



February 12, 2020

Project No. 19744-10A

Mr. Wayne Dollarhide  
**DIAMOND VALLEY PARTNERS, LLC**  
41197 Golden Gate Circle, Suite 201  
Murrieta, CA 92562

**Subject: Supplemental Geotechnical Slope Stability Interpretive Report, Proposed Diamond Valley Storage, Assessor's Parcel Numbers 466-050-019, -020, & -021, Southwest Corner of Winchester and Newport Roads, Winchester Area, Riverside County, California**

**References:** C.W. Soils, Inc., 2019, *Update Geotechnical Interpretive Report, Proposed Diamond Valley Storage, Assessor's Parcel Numbers 466-050-019, -020, & -021, Southwest Corner of Winchester and Newport Roads, Winchester Area, Riverside County, California*, dated April 4, 2019.

T.H.E. Soils Co., Inc., 2006, *Preliminary Geotechnical Investigation, Proposed Commercial/Retail Development, APN Nos.: 466-050-009, -010, & -011, Southwest Corner of East Newport & Winchester Roads, Winchester Area, Riverside County, California*, Work Order No. 1037602.00, dated October 10, 2006.

## **Introduction**

In accordance with your request, CW Soils is pleased to present our geotechnical slope stability interpretive analysis for the proposed Diamond Valley Storage, Assessor's Parcel Numbers 466-050-019, -020, & -021, located on the southwest corner of Winchester and Newport Roads in the Winchester area of Riverside County, California. Our services were completed in accordance with the scope of work described in our proposal, dated November 7, 2019. The purpose of our work was to evaluate the nature, distribution, and engineering properties of the geologic formations underlying the site with respect to the proposed improvements.

CW Soils has prepared this analysis for the above referenced project to present our finding regarding the gross stability of the proposed cut slope. The following information should be considered supplemental our update report referenced herein.

## **Laboratory Testing**

Laboratory testing of shear strength was performed for selected soil samples, considered representative of those to be present in the proposed cut slope. In the case of bedrock, the shear strength was assumed to be somewhat higher than the remolded sample test results. The laboratory test results are reflected throughout the Conclusions and Recommendations of this report. Summaries of the test results and a brief description of laboratory test criteria are presented below.

**Direct Shear:** Direct shear tests were performed on relatively undisturbed samples using the guidelines of ASTM D 3080. The test results are presented in the table below and on the Direct Shear Plot, Sheet C-7.

SAMPLE LOCATION	MATERIAL DESCRIPTION	FRICTION ANGLE (degrees)	COHESION (psf)
T-3 @ 5-7 feet	Granitic Bedrock (disturbed)	*32.9	*659

\* The samples were remolded to 91 percent of the maximum dry density.

## SLOPE STABILITY

### Significance of Slope Stability Analyses

Limit equilibrium analyses of slope stability only provide a general indication of the relative stability of a slope. The applicability is highly dependent on the ability of its simplified analytical methodology along with the chosen generalized assumptions of soil properties and slope geometry to accurately model complex geologic conditions that exist in the field. However, in spite of the limitations, limit equilibrium slope stability analyses can be used to provide insight into the relative need for and benefit of slope stabilization measures.

### Surficial Stability

The surficial stability of near surface soils can be calculated using an infinite slope with seepage occurring parallel to the slope face. In the analysis, the vertical depth of saturation is a minimum of 4 feet, and per local code requirements, the minimum acceptable factor of safety for surficial stability is 1.5 for static loading conditions.

For cut slopes into bedrock, the surficial soils are removed when the cut slopes are constructed. Therefore, the parallel seepage model for calculating surficial stability is not applicable for cut slopes, as the surficial materials have been removed.

### Deep Seated Stability

Deep seated stability of the highest anticipated cut slopes no steeper than 1.5:1, were evaluated using Slide, a computer application of the Bishop Simplified Method of analysis. Based on our current understanding of the planned improvements, slopes on the subject property will include an approximately 55 foot high 1.5:1 (h:v) cut slope.

Both static and pseudo-static loading conditions were evaluated to determine the factors of safety of the anticipated slopes. The minimum acceptable factor of safety was taken as 1.5 for static loading and 1.0 for pseudo-static loading. The pseudo-static analysis includes the effects of static loads combined with horizontal inertial force acting out of slope and through the center of gravity of the potential sliding mass.

The dynamic horizontal force was calculated utilizing design procedures developed by Bray and others (1998) and then simplified to develop a “screen analysis procedure” by Blake and others (2002) and Stewart and others (2003) as documented in Special Publication 117A (CGS, 2008). Where  $f_{eq}$  is derived from the 5 cm threshold displacement utilizing the “screen analysis procedure” and  $MHA_r$  is the maximum horizontal acceleration at the site for a soft rock condition (CGS, 2008). The resulting seismic coefficient,  $k_{eq} = f_{eq} \times MHA_r$  or 0.263 was applied.

