known	3/11/2013	6X8	None	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Surface Working, excavated to ± 22 feet into rock. Nothing found, backfilled with ± 39 yd³ with 1 excavator and compacted. SITE REMEDIATED.
1111	6075	5004	54,325.6	34,399.1	9,425	Surface Working	Known	3/11/2013	Unknown	None	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Surface Working, excavated to 10 to 15 feet, nothing found. Backfilled (±50 CY) 1 excavator. SITE REMEDIATED.
1110	6076	5003	54,411.8	34,333.3	9,370	Collapsed Shaft	Known	3/11/2013	Est. 5X8	Yes	Yes	Yes	Structural Rock Backfill	None	0	1,291	0	0	0	0	Preliminary exploration excavated to 25+ feet, timbers found. Site prepared for drilling access, drilled and blasted, excavated to competent rock , FWS quantified excavation. SITE REMEDIATED.

Cripple Creek & Victor Gold Mining Company
Squaw Gulch VLF Pregnant Solution Storage Area
Underground Workings Remediation Summary

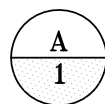
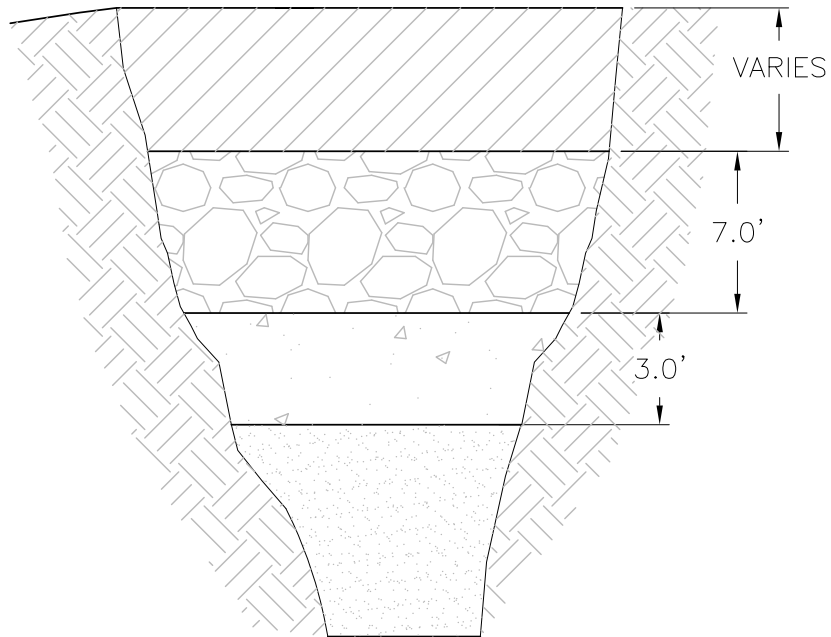


IDENTIFICATION			LOCATION			WORKING DESCRIPTION									APPROXIMATE QUANTITIES						COMMENTS
HISTORICAL ID	AMES ID	CC&V WORKING ID	NORTHING	EASTING	ELEV. (feet)	DESCRIPTION	KNOWN OR UNKNOWN	DATE	APPROXIMATE OPENING SIZE	TIMBERS PRESENT	CONFIRMATION DRILLING PERFORMED	REMEDATION PERFORMED	REMEDATION TYPE	STRUCTUR E PRESENT	COARSE SHAFT BACKFILL (yd³)	STRUCTURAL FILL (yd³)	GEOGRID (ft²)	SELECT STRUCTURAL FILL (yd³)	CONCRETE (yd³)	CEMENTED ROCKFILL (yd³)	
1109	6077	5002	54,446.2	34,299.2	9,345	Collapsed Shaft	Known	3/11/2013	Unknown	None	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Excavated to ±12 feet to competent rock, nothing found. Site backfilled (±53 CY). SITE REMEDIATED.
1112	6080	5005	54,350.9	34,428.0	9,425	Trench	Known	3/11/2013	15X25X6 +/-	None	No	Yes	Structural Rock Fill	None	0	0	0	0	0	0	Trench, excavated to 15 feet, backfilled with on-site structural fill, (±83 CY)1 Excavator. SITE REMEDIATED.
S8	6082	5036	54,900.7	34,820.0	9,395	Collapsed Shaft	Known	2/25/2014	Unknown	Yes	Yes	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Timbered shaft excavated to ± 22 feet, too narrow to determine competent rock bottom, confirmatory drilling performed and no laterals found, competent rock bottom established, backfilled and compacted. SITE REMEDIATED.
1115	6083	5017	54,537.5	34,704.4	9,460	Collapsed Adit	Known	5/9/2014	Unknown	None	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Excavated to competent rock, backfilled and compacted. SITE REMEDIATED.
1104	6087	5043	55,140.9	34,256.4	9,440	Timbered Shaft	Known	10/23/2013	Unknown	Yes	Yes	Yes	Coarse Shaft Backfill Concrete Cap, Cemented Rock Fill	None	0	0	0	0	10	55	Working located in PSSA cut slope, right abutment (south facing slope) video working, possibility of laterals. Drilled, no laterals found. Coarse shaft backfill, coned for concrete plug. SITE REMEDIATED.
1103	6088	5044	55,351.6	34,448.2	9,425	Surface Working	Known	5/15/2014	Unknown	Yes	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Excavated ± 5 feet to competent rock, backfilled and compacted. SITE REMEDIATED.
1102	6089	5045	55,369.0	34,482.5	9,430	Collapsed Adit	Known	5/31/2014	Unknown	Yes	Yes	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Excavated, found timbers. Adit trending to northeast, drilling complete, blasted working, excavated ± 25 feet to competent rock, backfilled and compacted. SITE REMEDIATED.
S6	6090	5047	55,478.4	34,767.6	9,405	Collapsed Shaft	Known	5/15/2014	Unknown	Yes	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Excavated ± 6 feet to competent rock, backfilled and compacted. SITE REMEDIATED.
1101	6091	5048	55,588.9	34,837.9	9,420	Surface Working	Known	5/16/2014	Unknown	None	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Excavated ± 8 feet to competent rock, backfilled and compacted. SITE REMEDIATED.
U	6092	UNKNWN	55,285.8	34,481.2	9,399	Shallow Shaft	Unknown	3/12/2013	Unknown	None	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Shallow shaft, excavated 6 to 8 feet into rock, nothing found, backfilled with ± 15 yd³ and compacted. SITE REMEDIATED.
U	6093	UNKNWN	55,278.3	34,545.3	9,385	3 sided rock wall	Unknown	3/12/2013	3' Rock Wall	None	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Three sided rock wall approximately 3 feet in height, excavated 5 to 6 feet into rock, nothing found, backfilled and compacted. SITE REMEDIATED.
U	6111	UNKNWN	54,774.6	34,246.5	9,301	Timbered Shaft	Unknown	4/5/2013	10x8	Yes	Yes	Yes	Coarse Shaft Backfill Concrete Cap	None	92	118	0	0	10	126	Timbered shaft, 10x8, excavated 25+ feet, (water and timbers) soft, could not locate bottom, backfill with coarse shaft backfill, concrete plug, cemented rock fill cap. SITE REMEDIATED.
U	6114	UNKNWN	55,156.8	34,930.7	9,393	Adit/Horz. Drift	Unknown	4/11/2014	4X7	Yes	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Explored the slope where the adit was trending after the cut was removed. Cat 330 excavated approximately 10' deep and 50' wide. Did not find adit. Used Electromagnetic geophysics to confirm that the adit did not continue. SITE REMEDIATED.
U	6115	UNKNWN	55,352.6	35,082.4	9,397	Adit/Horz. Drift	Unknown	4/1/2014	4X5	None	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Began excavation, performed some exploratory drilling to locate direction of adit, adit trending into slope, using hammer and excavator to remove crown pillar, drilled and blasted remaining crown pillar extending into slope, excavated to competent rock. Backfilled with structural fill and compacted. SITE REMEDIATED.

