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June 30, 2014

Webber & Webber Mining Consultants — Job No. 14300-8
101 East Redlands Boulevard, Suite 240
Redlands, California 92373
Attention: Mr. George Webber

Dear Mr. Webber:

This letter transmits four copies of our slope stability investigation report for the Lynx Cat Mine located in the Hinkley area of San Bernardino County, California.

We are pleased to provide geotechnical services for this project. If you have questions or comments concerning this report, please contact this firm at your convenience.

Respectfully submitted,
CHJ CONSULTANTS

John S. McKeown

John S. McKeown, E.G.
Project Geologist

JMcK/JJM:lb

Distribution: Webber & Webber (4)

SLOPE STABILITY INVESTIGATION
LYNX CAT MOUNTAIN QUARRY
HINKLEY AREA
CA MINE ID# 91-36-0049
SAN BERNARDINO COUNTY, CALIFORNIA
PREPARED FOR
WEBBER & WEBBER MINING CONSULTANTS, INC.
JOB NO. 14300-8

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June 30, 2014

Webber & Webber Mining Consultants
101 East Redlands Boulevard, Suite 240
Redlands, California 92373
Attention: Mr. George Webber

Job No. 14300-8

Dear Mr. Webber:

Attached herewith is the slope stability investigation report for the Lynx Cat Mine located in the Hinkley area of San Bernardino County, California.

This report was based upon a scope of services generally outlined in our proposal, dated April 28, 2014, and other written and verbal communications.

We are pleased to provide geotechnical services for this project. If you have questions or comments concerning this report, please contact this firm at your convenience.

Respectfully submitted,
CHJ CONSULTANTS

John S. McKeown

John S. McKeown, E.G.
Project Geologist

JMc/JJM:lb

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SLOPE STABILITY INVESTIGATION
LYNX CAT MOUNTAIN QUARRY
HINKLEY AREA
CA MINE ID# 91-36-0049
SAN BERNARDINO COUNTY, CALIFORNIA
PREPARED FOR
WEBBER & WEBBER MINING CONSULTANTS, INC.
JOB NO. 14300-8

INTRODUCTION

We have prepared a slope stability investigation for the Lynx Cat Mountain mine slopes in the Hinkley area of San Bernardino County, California. Our services included evaluation of kinematic and global slope stability for proposed rock slopes as outlined in our proposal dated April 28, 2014. The purposes of our evaluation were to evaluate the site conditions and provide recommendations for configuration of suitable mine and reclamation slopes with regard to kinematic and limit-equilibrium stability.

To orient our investigation, we reviewed the following documents:

- Gray Granite Mine Plan, Calico Rock Milling, dated October 10, 1990, scale 1" = 200', 10-foot contour interval; stamped "Official Copy, Approved Mine Plan, County Planning Commission"

- Lynx Cat Mountain, Draft Mine Plan, by Merrell Johnson Co. for Matcon Corp., dated April 11, 2014

- Geologic Map of the Barstow (15-minute) Quadrangle by T.W. Dibblee, Jr., 1960, April 23, 2013, scale 1" = 1 mile

The approximate location of the mine area is shown on the attached Index Map (Enclosure "A-1"). The results of our investigation, together with our conclusions and recommendations, are presented in this report.

SCOPE OF SERVICES

The scope of services provided during this slope stability investigation included the following:

- Review of geologic mapping by Dibblee (1960 and 1967)
- Review of aerial imagery dated 1994, 2005, 2006, 2007 and 2009
- Review of the proposed slope and benching plan
- Site-specific geologic mapping and collection of geologic structural data
- Collection and testing of large rock samples for measurement of strength properties
- Evaluation of site seismic history and development of suitable design site accelerations
- Geologic (kinematic) evaluation of the proposed rock slopes and global slope stability calculations of the proposed rock slopes under static and seismic conditions
- Evaluation of geologic hazards including seismic shaking levels
- Evaluation of stability results and preparation of a report summarizing our findings and providing recommendations for final slope reclamation

PRIOR INVESTIGATIONS

A map (1960) and report (1967) by Dibblee include a description of the geologic formations of the western Mojave Desert and include the area of the subject quarry. Dibblee's report and maps describe the granitic rock outcropping within the quarry site as Cretaceous-age quartz monzonite of a type that is extensively exposed in the western Mojave Desert region. Thompson (1929) described the general geologic setting and groundwater conditions of the Harper Valley.