The slope stability analyses performed for the sections analyzed indicate that the factors of safety for potential deep seated slip surfaces are above 1.5 for static and 1.0 for pseudo-static conditions. The slope stability results are presented in the table below and calculation sheets are presented within the appendices of this report.

**CALCULATED FACTORS OF SAFETY**

<b>SLOPE TYPE</b>	<b>HEIGHT (ft)</b>	<b>STATIC</b>	<b>PSEUDO-STATIC</b>
Cross Section A-A' Cut Slope	55	2.13	1.135

A geologist with CW Soils should evaluate all slopes in the field during grading and construction operations. Should unfavorable geologic conditions be observed, then stabilization fills or flatter slopes may be required. Any stabilization fills should be constructed in accordance with the recommendations herein. All fill slope construction should be properly keyed and benched into competent soils.

CW Soils appreciates the opportunity to offer our services on this project. If we can be of further assistance, please do not hesitate to contact the undersigned at your convenience.

Respectfully submitted,

**CW Soils**

Chad E. Welke, PG, CEG, PE  
Principal Geologist/Engineer



- Attachments: Direct Shear Plot, Sheet S-1 (Rear of Text)
- Cross Section Location Map - Plate 1 (Rear of Text)
- Slope Stability Calculations and Cross Section A-A' (Rear of Text)

Distribution: (4) Addressee



**DIRECT SHEAR**  
ASTM D 3080

**T.H.E. Soils Company**  
**PN: 1037602.00 Cambridge Comm., Sample: T-3 @ 5-7'**

Soil Description: (SC) Dark Yellowish Brown, Clayey Fine-Coarse Sand

Displacement Rate: 0.020 in/m      Box Gap: 0.025 in      Max Data: 132.1 @ 7.1  
Remold Target Data: 91 % = 120.2 pcf      10.5 %Mc(-No.10)      2.65 Gs(assumed)  
\*As Received Mc: 10.5 %      Adjusted Mc: - %      \*\*After Shear Mc: - %

\*Existing Gradation for undisturbed specimens, -No.10 fraction for remolded specimens

Undisturbed

\*\*Test 1 Specimen (Highest Normal Stress)

Remolded

SHEAR RECORD:	Test 1		Test 2		Test 3	
	Prov. Ring	Vert. Dial	Prov. Ring	Vert. Dial	Prov. Ring	Vert. Dial
Displacement (in): 0.010	40	-40	29	-8	22	0
0.020	65	-40	60	-18	57	3
0.030	89	-40	83	-18	79	23
0.040	112	-41	97	-15	86	53
0.050	131	-42	104	-8	86	78
0.060	148	-43	108	0	84	93
0.070	162	-43	110	8		
0.080	167	-41	110	13		
0.090	171	-39	111	16		
0.100	175	-37	111	20		
0.110	176	-35	110	25		
0.120	178	-34	109	29		
0.130	180	-34				
0.140	181	-33				
0.150	182	-33				
0.160	184	-33				
0.170	186	-36				
0.180	187	-36				
0.190	188	-38				
0.200	188	-40				
0.210	189	-41				
0.220	190	-43				
0.230	191	-43				
0.240	190	-43				
0.250	190	-43				

*SHEAR STRESS:	Divisions	Pounds	psf
Test 1:	191	79	2475
Test 2:	111	47	1473
Test 3:	86	37	1160

\*Peak Values

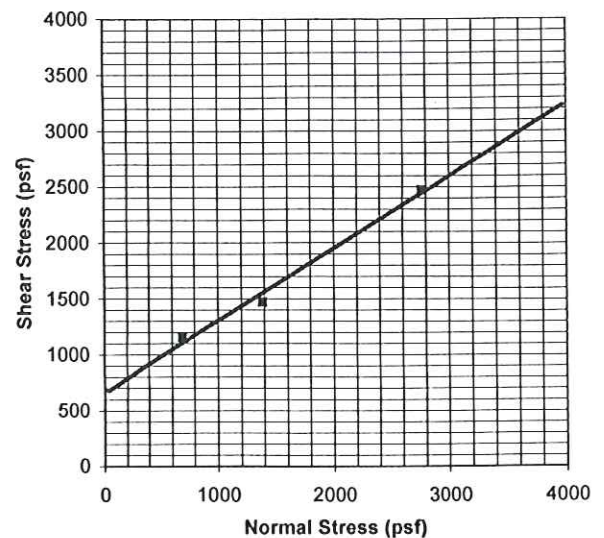
NORMAL STRESS (psf):	
Test 1:	2764
Test 2:	1382
Test 3:	691