Cripple Creek & Victor Gold Mining Company
Squaw Gulch VLF Pregnant Solution Storage Area
Underground Workings Remediation Summary



IDENTIFICATION			LOCATION			WORKING DESCRIPTION									APPROXIMATE QUANTITIES						COMMENTS
HISTORICAL ID	AMES ID	CC&V WORKING ID	NORTHING	EASTING	ELEV. (feet)	DESCRIPTION	KNOWN OR UNKNOWN	DATE	APPROXIMATE OPENING SIZE	TIMBERS PRESENT	CONFIRMATION DRILLING PERFORMED	REMEDATION PERFORMED	REMEDATION TYPE	STRUCTUR E PRESENT	COARSE SHAFT BACKFILL (yd³)	STRUCTURAL FILL (yd³)	GEOGRID (ft²)	SELECT STRUCTURAL FILL (yd³)	CONCRETE (yd³)	CEMENTED ROCKFILL (yd³)	
U	6156	UNKNWN	55,221.4	34,977.8	9,383	Adit/Horz. Drift	Unknown	4/6/2014	4X7	Yes	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Excavated approximately 50 linear feet to competent rock, adit removed, backfilled and compacted. SITE REMEDIATED
TP1	6166	5103	55,380.0	35,401.9	9,490	Test Pit	Known	6/11/2013	Unknown	None	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Located in cut, remediation pending. 10.29.2013-excavated to competent rock, backfilled and compacted. SITE REMEDIATED.
467	6167	5105	55,488.9	35,479.9	9,510	Timbered Shaft	Known	6/11/2013	4X6	Yes	Yes	Yes	Concrete Cap Cemented Rock Fill	None	92	10,350	0	0	378	1,822	Precast cap and grate removed, timbers present, located in cut, remediation pending. Connected to #U6273, located within the ADR haul route, 9/11/2013, exposed shaft, backfilled with coarse shaft backfill (-12"), drilling completed 9/17/2013, site blasted 9/19/2013 excavation completed, concrete cap placed in adjoining "room/stopes", cemented rock fill, structural fill placed and compacted. SITE REMEDIATED.
U	6233	N/A	54,638.6	33,974.2	9,347	Shallow Shaft	Unknown	4/23/2013	Unknown	None	None	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Shallow Shaft, located in the right abutment of the SH67 relocation, excavated to 12 feet in hard rock, site backfilled (± 13 CY). SITE REMEDIATED.
U	6263	N/A	53846.9	33995.5	9459	Collapsed Shaft	Unknown	7/31/2013	Unknown	None	Yes	Yes	Concrete Cap, Cemented Rock fill	None	0	0	0	0	5	70	Collapsed Shaft, excavated to approximately 28 feet into competent rock, bottom not found. Drilled 8 confirmatory borings above working nothing found. Concrete cap (complete) and cemented rock fill (complete 8/10/13). SITE REMEDIATED
421	6276	5040	54,821.3	33,907.8	9,455	Collapsed Adit	Known	4/10/2014	Unknown	Locked grate	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Packed opening full of structural fill. Extending into ½:1 slope (outside of Phase 1 construction limits). SITE REMEDIATED.
U	6280	UNKNWN	55,281.9	34,823.8	9,336	Timbered Winze/ Adit	Unknown	1/20/2014	5X7	Yes	Yes	Yes	Concrete Cap, Cemented Rock Fill, Structural Fill	None	0	3,060	0	0	35	430	10/17/2013-drilling in progress; drilling completed where accessible 10/30/2013. Adits trending north and northwest. 3 Winzes found. Work is required upslope (in cut) 254 confirmatory drill holes completed to date. FWS quantified working; Winzes concrete cap 11/19/2013. Concrete cap & concrete rock fill. SITE REMEDIATED
U	6289	UNKNWN	56,080.5	35,042.0	9,472	Timbered Shaft	Unknown	1/28/2014	Unknown	None	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Excavated to ± 8 feet to competent rock, structural rock backfill and compacted. SITE REMEDIATED.
407	6312	5046	55,492.4	34,520.9	9,460	Collapsed Adit	Known	5/16/2014	Unknown	None	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Excavated ± 3 feet to competent rock, backfilled and compacted. SITE REMEDIATED.
U	6334	UNKNWN	54,907.4	33,820.1	9,503	Timbered Drainage	Unknown	2/13/2014	Unknown	None	No	Yes	Removed in Cut	None	0	0	0	0	0	0	Partially eliminated during cut, additional timbers uncovered 8/13/2013, 70+ foot horizontal excavation. SITE REMEDIATED.
U	6391	UNKNWN	54,844.4	33,920.1	9,453	Collapsed Adit	Unknown	4/10/2014	Unknown	None	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Remediated with UG# 6276. SITE REMEDIATED.
U	6395	UNKNWN	55,657.7	35,382.5	9,447	Surface Working	Unknown	7/18/2013	Unknown	None	No	Yes	Removed in Cut	None	0	0	0	0	0	0	Removed in cut. SITE REMEDIATED.
U	6452	UNKNWN	55,310.5	35,193.1	9,415	Adit Horizontal Drift	Unknown	4/1/2014	Unknown	None	No	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Part of UG#6115. SITE REMEDIATED.
U	6557	UNKNWN	54,805.3	34,686.8	9,367	Adit Horizontal Drift	Unknown	5/27/2014	Unknown	None	Yes	Yes	Structural Rock Backfill	None	0	0	0	0	0	0	Drilled horizontal adit, excavated to competent rock, backfilled and compacted. SITE REMEDIATED.



CONCRETE REMEDIATION TYPICAL DETAIL

N.T.S.

LEGEND:



STRUCTURAL FILL



CEMENTED ROCK FILL



CONCRETE



COARSE SHAFT BACKFILL



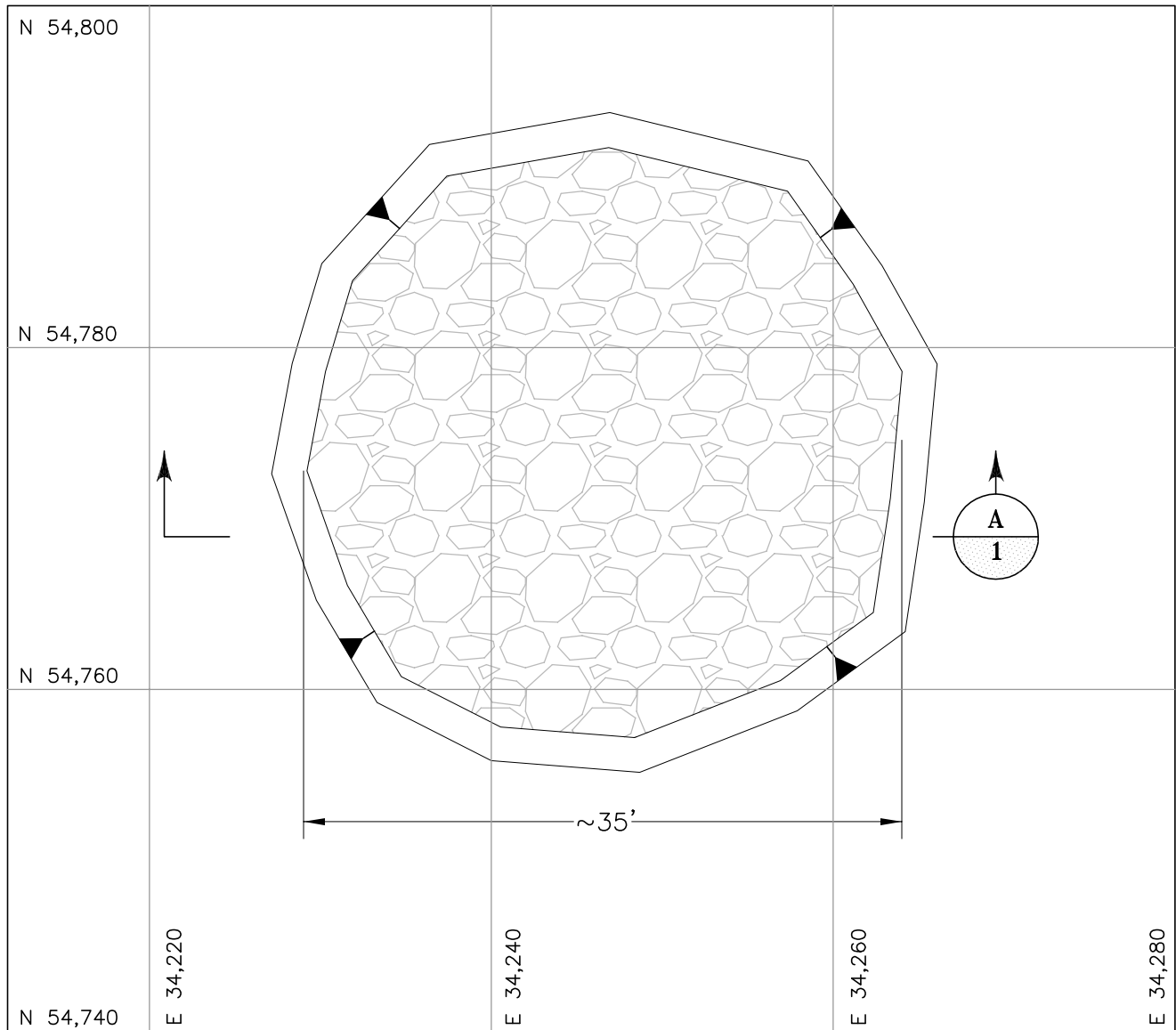
COMPETENT BEDROCK AS
APPROVED BY ENGINEER