SITE DESCRIPTION

The mine is in unincorporated San Bernardino County, 14 miles northwest of downtown Barstow, California, and is accessed from State Highway 58 via Santa Fe Avenue and an un-named road. The mine is located in a rocky hillside area mantled with and surrounded by aprons of unconsolidated alluvial and colluvial sediments, typical of the Mojave Desert province. The Mojave Desert province is a geographic region bounded on the southwest by the San Andreas fault and the Transverse Ranges and on the northeast by the Garlock fault. The Mojave Desert is an ancient feature formed in response to the inception of movement on the San Andreas and Garlock faults. The region is characterized by broad alluviated basins that conceal a previously mountainous topography.

At the time of our investigation, mining was not occurring and equipment was not present on the site. Several stockpiles of large boulders were present west of the quarry.

The terrain in the mine area includes boulder outcrops and surface deposits/mantle of colluvium and alluvium. The surface deposits are texturally grussy, consisting of angular minerals grains and platy biotite flakes forming a medium- to coarse-grained sandy soil. Bedrock types in the quarry area include Mesozoic-age quartz monzonite and quartz diorite (located off site to the east). A more detailed description of geologic units in the quarry area is provided in a later section of this report. Ground-based photographs of the site and selected features are included in Appendix "D".

The mine site occupies an area of rolling bedrock topography surrounded by an alluvial apron southwest of Harper Lake. Elevations within the mine boundary area range from approximately 2,390 feet above mean sea level (amsl) to 2,150 feet amsl. Mining has occurred in the north project area as a generally west-facing quarry excavation forming clean rock slopes approximately 25 feet high separated by 10-foot-wide benches (Photos 2 and 3, Appendix D). Quarry cuts expose hard, clean, unweathered gray quartz monzonite bedrock. The pit is configured as an alcove and is accessed via an approach road from the west. An expansion area is located south of the existing quarry and consists of native boulder outcrops on a domelike bedrock hill (Photos 6, 7 and 8,

Appendix D). Utilities or permanent structures are not located within the site. Vegetation in undisturbed areas of the mine area consists of scattered creosote and desert shrubs (Photo 1, Appendix D). A locally abundant scatter of household debris and firearms-related detritus are present in the quarry.

Enclosure "A-3" (Site Map), presented on a photographic base, depicts the quarry area and the local geologic units and identifies numbered locations referenced in structural and geologic mapping for slope analysis during this investigation.

MINING AND RECLAMATION PLANS

According to the Mine Plan and Draft Mine Plan maps and cross sections, final quarry slopes are planned at an overall angle of approximately 29 degrees. This is obtained using 1.5 (horizontal) to 1 (vertical) bench face slopes to a maximum height of 160 feet. The benching scheme indicates 24-foot-high cuts with 10-foot-wide benches. All of the mine slopes are anticipated to be formed in bedrock. The geometry of proposed mine slopes was modeled for the highest mine slope determined from the existing terrain and planned bottom depth as shown in the cross section (Enclosure "C-3"). In consideration of the rock structure and existing joint conditions (described in a following section), a bench face angle of 63 degrees was also evaluated for individual bench slopes.

FIELD INVESTIGATION

A certified engineering geologist mapped existing quarry exposures and native bedrock outcrops on May 6, 2014. Rock exposures within the site include mined faces and surface cuts. Adjacent undisturbed areas include native bedrock outcrops. Our investigation included examination of existing quarry exposures, and outcrops and surface mapping of the mine area. We mapped approximate geologic contacts using aerial imagery. Structural data, including joint, shear and foliation orientations, were measured using a Brunton compass and clinometer. Structural and geologic data were recorded in a notebook and on an aerial-photographic base. Our field program focused on rock strength and condition and identification of continuous features that could affect kinematic stability of quarry slope faces. The location and extent of available exposures, including mined cut slopes and road cuts, provided the data necessary to characterize the structural geology of the site. We used prior mapping by Dibblee (1960) for geologic unit nomenclature. We also examined aerial imagery. A Site Map (Enclosure "A-3"), based on data collected during the field investigation and mapping review, is provided in Appendix "A". Large samples of representative resource rock were collected and returned to our laboratory for analysis of unconfined compressive strength and unit weight. Geologic structural mapping areas referred to herein are numbered and indicated on the enclosed Site Map (Enclosure "A-3").