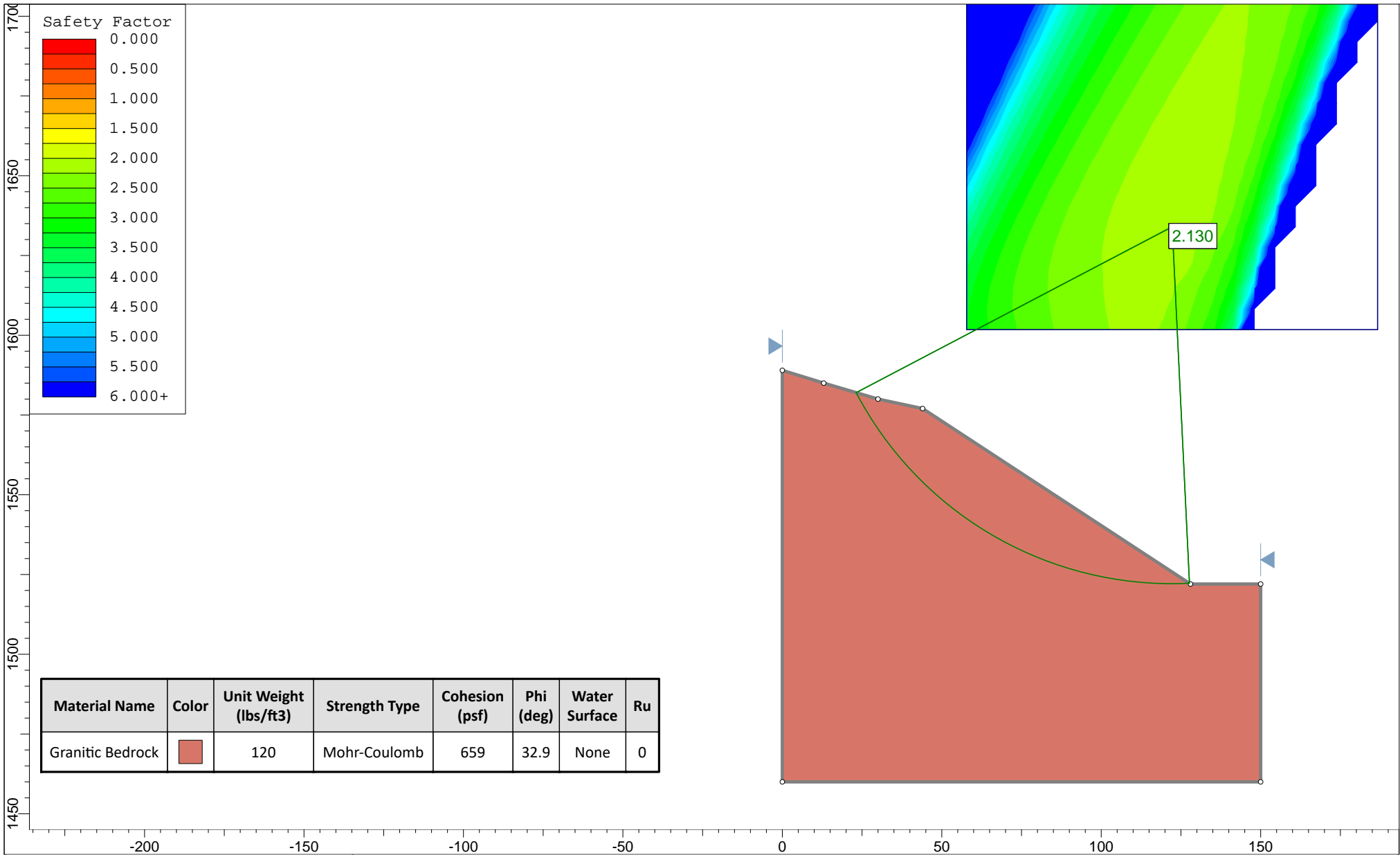
Proving Ring  
SN:1155-16-11938C  
Calibrated 25-Jan-06

Ø=	32.9°
C=	659psf

*ant K. K* 8/7/06

Reviewed By, Date





Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	Cohesion (psf)	Phi (deg)	Water Surface	Ru
Granitic Bedrock		120	Mohr-Coulomb	659	32.9	None	0



SLIDEINTERPRET 6.039

<i>Project</i>		Diamond Valley Storage	
<i>Analysis Description</i>		Cross Section A-A', Static	
<i>Drawn By</i>	CW	<i>Scale</i>	1:500
<i>Company</i>	CW Soils		
<i>Date</i>	2-12-20	<i>File Name</i>	19744-10A Section A-A' Static.slim

# Slide Analysis Information

## Diamond Valley Storage

### Project Summary

File Name: 19744-10A Section A-A' Static  
 Slide Modeler Version: 6.039  
 Project Title: Diamond Valley Storage  
 Analysis: Cross Section A-A', Static  
 Author: CW  
 Company: CW Soils  
 Date Created: 2-12-20  
 Comments:  
     19744-10A


### General Settings

Units of Measurement: Imperial Units  
 Time Units: days  
 Permeability Units: feet/second  
 Failure Direction: Left to Right  
 Data Output: Standard  
 Maximum Material Properties: 20  
 Maximum Support Properties: 20