NOTE:

1. SLOPE = 0.5H:1V MINIMUM.

CLIENT CRIPPLE CREEK & VICTOR GOLD MINING COMPANY				
PROJECT SQUAW GULCH VLF PREGNANT SOLUTION STORAGE AREA				
TITLE CONCRETE REMEDIATION OF UNDERGROUND WORKING DETAIL SECTION				
DESIGNED BY MN	CHECKED BY SGR	DATE 07/10/14		
DRAWN BY RBR	APPROVED BY ALM	REV 0		
CADD FILENAME VLF UG CONC		FIGURE No. 1		





QUANTITIES:

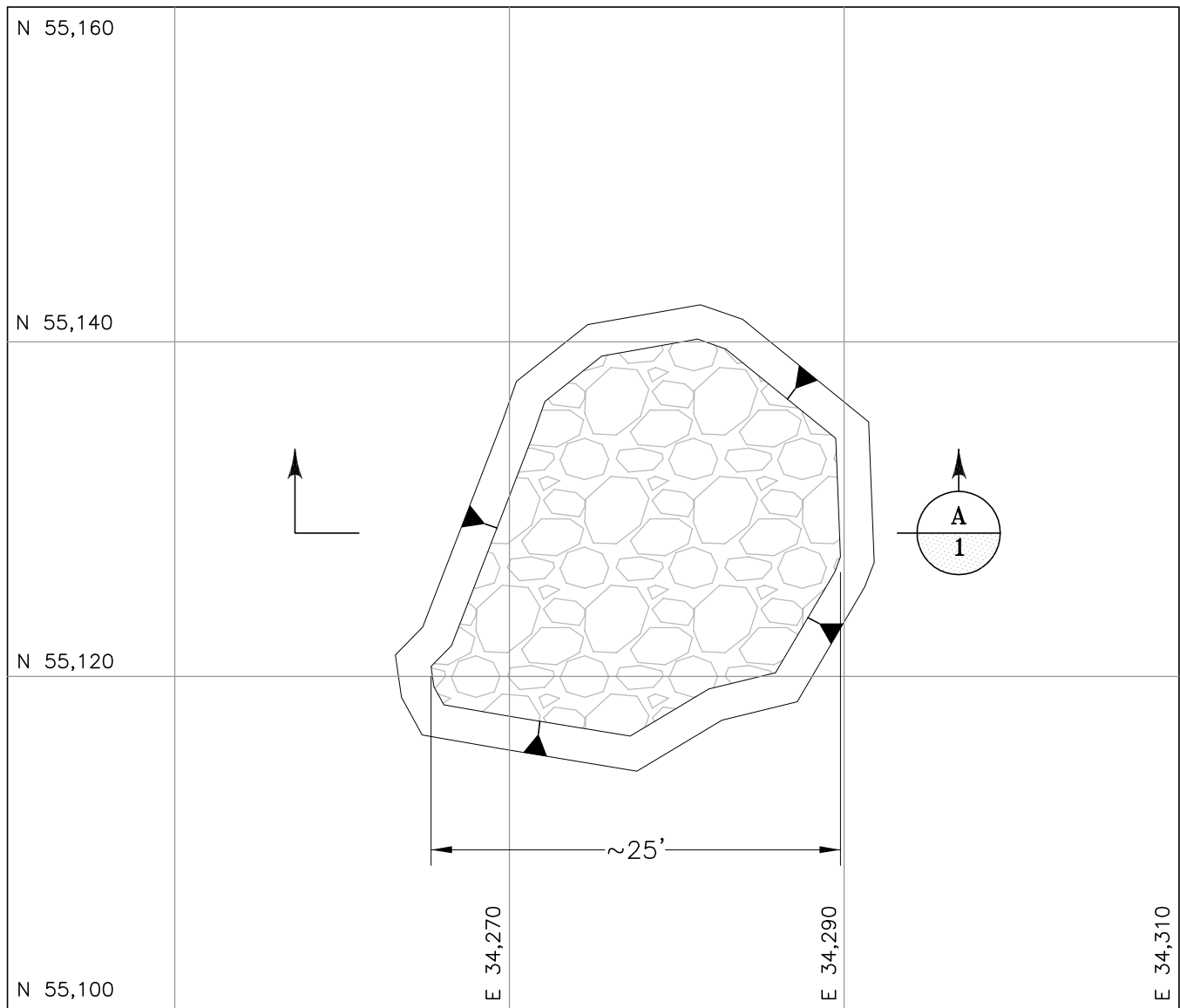
- 92 YD³ – COARSE SHAFT BACKFILL
- 118 YD³ – STRUCTURAL FILL
- 10 YD³ – CONCRETE
- 126 YD³ – CEMENTED ROCK FILL

NOTE:

1. SLOPE = 0.5H:1V MINIMUM.

CLIENT CRIPPLE CREEK & VICTOR GOLD MINING COMPANY				
PROJECT SQUAW VALLEY VLF PREGNANT SOLUTION STORAGE AREA				
TITLE CONCRETE REMEDIATION OF UNDERGROUND WORKING #6111 PLAN VIEW				
DESIGNED BY	MN	CHECKED BY	SGR	DATE
DRAWN BY	RBR	APPROVED BY	ALM	07/10/14
CADD FILENAME VLF UG CONC			FIGURE No.	REV
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QUANTITIES:

10 YD³ — CONCRETE

55 YD³ — CEMENTED ROCK FILL

NOTE:

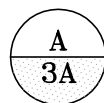
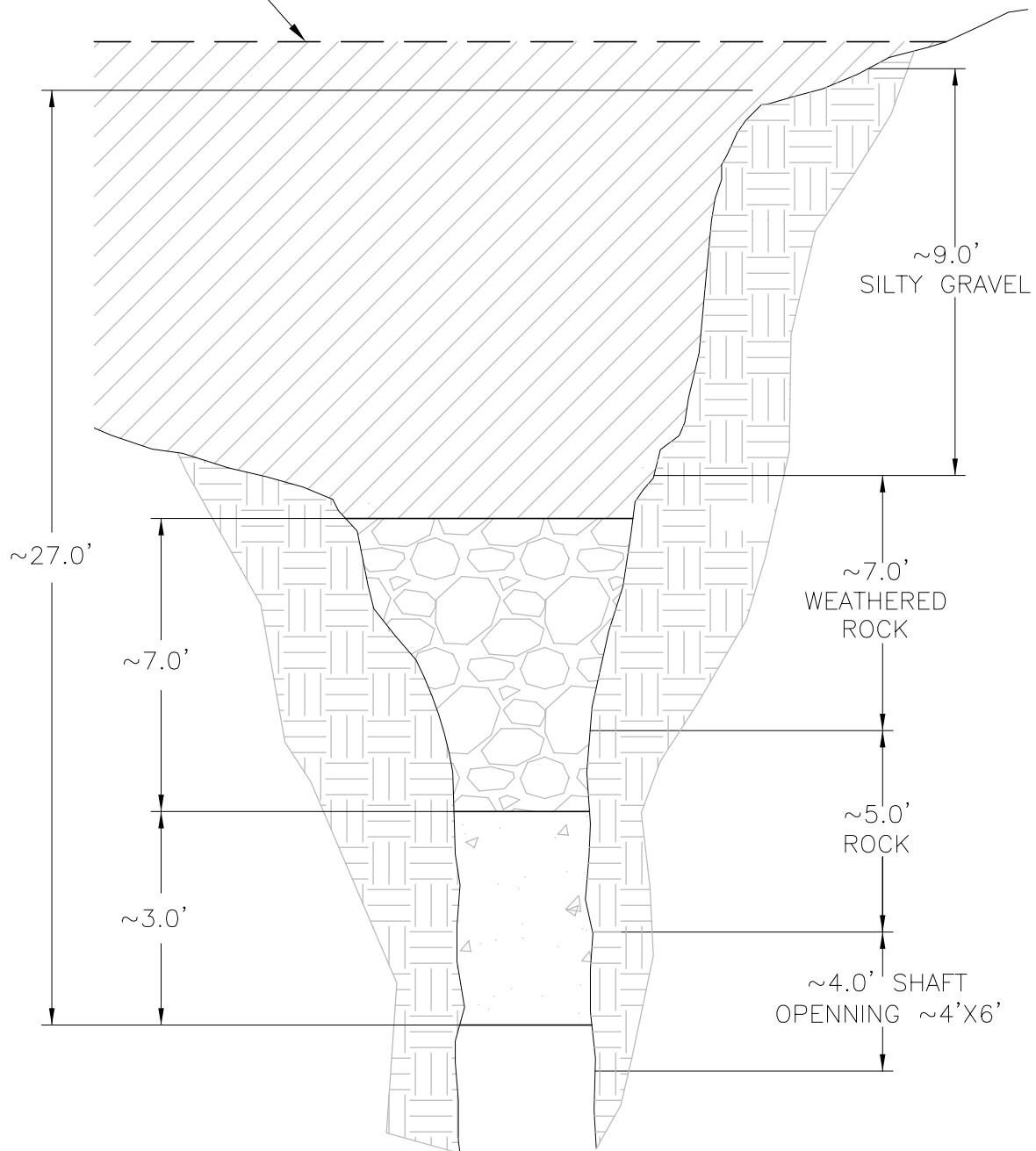
1. SLOPE = 0.5H:1V MINIMUM.