GEOLOGY OF THE LYNX CAT MOUNTAIN MINE SITE

The mine is located in the Mojave Desert, an arid region of southern California characterized by crystalline bedrock hills separated by sandy plains and dry playas with sparse vegetation. An Index Map showing the mine location is included as Enclosure "A-1". The geologic nomenclature of Dibblee (1960) for bedrock units is adapted for this report. The geologic units are discussed below from oldest to youngest.

qm: The oldest rocks in the mine area, and resource material, consist of Mesozoic intrusive quartz monzonite. The quartz monzonite is gray, medium-grained, homogenous and equigranular. Dibblee (1960) described the mineralogy as "quartz, orthoclase and plagioclase in generally equal proportions." The qm unit is hard to very hard, fresh to very slightly weathered in quarry cuts, and develops a dark brownish black patina in native outcrops.

Qa: Young colluvium and alluvium form a mantle on flatter slopes and low-lying areas of the site. These sediments include active surfaces and lack well-developed patina on clasts.

Fill is associated with material stockpiles, cleared and grubbed areas of the site and working areas and roads. The fill is derived from local materials, including alluvium and bedrock. This unit is not included on the Site Map as it is limited in area and thickness.

GEOLOGIC STRUCTURE

The dominant feature of the rock mass within the mine boundary is a steeply dipping, continuous and parallel north-to-south-trending joint system. Strike of individual joints in this system typically ranges from 185 to 190 degrees. Additional structures include two steeply dipping orthogonal joint systems striking between 150 and 170 degrees and 65 to 75 degrees. Together with a fourth, flat-lying, less continuous joint system, these structures constitute an orthogonal joint system common to granitic outcrops. Examination of aerial imagery shows these structures in the existing quarry and as native outcrop features. The rock mass is distinctly compact, hard and homogenous—generally lacking dikes or veins.

Uncommon, continuous zones of closely foliated, highly weathered rock were measured to strike between 100 and 120 degrees, 270 degrees and 150 degrees. Shear or gouge material was not present within these zones; rather, a tight foliation fabric in original rock material up to 18 inches wide was observed (Photo 4, Appendix D). Weathering appeared to extend to greater than typical depths along these zones, which may be related to deep weathering along selected continuous joints rather than the result of mechanical shearing.

A discontinuous laminar foliation revealed by differential weathering in a single outcrop location was measured (Photo 5, Appendix D). The foliation appears to mimic the strike of the dominant north-south oriented joint system. Natural outcrops include common features of arid weathering of granitic rock such as dark surface patina, exfoliation (onion-skin) joints and orthogonal joints systems (Photos 7 and 8, Appendix D). The surface weathering profile is generally thin—extending about 3 to 5 feet below natural surface outcrop areas.

Faults or fault-related features were not observed during field mapping. The orientation of structural features was measured and recorded in the discontinuity data set (Enclosure "B-1").

FAULTING AND SEISMICITY

In order to assess regional seismic sources and develop ground motion for evaluation of potential seismic effects on stability of finished slopes, we collected data for regional faults and historic earthquakes and calculated deterministic peak ground accelerations for the regional seismic sources.

The tectonics of the southern California region are dominated by the interaction of the North American and Pacific tectonic plates. These plates slide past each other in transform motion across a region extending from the Eastern California shear zone to the offshore zone. Slip is also accommodated by rotation of crustal blocks such as the western Transverse Ranges (Dickinson, 1996). The San Andreas fault zone is the major surface expression of the tectonic boundary and accommodates most transform slip between the Pacific and North American plates. Slip across the plate boundary is also accommodated by other northwest-trending strike-slip faults related to the San Andreas system, such as the San Jacinto and Elsinore faults.

LOCAL AND REGIONAL FAULTS:

The Lenwood-Lockhart fault is located approximately 4 miles northwest of the site. The Black Mountain fault of the Harper fault zone is located approximately 6 miles northeast of the site. The Helendale-Lockhart fault is located approximately 12 miles southwest of the site. These faults are part of the Eastern California shear zone system, which produced surface rupture during the magnitude 7.3 Landers earthquake in June 1992. The magnitude 7.1 Hector Mine earthquake in October 1999 produced surface rupture along the Lavic Lake, Pisgah-Bullion and Mesquite Lake faults. Surface rupture was produced by a magnitude 5.2 earthquake along the Galway Lake fault in May 1975. Estimated peak ground acceleration (PGA) for maximum magnitude events on these faults is provided in Table 1.