### Analysis Options

#### Analysis Methods Used

Bishop simplified

	<i>Project</i>			Diamond Valley Storage		
	<i>Analysis Description</i>			Cross Section A-A', Static		
	<i>Drawn By</i>	CW	<i>Scale</i>	<i>Company</i>	CW Soils	
	<i>Date</i>	2-12-20	<i>File Name</i>	19744-10A Section A-A' Static.slim		

Number of slices: 25  
 Tolerance: 0.005  
 Maximum number of iterations: 50  
 Check malpha < 0.2: Yes  
 Initial trial value of FS: 1  
 Steffensen Iteration: Yes

### Groundwater Analysis

Groundwater Method: Water Surfaces  
 Pore Fluid Unit Weight: 62.4 lbs/ft3  
 Advanced Groundwater Method: None

### Random Numbers


Pseudo-random Seed: 10116  
 Random Number Generation Method: Park and Miller v.3


### Surface Options

Surface Type: Circular  
 Search Method: Grid Search  
 Radius Increment: 10  
 Composite Surfaces: Disabled  
 Reverse Curvature: Create Tension Crack  
 Minimum Elevation: Not Defined  
 Minimum Depth: Not Defined

### Material Properties

Property	Granitic Bedrock
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	<i>Project</i>			Diamond Valley Storage
	<i>Analysis Description</i>			Cross Section A-A', Static
	<i>Drawn By</i>	CW	<i>Scale</i>	<i>Company</i>
	<i>Date</i>	2-12-20	<i>File Name</i>	19744-10A Section A-A' Static.slim

Color	
Strength Type	Mohr-Coulomb
Unit Weight [lbs/ft3]	120
Cohesion [psf]	659
Friction Angle [deg]	32.9
Water Surface	None
Ru Value	0

**Global Minimums**

**Method: bishop simplified**

FS: 2.129770  
Center: 122.251, 1633.981  
Radius: 111.892  
Left Slip Surface Endpoint: 23.161, 1582.012  
Right Slip Surface Endpoint: 127.663, 1522.221  
Resisting Moment=2.36131e+007 lb-ft  
Driving Moment=1.10871e+007 lb-ft  
Total Slice Area=1788.83 ft2


**Valid / Invalid Surfaces**

**Method: bishop simplified**

Number of Valid Surfaces: 4274  
Number of Invalid Surfaces: 577

**Error Codes:**

Error Code -108 reported for 4 surfaces  
Error Code -109 reported for 1 surface  
Error Code -1000 reported for 572 surfaces

	<i>Project</i>			Diamond Valley Storage
	<i>Analysis Description</i>			Cross Section A-A', Static
	<i>Drawn By</i>	CW	<i>Scale</i>	<i>Company</i>
	<i>Date</i>	2-12-20	<i>File Name</i>	19744-10A Section A-A' Static.slim



## Error Codes


The following errors were encountered during the computation:

- 108 = Total driving moment or total driving force < 0.1. This is to limit the calculation of extremely high safety factors if the driving force is very small (0.1 is an arbitrary number).
- 109 = Soiltype for slice base not located. This error should occur very rarely, if at all. It may occur if a very low number of slices is combined with certain soil geometries, such that the midpoint of a slice base is actually outside the soil region, even though the slip surface is wholly within the soil region.
- 1000 = No valid slip surfaces are generated at a grid center. Unable to draw a surface.

## Slice Data

Global Minimum Query (bishop simplified) - Safety Factor: 2.12977

Slice Number	Width [ft]	Weight [lbs]	Base Material	Base Cohesion [psf]	Base Friction Angle [degrees]	Shear Stress [psf]	Shear Strength [psf]	Base Normal Stress [psf]	Pore Pressure [psf]	Effective Normal Stress [psf]
1	4.1801	1520.2	Granitic Bedrock	659	32.9	274.477	584.573	-115.046	0	-115.046
2	4.1801	4303.34	Granitic Bedrock	659	32.9	428.454	912.509	391.865	0	391.865
3	4.1801	6743.04	Granitic Bedrock	659	32.9	573.142	1220.66	868.194	0	868.194
4	4.1801	8864.03	Granitic Bedrock	659	32.9	706.385	1504.44	1306.85	0	1306.85
5	4.1801	10702.9	Granitic Bedrock	659	32.9	827.944	1763.33	1707.04	0	1707.04
6	4.1801	11832.3	Granitic Bedrock	659	32.9	912.066	1942.49	1983.96	0	1983.96
7	4.1801	12312.7	Granitic Bedrock	659	32.9	959.489	2043.49	2140.1	0	2140.1
8	4.1801	12617.7	Granitic Bedrock	659	32.9	996.075	2121.41	2260.55	0	2260.55
9	4.1801	12766.5	Granitic Bedrock	659	32.9	1022.64	2177.99	2347.99	0	2347.99
10	4.1801	12774.1	Granitic Bedrock	659	32.9	1039.84	2214.63	2404.64	0	2404.64
11	4.1801	12652.6	Granitic Bedrock	659	32.9	1048.22	2232.46	2432.2	0	2432.2
12	4.1801	12411.8	Granitic Bedrock	659	32.9	1048.18	2232.39	2432.11	0	2432.11
13	4.1801	12059.5	Granitic Bedrock	659	32.9	1040.09	2215.15	2405.45	0	2405.45
14	4.1801	11602.5	Granitic Bedrock	659	32.9	1024.21	2181.33	2353.17	0	2353.17
15	4.1801	11046.1	Granitic Bedrock	659	32.9	1000.76	2131.38	2275.95	0	2275.95