CLIENT CRIPPLE CREEK & VICTOR GOLD MINING COMPANY				
PROJECT SQUAW GULCH VLF PREGNANT SOLUTION STORAGE AREA				
TITLE CONCRETE REMEDIATION OF UNDERGROUND WORKING #6087 PLAN VIEW				
DESIGNED BY	MN	CHECKED BY	SGR	DATE
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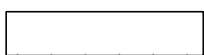
HWY 67
EMBANKMENT FILL



CONCRETE REMEDIATION DETAIL No. U6263

NTS

LEGEND:



STRUCTURAL FILL
(SEE FIGURE No 3, NOTE #3)



APPROVED CEMENTED
ROCK FILL
(SEE FIGURE No. 3, NOTE #4)



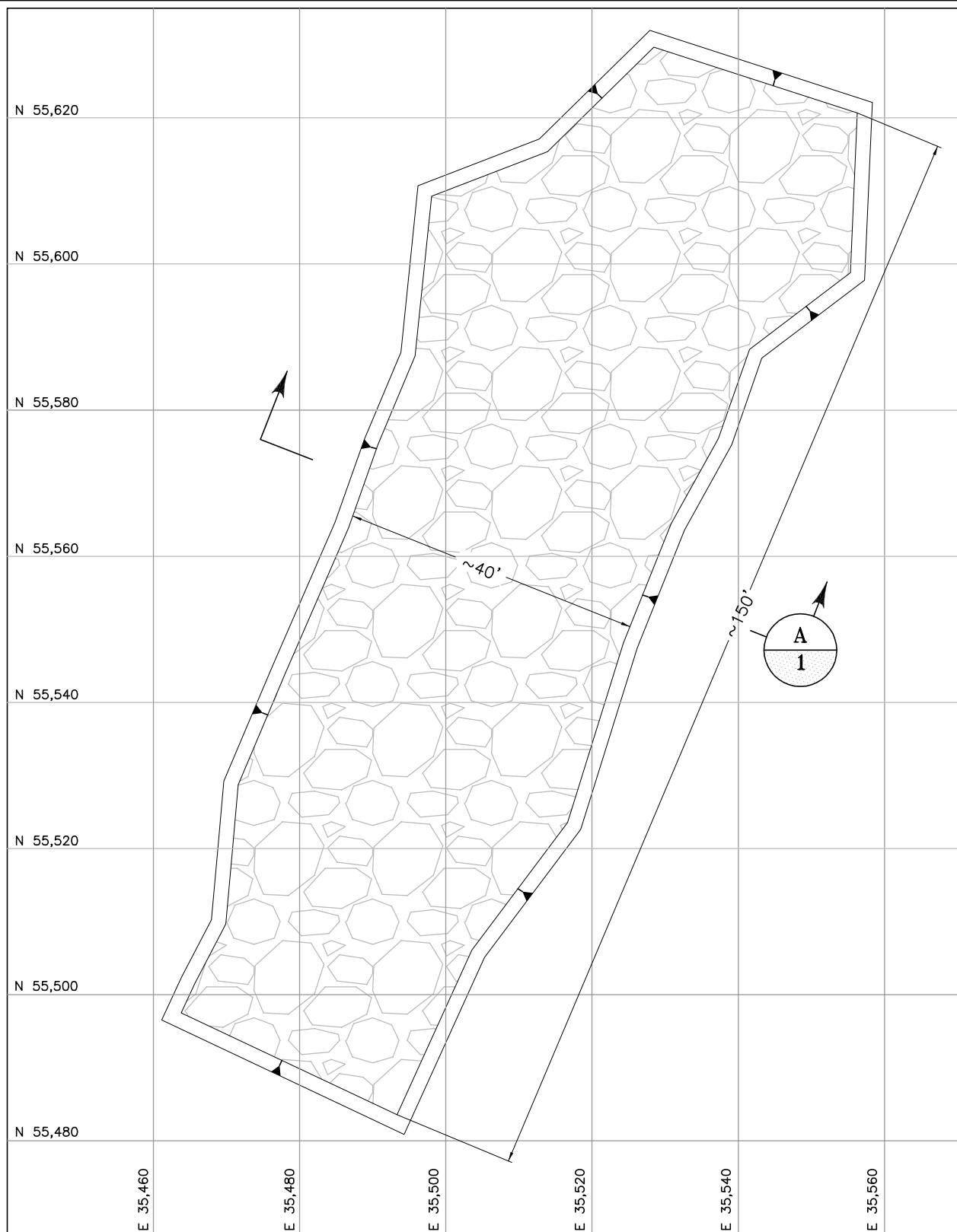
CONCRETE PLUG



COMPETENT BEDROCK AS
APPROVED BY ENGINEER

CLIENT CRIPPLE CREEK & VICTOR GOLD MINING COMPANY				
PROJECT SQUAW GULCH VLF PREGNANT SOLUTION STORAGE AREA				
TITLE CONCRETE REMEDIATION OF UNDERGROUND WORKING No. U6263 DETAIL SECTION				
DESIGNED BY	TMC	CHECKED BY	TMC	DATE
DRAWN BY	MF	APPROVED BY	MN	08/10/13
CADD FILENAME VLF UG CONC			FIGURE No. 3A	REV 0





QUANTITIES:

92 yd³—COARSE SHAFT BACKFILL

10,350 yd³—STRUCTURAL FILL

378 yd³—CONCRETE

1,822 yd³—CEMENTED ROCK FILL

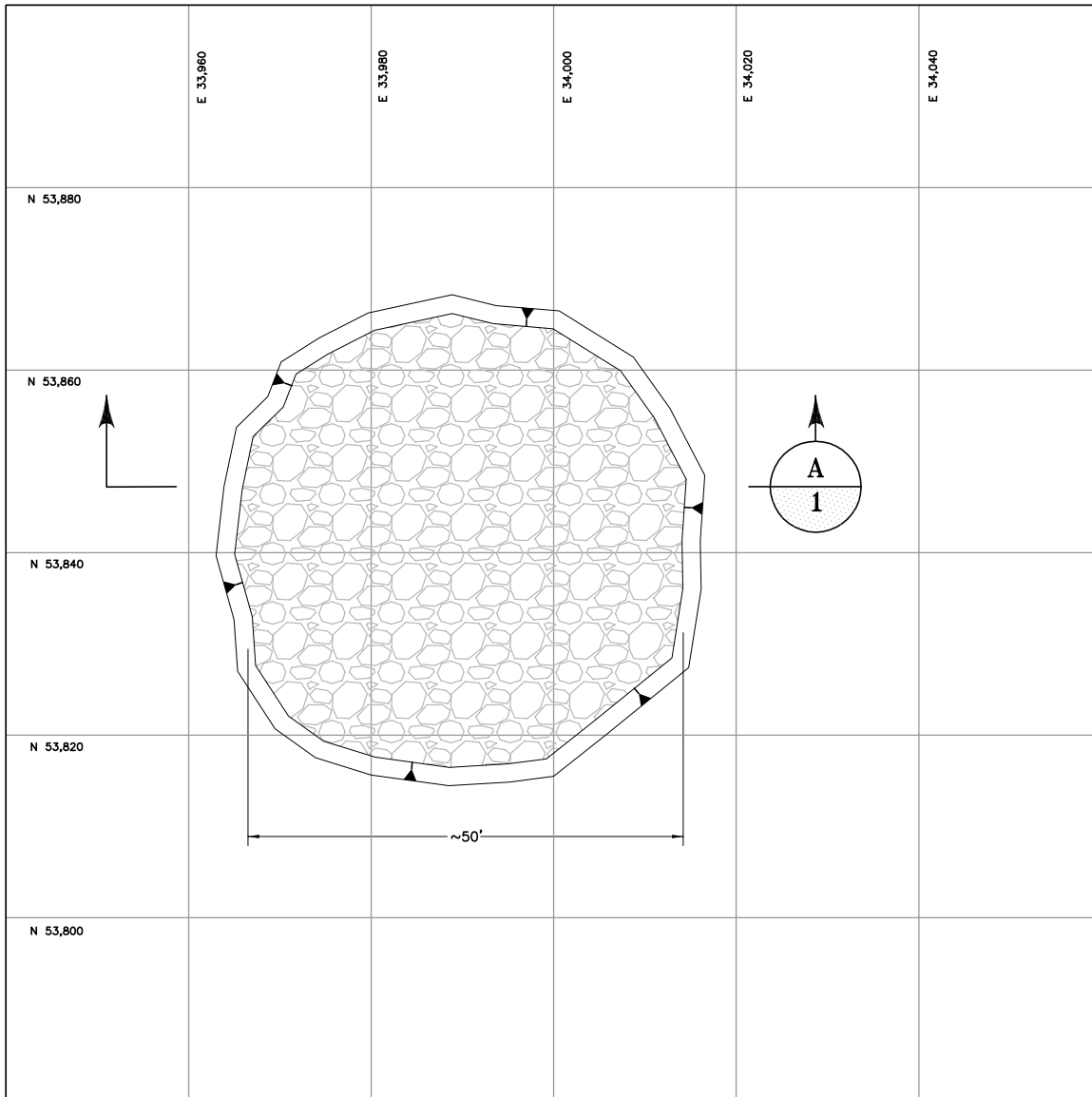
NOTE:

1. SLOPE=0.5H:1V MINIMUM



CLIENT CRIPPLE CREEK & VICTOR GOLD MINING COMPANY					
PROJECT MLE2 – SQUAW VALLEY LEACH FACILITY (VLF)					
TITLE CONCRETE REMEDIATION OF UNDERGROUND WORKING #6167 DETAIL SECTION					
DESIGNED BY	MN	CHECKED BY	SGR	DATE	
DRAWN BY	RBR	APPROVED BY	ALM	07/12/14	
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VLF UG CONC			4	0	





QUANTITIES:

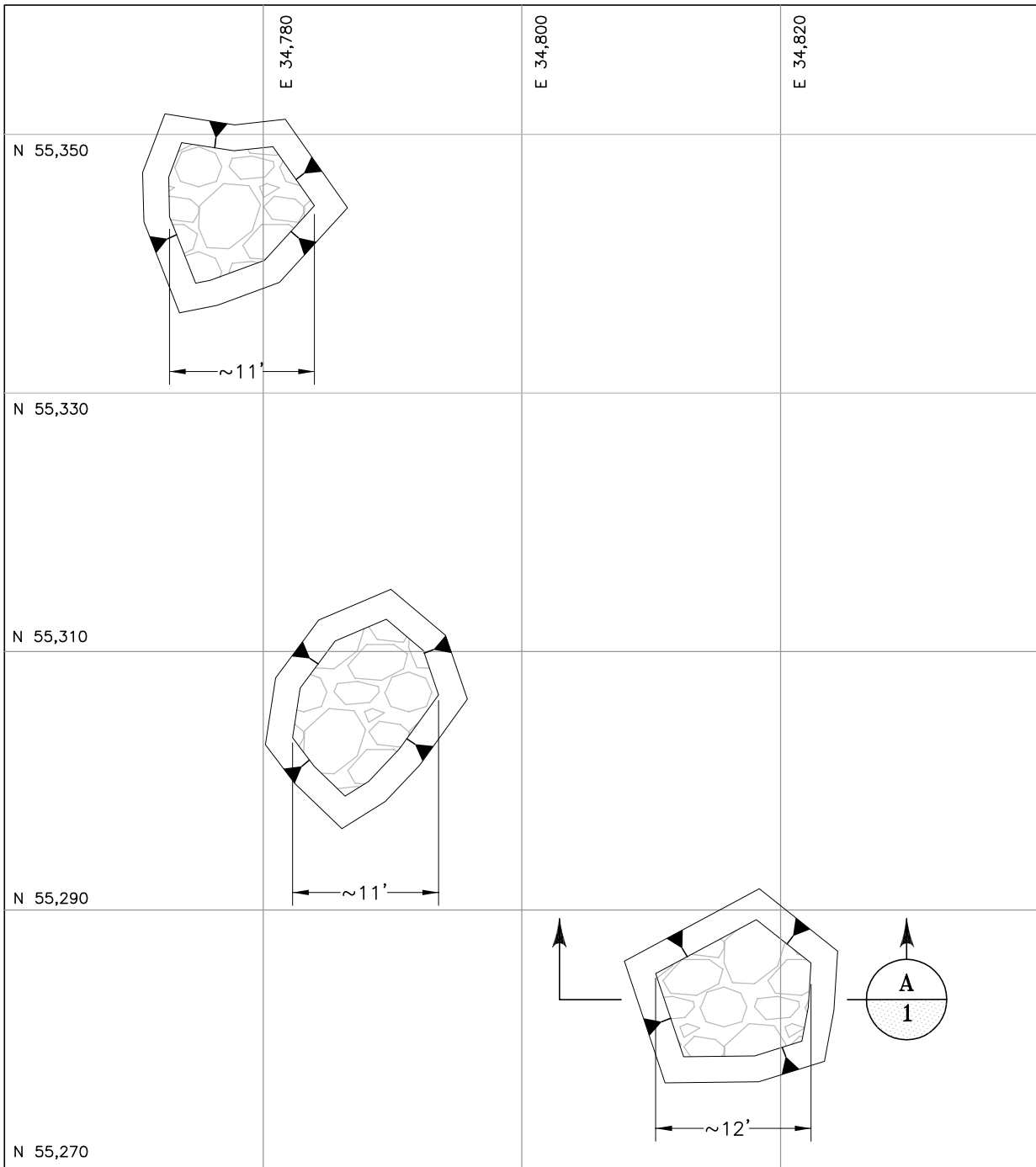
- 0 YD³ – STRUCTURAL FILL (SEE NOTE #2)
- 5 YD³ – CONCRETE
- 70 YD³ – CEMENTED ROCK FILL

NOTE:

1. SLOPE = 0.5H:1V MINIMUM.
2. EMBANKMENT FILL USED AS STRUCTURAL FILL IN REMEDIATION EFFORT.

CLIENT CRIPPLE CREEK & VICTOR GOLD MINING COMPANY				
PROJECT SQUAW GULCH VLF PREGNANT SOLUTION STORAGE AREA				
TITLE CONCRETE REMEDIATION OF UNDERGROUND WORKING #6263 PLAN VIEW				
DESIGNED BY	MN	CHECKED BY	SGR	DATE
DRAWN BY	RBR	APPROVED BY	ALM	07/12/14
CADD FILENAME VLF UG CONC			FIGURE No.	REV
			5	0





QUANTITIES:

3,060 YD³ – STRUCTURAL FILL

35 YD³ – CONCRETE

430 YD³ – CEMENTED ROCK FILL

NOTE:

1. SLOPE = 0.5H:1V MINIMUM.

CLIENT CRIPPLE CREEK & VICTOR GOLD MINING COMPANY					
PROJECT SQUAW GULCH VLF PREGNANT SOLUTION STORAGE AREA					
TITLE CONCRETE REMEDIATION OF UNDERGROUND WORKING #6280 PLAN VIEW					
DESIGNED BY	MN	CHECKED BY	SGR	DATE	
DRAWN BY	RBR	APPROVED BY	ALM	07/12/14	
CADD FILENAME VLF UG CONC			FIGURE No.	6	REV 0



Appendix O.2
Underground Workings
As-Built Drawing

Appendix O.3

Summary of Underground Workings

Concrete Test Results

**Cripple Creek & Victor Mining Company
Squaw Gulch VLF Pregnant Solution Storage Area
Underground Workings Concrete Testing Summary**