Active faults were not identified within the mine area during our review of published and unpublished literature and maps, examination of aerial photographs or field mapping. Accordingly, surface fault rupture in the quarry area is not anticipated.

REGIONAL SEISMICITY:

A map of recorded earthquake epicenters is included as Enclosure "A-4" (Epi Software, 2000). The epicenters and magnitudes are based on data from the California Institute of Technology - Southern California Earthquake Data Center catalog. This enclosure presents circles as epicenters of earthquakes with magnitude equal to or greater than magnitude 4.0 recorded from 1932 through 2012.

GROUND-SHAKING HAZARD

The ground-shaking hazard at the site was evaluated from a deterministic standpoint for use as a guide to formulate an appropriate seismic coefficient for use in slope stability analyses.

A deterministic evaluation of seismic hazard was performed for the Lenwood-Lockhart fault and other regional faults using the attenuation relations of Boore and Atkinson (2008), Campbell and Bozorgnia (2008) and Chiou and Youngs (2008). These data are summarized in the following table.

Table 1: Summary of Regional Seismic Sources			
Fault/Earthquake	**Magnitude**	**Distance (miles)**	**Peak Ground Acceleration (g)**
Lenwood-Lockhart	7.5	4	0.41
Black Mountain (Harper)	7.0	6	0.38
Helendale-South Lockhart	7.4	12	0.28
Calico-Hidalgo	7.4	26	0.15
Garlock	7.5	38	0.11
Hector Mine	7.1	49	0.07
Landers	7.4	34	0.12

The design peak ground acceleration according to 2013 CBC is 0.51g.

The simplified procedure of Bray and Travasarou (2009) for selection of critical acceleration (Kh) as one-half PGA is commonly used for slope stability calculations for habitable structures. Their method is not typically required or applicable for quarry slope design. Given the project location in an area of moderate seismic potential, we used Kh = 0.20, consistent with Bray and Travasarou (2007), to approximate one-half the value of PGA from the deterministic calculation for the closest faults.

The Kh = 0.2 is also consistent with a conservative application of methods described by Seed (1979). Seed (1979) considered the size of the sliding mass and earthquake magnitude in selection of Kh. For large slopes, Seed suggested Kh = 0.15 for sites near faults capable of generating magnitude 8.5 earthquakes. The closest fault to the site, the Lenwood-Lockhart fault, is assigned a characteristic magnitude of 7.5. Based on the method of Seed (1979) and the seismic setting of the site, our selection of Kh = 0.20 is therefore conservative and appropriate for evaluation of proposed mine slopes.

GROUNDWATER

We observed no seepage, springs or other evidence for shallow groundwater within the mine boundary during geologic mapping. The site is at an elevation of 2,200 feet amsl approximately 1 mile south of Harper Dry Lake. The closest surface water occurs in a pond about 3.3 miles northwest of the mine at an elevation of 2,030 feet amsl. Groundwater-level measurements in a well located approximately 1/2 mile north-northeast of the existing quarry at an elevation of 2,060 feet amsl indicated groundwater elevations on the order of 2,045 feet amsl (DWR, 2014). The lowest planned mine elevation is 2,200 feet amsl; therefore, groundwater is not anticipated within the depth of the proposed mine.

Based on the presence of non-liquefiable bedrock, the potential for liquefaction and other shallow groundwater-related hazards at the site is considered to be very low. The quarry bottom may be exposed to periodic ponding of surface water after locally heavy precipitation. However, such ponding is anticipated to be shallow and short-lived—lasting only as long as evaporation/infiltration occurs—and therefore, this transient water is not considered in slope stability calculations. Groundwater is not anticipated to significantly affect the stability of the proposed slopes; therefore, we considered dry conditions in the slope stability calculations.

SLOPE STABILITY

The term "landslide", as used in this report, refers to deep-seated slope failures that involve interbench-scale (whole slope) features with a potential to reduce the long-term stability of reclaimed slopes. Landslides are typically related to the structure of the parent material. In contrast surficial failures are shallow and potentially affect limited bench face zones. These small-volume surficial failures are a maintenance item for typical quarries and can be mitigated by inclusion of safety benches in the reclaimed slope configuration. Accumulation of talus and soil on benches is considered an aid in the establishment of vegetation within a reclaimed mine.