	Project		Diamond Valley Storage	
	Analysis Description		Cross Section A-A', Static	
	Drawn By	CW	Scale	Company
	Date	2-12-20	File Name	CW Soils 19744-10A Section A-A' Static.slim

16	4.1801	10394.9	Granitic Bedrock	659	32.9	969.893	2065.65	2174.36	0	2174.36
17	4.1801	9652.79	Granitic Bedrock	659	32.9	931.744	1984.4	2048.76	0	2048.76
18	4.1801	8822.86	Granitic Bedrock	659	32.9	886.377	1887.78	1899.41	0	1899.41
19	4.1801	7907.73	Granitic Bedrock	659	32.9	833.832	1775.87	1726.42	0	1726.42
20	4.1801	6909.52	Granitic Bedrock	659	32.9	774.105	1648.67	1529.79	0	1529.79
21	4.1801	5829.9	Granitic Bedrock	659	32.9	707.152	1506.07	1309.37	0	1309.37
22	4.1801	4670.15	Granitic Bedrock	659	32.9	632.894	1347.92	1064.91	0	1064.91
23	4.1801	3431.2	Granitic Bedrock	659	32.9	551.21	1173.95	795.993	0	795.993
24	4.1801	2113.6	Granitic Bedrock	659	32.9	461.936	983.817	502.09	0	502.09
25	4.1801	717.596	Granitic Bedrock	659	32.9	364.861	777.07	182.509	0	182.509

**Interslice Data**

Global Minimum Query (bishop simplified) - Safety Factor: 2.12977

Slice Number	X coordinate [ft]	Y coordinate - Bottom [ft]	Interslice Normal Force [lbs]	Interslice Shear Force [lbs]	Interslice Force Angle [degrees]
1	23.1606	1582.01	0	0	0
2	27.3407	1574.72	-1986.1	0	0
3	31.5209	1568.5	-1339.33	0	0
4	35.701	1563.07	981.885	0	0
5	39.8811	1558.25	4321.76	0	0
6	44.0612	1553.94	8216.03	0	0
7	48.2413	1550.06	12102.1	0	0
8	52.4214	1546.55	15601.1	0	0
9	56.6015	1543.37	18628	0	0
10	60.7816	1540.49	21130.3	0	0
11	64.9617	1537.87	23079.4	0	0
12	69.1418	1535.5	24465.7	0	0
13	73.3219	1533.35	25294.2	0	0


	Project		Diamond Valley Storage	
	Analysis Description		Cross Section A-A', Static	
	Drawn By	CW	Scale	Company CW Soils
	Date	2-12-20	File Name	19744-10A Section A-A' Static.slim