SPECIMEN NO.	DATE PLACED	TIME BATCHED	TIME SAMPLED	LOCATION	MIX DESIGN NUMBER	FIELD TEST RESULTS				LABORATORY TEST RESULTS						
						SLUMP (in)	AIR CONTENT (%)	UNIT WEIGHT (pcf)	SAMPLE TEMP. (°F)	CURING AGE AT TIME OF TEST (days)	LOAD (pounds)	AREA (in ²)	DESIGN STRENGTH (psi)	COMPRESSIVE STRENGTH (psi)	PERCENT OF DESIGN (%)	FRACTURE TYPE
W2-1	11/21/2013	12:46 PM	1:23 PM	UG #6111	635M2110	4.50	5.0	-	73	3	48,125	12.57	4,000	3,830	96%	2
W2-2										7	48,855	12.57	4,000	3,890	97%	3
W2-3										28	62,165	12.57	4,000	4,950	124%	2
W2-4										28	67,685	12.57	4,000	5,390	135%	3
W3-1	8/7/2013	9:00 AM	1:30 PM	UG #6263	74 GM2110	4.00	-	-	83	1	90,855	6.00	4,000	3,210	80%	5
W3-2										7	108,665	6.00	4,000	3,840	96%	5
W3-3										28	125,271	6.00	4,000	4,430	111%	2
W3-4										28	128,350	6.00	4,000	4,540	114%	2
W3-5										H						
W7-1	10/5/2013	8:08 AM	9:10 AM	UG #6167	4000	3.00	-	-	49	2	30,230	12.57	4,000	2,410	60%	2
W7-2										4	33,760	12.57	4,000	2,690	67%	2
W7-3										9	43,535	12.57	4,000	3,460	87%	2
W7-4										28	76,830	12.57	4,000	6,110	153%	2
W8-1	10/9/2013	2:13 PM	3:00 PM	UG #6167	4000	-	-	-	-	1	15,145	12.57	4,000	1,210	30%	3
W8-2										7	38,365	12.57	4,000	3,050	76%	2
W8-3										14	70,325	12.57	4,000	5,600	140%	3
W8-4										28	84,985	12.57	4,000	6,760	169%	2
W11-1	11/19/2013	7:33 AM	8:25 AM	UG #6280	4001	1.75	-	-	67	3	41,580	12.57	4,000	3,310	83%	2
W11-2										7	60,940	12.57	4,000	4,850	121%	2
W11-3										14	69,280	12.57	4,000	5,510	138%	2
W11-4										28	72,510	12.57	4,000	5,770	144%	2
W11-5										H						
W12-1	11/19/2013	4:08 PM	4:34 PM	UG #6280	4001	2.50	-	-	66	3	42,370	12.57	4,000	3,370	84%	2
W12-2										7	59,660	12.57	4,000	4,750	119%	2
W12-3										14	68,715	12.57	4,000	5,470	137%	2
W12-4										28	77,030	12.57	4,000	6,130	153%	2
W12-5										H						
W13-1	11/21/2013	12:46 PM	1:23 PM	UG #6087	4001	1.50	-	-	72	42	73,025	28.27	4,000	5,810	145%	3
W13-2										42	73,115	28.27	4,000	5,820	146%	2
W13-3										DISCARD						
W13-4										DISCARD						
W13-5										DISCARD						

Appendix O.4

**Underground Workings Individual
Concrete Test Reports**

REPORT OF CONCRETE CYLINDER TEST

AMEC Environment & Infrastructure

Licensee Address

Project Number: 74201125N0- Workings

Report Number: 2

Project: Workings

Client: CC&V

Address:

Attn:

FIELD TEST CONDITIONS AND RESULTS

Date Placed: 4/5/2013

Time Sampled: 1:30 pm

Location of Sample: UG#6111 (Working Area)

Supplier: TransMix

Truck Number: 007

Mix Number: 173400

Design Strength: 4000

Batch Size: 10 yds

Slump: 4.50"

Concrete Temp: 73

Water Added: 0

Initial Curing:

Max Field Curing Temp.:

Ticket Number: 173400

Time Placed: 1:20 pm

Time Batched: 11:30 am

Air Content: 5.0%

Unit Weight: N/T

Ambient Temp: 60

Technician: RGF

Final Curing:

Min Field Curing Temp.:

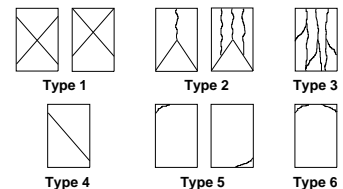
LABORATORY TEST RESULTS

Specimen	Test Date	Age	Load	Diameter	Area	Strength	Percent of Design	Type of Fracture
W2-1	4/8/2013	3	48125	4.00	12.57	3830	96%	2
W2-2	4/12/2013	7	48855	4.00	12.57	3890	97%	3
W2-3	5/3/2013	28	62165	4.00	12.57	4950	124%	2
W2-4	5/3/2013	28	67685	4.00	12.57	5390	135%	3
W2-5		H	Discard					

Remarks:

Copies to:

TYPES OF FRACTURE



Reported by:

Thorne Clark
Project Resident

REPORT OF CONCRETE CYLINDER TEST

AMEC Environment & Infrastructure

Licensee Address

Project Number: 74201125N0- Workings

Report Number: 3

Project: Workings

Client: CC&V

Address:

Attn:

FIELD TEST CONDITIONS AND RESULTS

Date Placed: 8/7/2013

Time Sampled: 1:30 pm

Location of Sample: UG #U6263 (Working Area)

Supplier: TransMix

Truck Number: 003

Ticket Number: 229740

Mix Number: 74GM2110

Time Placed: 9:00 am

Design Strength: 4000

Batch Size: 5 yds

Slump: 4.00"

Air Content: N/T

Unit Weight: N/T

Concrete Temp: 83

Ambient Temp: 68

Water Added: 0

Technician: DK/TB

Initial Curing:

Final Curing:

Max Field Curing Temp.:

Min Field Curing Temp.:

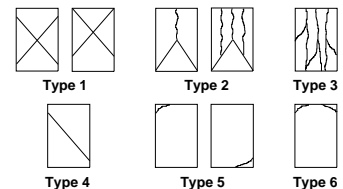
LABORATORY TEST RESULTS

Specimen	Test Date	Age	Load	Diameter	Area	Strength	Percent of Design	Type of Fracture
W3-1	8/8/2013	1	90855	6.00	28.27	3210	80%	5
W3-2	8/14/2013	7	108665	6.00	28.27	3840	96%	5
W3-3	9/4/2013	28	125271	6.00	28.27	4430	111%	2
W3-4	9/4/2013	28	128350	6.00	28.27	4540	114%	2
W3-5		H	Discard					

Remarks:

Copies to:

TYPES OF FRACTURE



Reported by:

Thorne Clark

Project Resident

REPORT OF CONCRETE CYLINDER TEST

AMEC Environment & Infrastructure

Licensee Address

Project Number: 74201125N0- Workings

Report Number: 7

Project: Workings

Client: CC&V

Address:

Attn:

FIELD TEST CONDITIONS AND RESULTS

Date Placed: 10/5/2013

Time Sampled: 9:10 am

Location of Sample: UG# U6167 (Working Area)

Supplier: NorthWest Ready Mix

Truck Number: 72

Ticket Number: 582

Mix Number: 4000

Time Placed: 9:01 am

Design Strength: 4000

Time Batched: 8:08 am

Batch Size: 9 yds

Slump: 3.00"

Air Content: N/T

Unit Weight: N/T

Concrete Temp: 49

Ambient Temp: 22

Water Added: 0

Technician: MF

Initial Curing:

Final Curing:

Max Field Curing Temp.:

Min Field Curing Temp.:

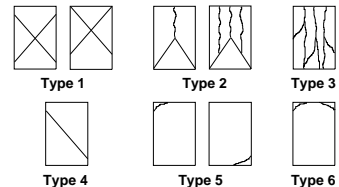
LABORATORY TEST RESULTS

Specimen	Test Date	Age	Load	Diameter	Area	Strength	Percent of Design	Type of Fracture
W7-1	10/7/2013	2	30230	4.00	12.57	2410	60%	2
W7-2	10/9/2013	4	33760	4.00	12.57	2690	67%	2
W7-3	10/14/2013	9	43535	4.00	12.57	3460	87%	2
W7-4	11/2/2013	28	76830	4.00	12.57	6110	153%	2

Remarks: Stored under a concrete blanket

Copies to:

TYPES OF FRACTURE



Reported by: _____

Thorne Clark

Project Resident

REPORT OF CONCRETE CYLINDER TEST

AMEC Environment & Infrastructure

Licensee Address

Project Number: 74201125N0- Workings

Report Number: 8

Project: Workings

Client: CC&V

Address:

Attn:

FIELD TEST CONDITIONS AND RESULTS

Date Placed: 10/9/2013

Time Sampled: 3:00 pm

Location of Sample: UG# U6167 (Working Area)

Supplier: NorthWest Ready Mix

Truck Number: 73

Ticket Number: 655

Mix Number: 4000

Time Placed: 2:45 pm

Design Strength: 4000

Time Batched: 2:13 pm

Batch Size: 9 yds

Slump: N/T

Air Content: N/T

Unit Weight: N/T

Concrete Temp:

Ambient Temp:

Water Added: 0

Technician: RR

Initial Curing:

Final Curing:

Max Field Curing Temp.:

Min Field Curing Temp.:

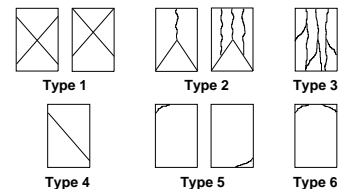
LABORATORY TEST RESULTS

Specimen	Test Date	Age	Load	Diameter	Area	Strength	Percent of Design	Type of Fracture
W8-1	10/10/2013	1	15145	4.00	12.57	1210	30%	3
W8-2	10/16/2013	7	38365	4.00	12.57	3050	76%	2
W8-3	10/23/2013	14	70325	4.00	12.57	5600	140%	3
W8-4	11/6/2013	28	84985	4.00	12.57	6760	169%	2
				4.00	12.57			

Remarks:

Copies to:

TYPES OF FRACTURE



Reported by: _____

Thorne Clark
Project Resident

REPORT OF CONCRETE CYLINDER TEST

AMEC Environment & Infrastructure

Licensee Address

Project Number: 74201125N0- Workings

Report Number: 11

Project: Workings

Client: CC&V

Address:

Attn:

FIELD TEST CONDITIONS AND RESULTS

Date Placed: 11/19/2013

Time Sampled: 8:25 am

Location of Sample: UG# U6280 (Working Area)

Supplier: NorthWest Ready Mix

Truck Number: 81

Ticket Number: 896

Mix Number: 4001

Time Placed: 8:20 am

Design Strength: 4000

Time Batched: 7:33 am

Batch Size: 9 yds

Slump: 1.75"

Air Content: N/T

Unit Weight: N/T

Concrete Temp: 67

Ambient Temp: 32

Water Added: 0

Technician: BR

Initial Curing:

Final Curing:

Max Field Curing Temp.:

Min Field Curing Temp.:

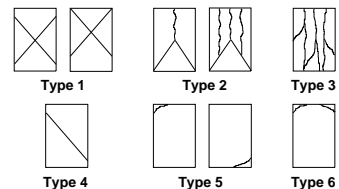
LABORATORY TEST RESULTS

Specimen	Test Date	Age	Load	Diameter	Area	Strength	Percent of Design	Type of Fracture
W11-1	11/22/2013	3	41580	4.00	12.57	3310	83%	2
W11-2	11/26/2013	7	60940	4.00	12.57	4850	121%	2
W11-3	12/3/2013	14	69280	4.00	12.57	5510	138%	2
W11-4	12/17/2013	28	72510	4.00	12.57	5770	144%	2
W11-5		H	Discard					

Remarks:

Copies to:

TYPES OF FRACTURE



Reported by:

Tim Burkhard

Project Resident

REPORT OF CONCRETE CYLINDER TEST

AMEC Environment & Infrastructure

Licensee Address

Project Number: 74201125N0- Workings

Report Number: 12

Project: Workings

Client: CC&V

Address:

Attn:

FIELD TEST CONDITIONS AND RESULTS

Date Placed: 11/19/2013

Time Sampled: 4:34 pm

Location of Sample: UG# U6280 (Working Area)

Supplier: NorthWest Ready Mix

Truck Number: 73

Mix Number: 4001

Design Strength: 4000

Batch Size: 7.5 yds

Slump: 2.50 "

Concrete Temp: 66

Water Added: 0

Initial Curing:

Max Field Curing Temp.:

Ticket Number: 918

Time Placed: 4:28 pm

Time Batched: 4:08 pm

Air Content: N/T

Unit Weight: N/T

Ambient Temp: 41

Technician: BR

Final Curing:

Min Field Curing Temp.:

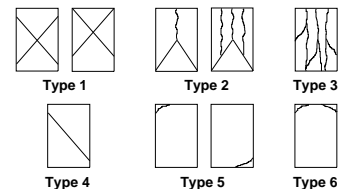
LABORATORY TEST RESULTS

Specimen	Test Date	Age	Load	Diameter	Area	Strength	Percent of Design	Type of Fracture
W12-1	11/22/2013	3	42370	4.00	12.57	3370	84%	2
W12-2	11/26/2013	7	59660	4.00	12.57	4750	119%	2
W12-3	12/3/2013	14	68715	4.00	12.57	5470	137%	2
W12-4	12/17/2013	28	77030	4.00	12.57	6130	153%	2
W12-5		H	Discard					

Remarks:

Copies to:

TYPES OF FRACTURE



Reported by:

Tim Burkhard
Project Resident

REPORT OF CONCRETE CYLINDER TEST

AMEC Environment & Infrastructure

Licensee Address

Project Number: 74201125N0- Workings

Report Number: 13

Project: Workings

Client: CC&V

Address:

Attn:

FIELD TEST CONDITIONS AND RESULTS

Date Placed: 11/21/2013

Time Sampled: 1:23 pm

Location of Sample: UG# U6087 (Working Area)

Supplier: NorthWest Ready Mix

Truck Number: 71

Ticket Number: 931

Mix Number: 4001

Time Placed: 1:13 pm

Design Strength: 4000

Time Batched: 12:46 pm

Batch Size: 5 yds

Slump: 1.50"

Air Content: N/T

Unit Weight: N/T

Concrete Temp: 72

Ambient Temp: 25

Water Added: 0

Technician: BR

Initial Curing:

Final Curing:

Max Field Curing Temp.:

Min Field Curing Temp.:

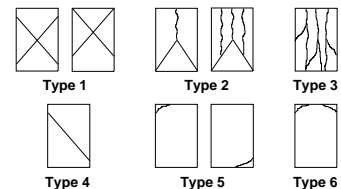
LABORATORY TEST RESULTS

Specimen	Test Date	Age	Load	Diameter	Area	Strength	Percent of Design	Type of Fracture
W13-1	1/2/2014	42	73025	4.00	12.57	5810	145%	3
W13-2	1/2/2014	42	73115	4.00	12.57	5820	146%	2
W13-3		Disc	Discard	4.00	12.57			
W13-4		Disc	Discard	4.00	12.57			

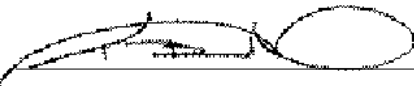
Remarks:

Copies to:

TYPES OF FRACTURE



Reported by:


Tim Burkhard
Project Resident

Appendix O.5

Underground Workings CQA Earthworks Laboratory Testing Summary-Coarse Shaft Backfill

**Cripple Creek & Victor Gold Mining Company
Squaw Gulch VLF Pregnant Solution Storage Area
CQA Earthworks Laboratory Testing Summary - Coarse Shaft Backfill**