The susceptibility of a geologic unit to landsliding depends on various factors, primarily: 1) the presence and orientation of geologic structures, such as joints, fractures, faults or clay beds, 2) the height and steepness of the slope, 3) the presence and quantity of groundwater and 4) the occurrence of strong seismic shaking.

Our geologic mapping of the quarry included observation of lithologic distribution and measurement of the orientation of bedrock structures that influence kinematic rock slope stability. Enclosure "B-1" presents the measured orientation of joints, foliation and shears in tabular format. Data collection areas are indicated by number on the Site Map (Enclosure "A-3"). These kinematic data were compiled into separate databases for the existing quarry and expansion area, respectively, using the Dips 6.0 software by Rocscience (2012). We performed kinematic analysis using this database (discussed in the section titled "Kinematic Analysis").

The granitic bedrock within the quarry area has moderately- to well-developed joint systems and few highly weathered zones. These zones are poorly developed with respect to clay gouge or sheared materials but are continuous and steeply dipping. Strong foliation along these zones contrasts with adjacent fresh bedrock; therefore, these zones are labeled and treated as 'shear' zones in kinematic analysis.

The resource rock is a hard to very hard rock mass with respect to global stability. Jointing within the quarry is generally widely spaced (1 to 3 feet) and moderately continuous (3 to 30 feet) to highly continuous (30 to 100 feet). Joint surfaces were generally moderately rough to rough. Our investigation focused on the more continuous structures as these have a greater potential to define kinematic behavior in rock masses.

Reclamation slopes are proposed at an overall angle of about 29 degrees configured as 24-foot-high bench faces inclined at 1.5(h) to 1(v) separated by 10-foot wide benches. Based on properties measured from rock samples and examination of the existing quarry configuration relative to structural features of the rock mass, it appears that steeper inclinations of bench faces, resulting in a steeper overall slope profile, is feasible. This configuration would better utilize the existing steep joint system that strikes north-south within the quarry area.

We performed slope evaluations for both the proposed slope configuration presented in the Mine Plans and a steeper configuration based on natural joint conditions observed in the existing quarry. For the second scenario, we utilized a bench face angle (the inclination of individual bench faces) of 63 degrees at 24-feet-high separated by 15-foot-wide benches.

Enclosures "B-2.1" and B-2.2" present kinematic diagrams of the total discontinuity data set collected for the existing quarry area and proposed expansion area, respectively (representing 84 data points), plotted with a 45-degree friction angle and slope angles for 34-degree overall (mine plan) and 63-degree (suggested) bench face slopes. These plots reveal steeply dipping central joint clusters, the majority of which do not daylight from the proposed 34-degree bench face slopes. For the steeper 63-degree bench faces, the joints cluster on the 63-degree circle, indicating that mining of bench faces along the existing joint system will yield a stable, non-daylighted bench face.

We evaluated the kinematic (potential/theoretical failure modes) and global (whole rock) slope stability of the proposed reclamation slopes for representative material types. Rock strength properties for global stability calculations were modeled using Hoek-Brown criteria and results of laboratory testing. A discussion and summary of these analyses are presented below. The slope stability data and calculations are presented in Appendices "B" and "C".

KINEMATIC ANALYSIS:

Kinematic analysis is the evaluation of rock slope stability based on the orientation of structural discontinuities including joints, faults, shear zones, bedding and foliations. Kinematic analysis addresses the potential failure mode(s) and does not consider mass, force, shear strength or cohesion along surfaces as in a limit-equilibrium analysis. Limit-equilibrium of specific structures is addressed by global analyses that were also performed for the proposed slopes. Structurally controlled kinematic failure modes include planar, wedge and topple failures. Circular failure of highly fractured rock masses is also a potential failure mode and is considered in the analysis of global stability (presented in "Global Stability Calculations").

The kinematic evaluation considers the slope azimuth (facing direction), slope angle (slope plane) and frictional sliding angle of a planar surface versus the orientation of individual planar or linear features utilizing a stereonet diagram. Planar features include foliation planes, joints and weathered zones. Linear features include plane intersections that are modeled as dip vectors. The stereonet plots features as points (representing dip vectors or poles to planes) or lines (representing planes at the surface of a sphere). Construction of a critical zone representing a slope azimuth, angle and failure mode for planar, wedge or topple failure types allows evaluation of the relation of a particular discontinuity or discontinuity set to established potential failure criteria. Each plot includes a table that summarizes the number of features within the "critical" zone. The term "critical" refers only to the potential for failure along a given discontinuity based on its orientation relative to a free face surface. Other factors, such as the presence/absence of a releasing surface, roughness/cohesion of a surface or limit-equilibrium-type analysis, are addressed in global stability analysis.