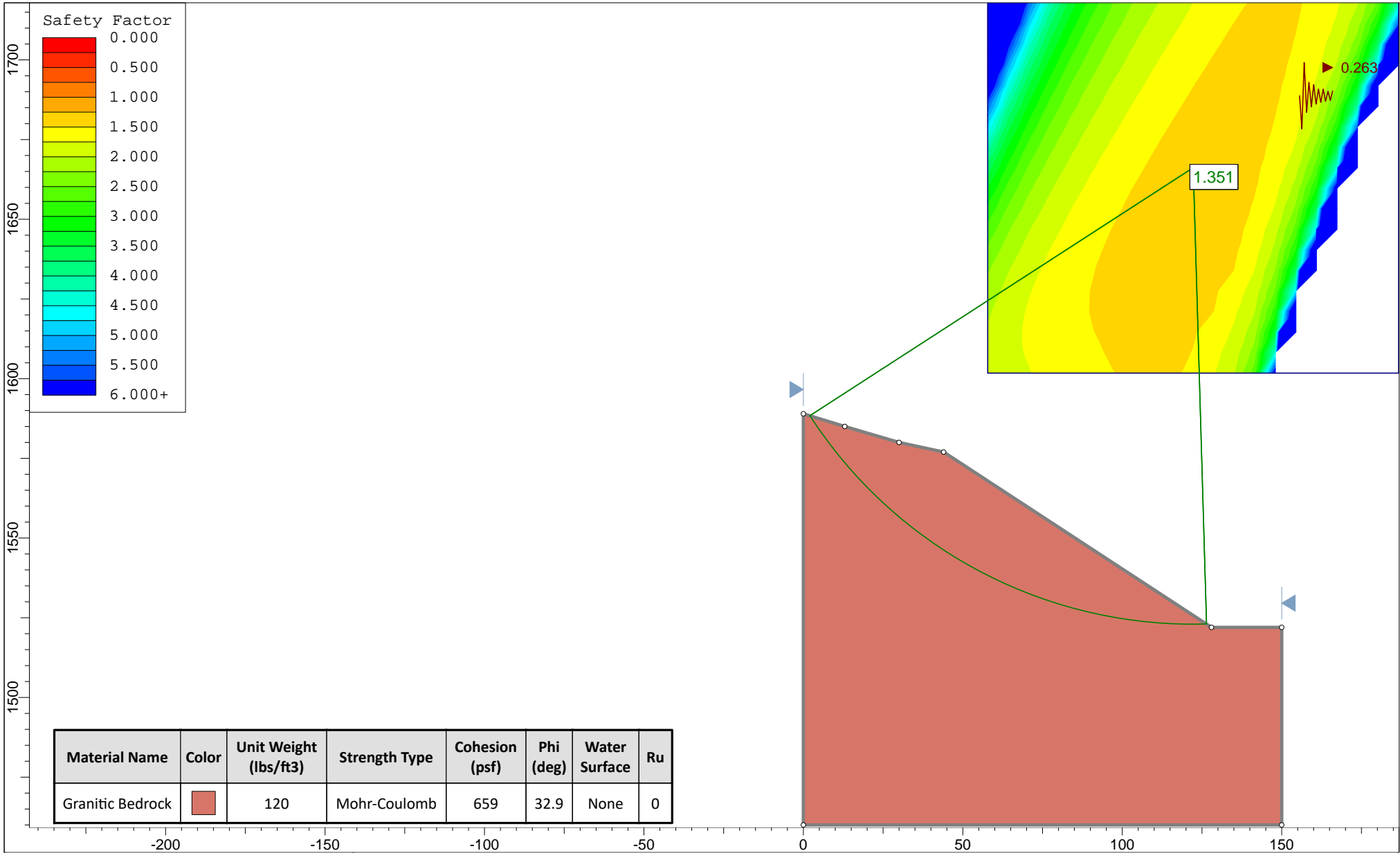
14	77.502	1531.43	25582.5	0	0
15	81.6821	1529.7	25358.8	0	0
16	85.8622	1528.17	24660.6	0	0
17	90.0423	1526.83	23534	0	0
18	94.2224	1525.66	22033.3	0	0
19	98.4025	1524.66	20220.7	0	0
20	102.583	1523.83	18166.2	0	0
21	106.763	1523.17	15947.8	0	0
22	110.943	1522.66	13652.1	0	0
23	115.123	1522.32	11374.7	0	0
24	119.303	1522.13	9220.57	0	0
25	123.483	1522.1	7305.75	0	0
26	127.663	1522.22	0	0	0


**List Of Coordinates**

**External Boundary**

X	Y
150	1460
150	1522
128	1522
44	1577
30	1580
13	1585
0	1589
0	1460

	<i>Project</i>				Diamond Valley Storage	
	<i>Analysis Description</i>				Cross Section A-A', Static	
	<i>Drawn By</i>		<i>Scale</i>		<i>Company</i>	
	CW				CW Soils	
<i>Date</i>				<i>File Name</i>		
2-12-20				19744-10A Section A-A' Static.slim		



	Project		Diamond Valley Storage	
	Analysis Description		Cross Section A-A', Pseudo-Static	
	Drawn By	CW	Scale	1:500
	Date	2-12-20	Company	CW Soils
			File Name	19744-10A Section A-A' Pseudo-Static.slim

# Slide Analysis Information

## Diamond Valley Storage

### Project Summary

File Name: 19744-10A Section A-A' Pseudo-Static  
Slide Modeler Version: 6.039  
Project Title: Diamond Valley Storage  
Analysis: Cross Section A-A', Pseudo-Static  
Author: CW  
Company: CW Soils  
Date Created: 2-12-20  
Comments:  
19744-10A


### General Settings

Units of Measurement: Imperial Units  
Time Units: days  
Permeability Units: feet/second  
Failure Direction: Left to Right  
Data Output: Standard  
Maximum Material Properties: 20  
Maximum Support Properties: 20

### Analysis Options

#### Analysis Methods Used

Bishop simplified

	<i>Project</i>			Diamond Valley Storage	
	<i>Analysis Description</i>			Cross Section A-A', Pseudo-Static	
	<i>Drawn By</i>	CW	<i>Scale</i>	<i>Company</i>	CW Soils
	<i>Date</i>	2-12-20	<i>File Name</i>	19744-10A Section A-A' Pseudo-Static.slim	