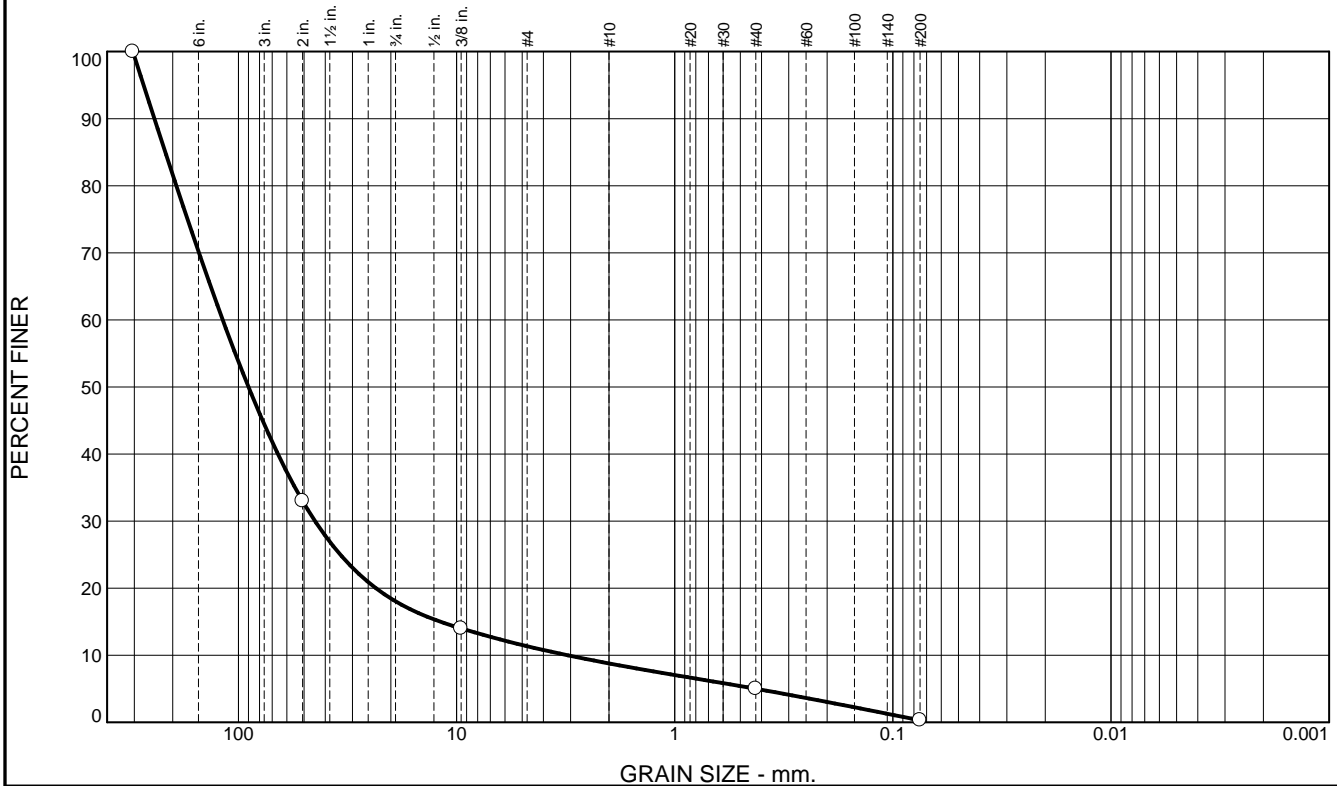
SAMPLE NUMBER	DATE TESTED	LOCATION	ELEV. (feet)	NATURAL MOISTURE (%)	GRAIN SIZE DISTRIBUTION (PERCENT PASSING)					ATTERBERG LIMITS		
					12.0"	2.0"	0.375"	No. 40	No. 200	PLASTIC INDEX: N/A		
					SPECIFICATION PERCENT PASSING)					LIQUID LIMIT	PLASTIC LIMIT	PLASTIC INDEX
					100	-	-	-	0-15			
CSB-1-R	6/6/2014	Underground Working # 6320	-	-	100.0	33.0	14.0	5.0	0.3	NV	NP	NP
CSB-2-R	3/5/2014	Underground Working # 6320	-	-	100.0	27.0	5.0	1.0	0.1	NV	NP	NP

Appendix O.6

Underground Workings

Individual Earthworks Test Reports

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
55.5	26.5	6.7	2.5	3.8	4.7	0.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
12"	100.0	100.0	
2"	33.0		
.375"	14.0		
#40	5.0		
#200	0.3	0.0 - 15.0	

* CC&V CSB

Material Description

Brown poorly graded gravel with sand

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D₉₀= 242.7181 D₈₅= 216.3653 D₆₀= 118.0170
D₅₀= 89.8628 D₃₀= 44.5176 D₁₅= 11.8555
D₁₀= 3.0987 C_u= 38.09 C_c= 5.42

Classification

USCS= GP AASHTO= A-1-a

Remarks

Sample obtained from UG#6320

Source of Sample: Coarse Shaft Backfill
Sample Number: CSB-1-R

Date: 3/5/2014



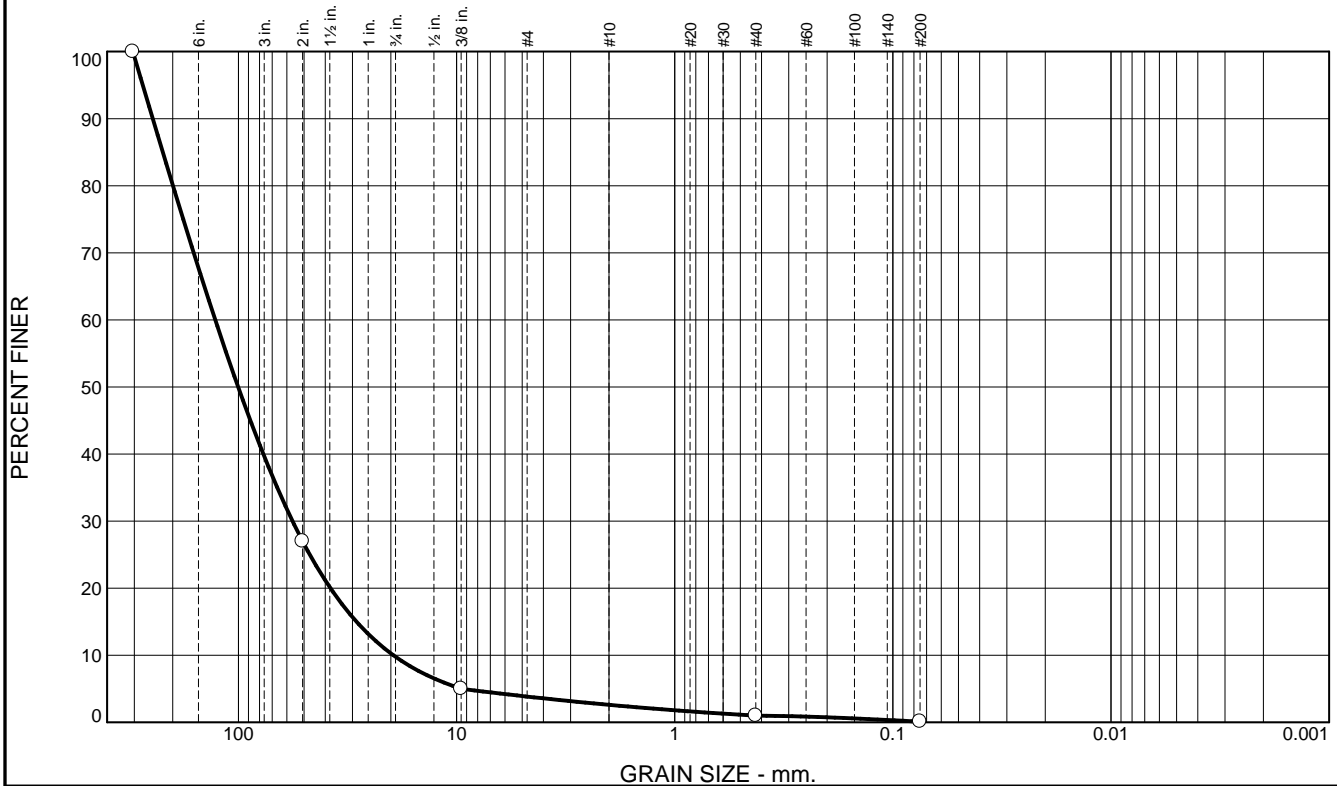
Client: Cripple Creek & Victor Gold Mining Company
Project: VLF Squaw Gulch

Project No: 74201125N0

Figure CSB-1-R

Tested By: RM Checked By: TB

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
60.3	29.9	6.0	1.2	1.6	0.9	0.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
12"	100.0	100.0	
2"	27.0		
.375"	5.0		
#40	1.0		
#200	0.1	0.0 - 15.0	

* CC&V CSB

Material Description

Brown well-graded gravel

Atterberg Limits

PL= NP

LL= NV

PI= NP

Coefficients

D₉₀= 246.9576

D₈₅= 222.1162

D₆₀= 127.7411

D₅₀= 100.2585

D₃₀= 56.5028

D₁₅= 28.7420

D₁₀= 19.4889

C_u= 6.55

C_c= 1.28

Classification

USCS= GW

AASHTO= A-1-a

Remarks

Sample obtained from UG#6320

Source of Sample: Coarse Shaft Backfill
Sample Number: CSB-2-R

Date: 3/5/2014



Client: Cripple Creek & Victor Gold Mining Company

Project: VLF Squaw Gulch

Project No: 74201125N0

Figure CSB-2-R

Tested By: RM

Checked By: B