Number of slices: 25  
Tolerance: 0.005  
Maximum number of iterations: 50  
Check malpha < 0.2: Yes  
Initial trial value of FS: 1  
Steffensen Iteration: Yes

### Groundwater Analysis

Groundwater Method: Water Surfaces  
Pore Fluid Unit Weight: 62.4 lbs/ft3  
Advanced Groundwater Method: None

### Random Numbers


Pseudo-random Seed: 10116  
Random Number Generation Method: Park and Miller v.3

### Surface Options


Surface Type: Circular  
Search Method: Grid Search  
Radius Increment: 10  
Composite Surfaces: Disabled  
Reverse Curvature: Create Tension Crack  
Minimum Elevation: Not Defined  
Minimum Depth: Not Defined

### Loading

Seismic Load Coefficient (Horizontal): 0.263

	<i>Project</i>			Diamond Valley Storage	
	<i>Analysis Description</i>			Cross Section A-A', Pseudo-Static	
	<i>Drawn By</i>	CW	<i>Scale</i>	<i>Company</i>	CW Soils
	<i>Date</i>	2-12-20	<i>File Name</i>	19744-10A Section A-A' Pseudo-Static.slim	

## Material Properties

Property	Granitic Bedrock
Color	
Strength Type	Mohr-Coulomb
Unit Weight [lbs/ft3]	120
Cohesion [psf]	659
Friction Angle [deg]	32.9
Water Surface	None
Ru Value	0

## Global Minimums


### Method: bishop simplified

FS: 1.351370  
Center: 122.251, 1666.198  
Radius: 143.230  
Left Slip Surface Endpoint: 2.002, 1588.384  
Right Slip Surface Endpoint: 126.429, 1523.029  
Resisting Moment=3.5682e+007 lb-ft  
Driving Moment=2.64042e+007 lb-ft  
Total Slice Area=2392.77 ft<sup>2</sup>

## Valid / Invalid Surfaces

### Method: bishop simplified

Number of Valid Surfaces: 4275  
Number of Invalid Surfaces: 576

	<i>Project</i>			Diamond Valley Storage	
	<i>Analysis Description</i>			Cross Section A-A', Pseudo-Static	
	<i>Drawn By</i>	CW	<i>Scale</i>	<i>Company</i>	CW Soils
	<i>Date</i>	2-12-20		<i>File Name</i>	19744-10A Section A-A' Pseudo-Static.slim
	<small>SLIDEINTERPRET 6.039</small>				

### Error Codes:

Error Code -108 reported for 3 surfaces  
Error Code -109 reported for 1 surface  
Error Code -1000 reported for 572 surfaces

### Error Codes


The following errors were encountered during the computation:

- 108 = Total driving moment or total driving force < 0.1. This is to limit the calculation of extremely high safety factors if the driving force is very small (0.1 is an arbitrary number).
- 109 = Soiltype for slice base not located. This error should occur very rarely, if at all. It may occur if a very low number of slices is combined with certain soil geometries, such that the midpoint of a slice base is actually outside the soil region, even though the slip surface is wholly within the soil region.
- 1000 = No valid slip surfaces are generated at a grid center. Unable to draw a surface.

### Slice Data

Global Minimum Query (bishop simplified) - Safety Factor: 1.35137

Slice Number	Width [ft]	Weight [lbs]	Base Material	Base Cohesion [psf]	Base Friction Angle [degrees]	Shear Stress [psf]	Shear Strength [psf]	Base Normal Stress [psf]	Pore Pressure [psf]	Effective Normal Stress [psf]
1	4.97709	1692.52	Granitic Bedrock	659	32.9	384.832	520.051	-214.781	0	-214.781
2	4.97709	4828.37	Granitic Bedrock	659	32.9	591.271	799.026	216.448	0	216.448
3	4.97709	7527.49	Granitic Bedrock	659	32.9	783.778	1059.17	618.574	0	618.574
4	4.97709	9886.69	Granitic Bedrock	659	32.9	963.923	1302.62	994.88	0	994.88
5	4.97709	11937.5	Granitic Bedrock	659	32.9	1130.79	1528.11	1343.44	0	1343.44
6	4.97709	13737.6	Granitic Bedrock	659	32.9	1286.06	1737.94	1667.78	0	1667.78
7	4.97709	15476.5	Granitic Bedrock	659	32.9	1441.43	1947.91	1992.37	0	1992.37
8	4.97709	17050.8	Granitic Bedrock	659	32.9	1589.11	2147.47	2300.81	0	2300.81
9	4.97709	18227.3	Granitic Bedrock	659	32.9	1711.08	2312.3	2555.62	0	2555.62
10	4.97709	18251.3	Granitic Bedrock	659	32.9	1748.94	2363.47	2634.71	0	2634.71

	Project		Diamond Valley Storage	
	Analysis Description		Cross Section A-A', Pseudo-Static	
	Drawn By	CW	Scale	Company CW Soils
	Date	2-12-20	File Name	19744-10A Section A-A' Pseudo-Static.slim




11	4.97709	17986.9	Granitic Bedrock	659	32.9	1763.71	2383.43	2665.57	0	2665.57
12	4.97709	17570.7	Granitic Bedrock	659	32.9	1764.99	2385.16	2668.24	0	2668.24
13	4.97709	17011.5	Granitic Bedrock	659	32.9	1753.07	2369.05	2643.34	0	2643.34
14	4.97709	16317	Granitic Bedrock	659	32.9	1728.16	2335.38	2591.29	0	2591.29
15	4.97709	15493.3	Granitic Bedrock	659	32.9	1690.37	2284.31	2512.35	0	2512.35
16	4.97709	14545.9	Granitic Bedrock	659	32.9	1639.77	2215.94	2406.67	0	2406.67
17	4.97709	13479.2	Granitic Bedrock	659	32.9	1576.38	2130.27	2274.23	0	2274.23
18	4.97709	12297	Granitic Bedrock	659	32.9	1500.11	2027.21	2114.93	0	2114.93
19	4.97709	11002.6	Granitic Bedrock	659	32.9	1410.86	1906.59	1928.48	0	1928.48
20	4.97709	9598.47	Granitic Bedrock	659	32.9	1308.4	1768.13	1714.46	0	1714.46
21	4.97709	8086.74	Granitic Bedrock	659	32.9	1192.49	1611.5	1472.33	0	1472.33
22	4.97709	6469.07	Granitic Bedrock	659	32.9	1062.79	1436.22	1201.39	0	1201.39
23	4.97709	4746.69	Granitic Bedrock	659	32.9	918.867	1241.73	900.763	0	900.763
24	4.97709	2920.42	Granitic Bedrock	659	32.9	760.223	1027.34	569.372	0	569.372
25	4.97709	990.695	Granitic Bedrock	659	32.9	586.243	792.231	205.945	0	205.945

**Interslice Data**

Global Minimum Query (bishop simplified) - Safety Factor: 1.35137

Slice Number	X coordinate [ft]	Y coordinate - Bottom [ft]	Interslice Normal Force [lbs]	Interslice Shear Force [lbs]	Interslice Force Angle [degrees]
1	2.00163	1588.38	0	0	0
2	6.97871	1581.19	-3010.27	0	0
3	11.9558	1574.82	-3296.1	0	0
4	16.9329	1569.13	-1682.24	0	0
5	21.91	1563.99	1246.01	0	0
6	26.8871	1559.33	5034.51	0	0
7	31.8641	1555.09	9340.9	0	0
8	36.8412	1551.22	13970.6	0	0


	Project		Diamond Valley Storage	
	Analysis Description		Cross Section A-A', Pseudo-Static	
	Drawn By	CW	Scale	Company CW Soils
	Date	2-12-20	File Name	19744-10A Section A-A' Pseudo-Static.slim

9	41.8183	1547.68	18705	0	0
10	46.7954	1544.46	23263	0	0
11	51.7725	1541.51	27152	0	0
12	56.7496	1538.82	30289.6	0	0
13	61.7267	1536.38	32661.9	0	0
14	66.7038	1534.18	34271.1	0	0
15	71.6808	1532.19	35133.6	0	0
16	76.6579	1530.42	35279.4	0	0
17	81.635	1528.85	34750.8	0	0
18	86.6121	1527.47	33601.8	0	0
19	91.5892	1526.29	31898.5	0	0
20	96.5663	1525.29	29718.8	0	0
21	101.543	1524.47	27152.8	0	0
22	106.52	1523.83	24303.6	0	0
23	111.498	1523.37	21287.7	0	0
24	116.475	1523.08	18236.8	0	0
25	121.452	1522.97	15298.4	0	0
26	126.429	1523.03	0	0	0

**List Of Coordinates**

**External Boundary**

X	Y
150	1460
150	1522
128	1522
44	1577
30	1580
13	1585
0	1589

	<i>Project</i>				Diamond Valley Storage	
	<i>Analysis Description</i>				Cross Section A-A', Pseudo-Static	
	<i>Drawn By</i>		<i>Scale</i>		<i>Company</i>	
	CW				CW Soils	
<i>Date</i>				<i>File Name</i>		
2-12-20				19744-10A Section A-A' Pseudo-Static.slim		



<i>Project</i>	Diamond Valley Storage		
<i>Analysis Description</i>	Cross Section A-A', Pseudo-Static		
<i>Drawn By</i>	CW	<i>Scale</i>	<i>Company</i> CW Soils
<i>Date</i>	2-12-20	<i>File Name</i>	19744-10A Section A-A' Pseudo-Static.slim