We evaluated three slope azimuths (facing directions) with the suggested 63-degree bench face angle. The flatter 34-degree bench face angle is kinematically stable by examination of Enclosure "B-2.1" as the majority of discontinuities do not daylight in a 34-degree slope face; therefore, azimuth-specific evaluation was not performed for this slope angle. A data set was compiled from the measured discontinuities (Enclosure "B-1"). Locations of geologic structural mapping areas (numbered) are indicated on the attached Geologic Map (Enclosure "A-3"). The kinematic slope models are summarized in Table 2.

Table 2: Summary of Kinematic Models				
Mine Location	**Azimuth (facing direction)**	**Data Sets Applied**	**Slope Angle**	**Friction Angle**
Existing	315	1-4	34	45
			63	
	270	1-4	34	
			63	
	225	1-4	34	
			63	
Expansion	315	5-6	34	45
			63	
	270	5-6	34	
			63	
	225	5-6	34	
			63	

Stereonet analysis for representative slopes was performed utilizing the data from mapped geologic structures within the site (Enclosure "B-1") and Dips 6.0 software by Rocscience (2012). We used intersection plots to evaluate the potential for wedge sliding, pole plots with cluster analysis to evaluate the potential for toppling, and vector and pole plots to evaluate the potential for planar sliding. It is observed that the proposed overall approximately 34-degree bench face angle (and associated whole slope angle of 29 degrees with benches) precludes formation of the critical zone in kinematic diagrams (analysis) with the 45-degree friction angle used for this analysis (Enclosures "B-3.1" through "B-3.3").

Planar Sliding

Planar sliding was evaluated separately for existing quarry and expansion areas using a bench face angle of 63 degrees. The stereonet data are depicted with dip vectors (points) and as poles on the stereonet plots (Enclosures "B-4.1" through "B-4.6" and "B-7.1" through "B-7.3"). Poles to planes and dip vectors were contoured to identify concentrations of points. The plots include a depiction of lateral limits, friction circle and critical zone. The kinematic plots of these data are presented in Appendix "B".

The results of the planar sliding analysis indicate a low potential for planar sliding for all slope aspects at the suggested bench face angle based on mining of bench slopes along existing north-south oriented joint surfaces. It is expected that mining to less steep face angles will produce greater disturbance to, and therefore less stable, finished slopes. Planar sliding within bench faces can be mitigated by inclusion of safety benches and scaling of loose blocks during mining.

Wedge Sliding

Wedge sliding was evaluated separately for existing quarry and expansion areas using a bench face angle of 63 degrees. Since wedge geometry is formed by two or more planes, the data were contoured to identify concentrations of intersections. The results indicate a low to moderate potential for wedge formation in the southwest-facing aspect of the existing quarry and expansion area and a moderate to high potential for wedge formation in west and northwest-facing slopes for both areas. Field observations suggested clean, wedge-free faces in existing quarry cuts along the dominant joint system; therefore, we do not anticipate the occurrence of large wedge failures in the planned mining. Scaling of loose material appears to be an effective means to mitigate wedge-type failures in the existing quarry. Scaling of loose blocks or wedges should be performed during excavation of quarry benches, and inclusion of safety benches is proposed for final slopes, thus mitigating the effects of wedge-generated rockfall. Kinematic plots of these data are presented in Appendix "B". The overall potential for wedge-type failures is low to moderate.

Toppling

Toppling potential was evaluated separately for existing quarry and expansion areas using a bench face angle of 63 degrees. Kinematic plots of these data are presented in Enclosures "B-6.1" through "B-6.3" and "B-9.1" through "B-9.3".

The results of toppling analysis indicate a low potential for toppling in proposed northwest-, west-, and southwest-facing slopes. Toppling failure is limited to the height of bench face slopes; therefore, the volume of topple-generated material is expected to be low. In addition, scaling of loose material during excavation of benches can be performed to mitigate potential instability. Inclusion of safety benches of sufficient width in the final slope geometries is anticipated to mitigate hazards due to toppling. Based on anticipated reclamation slope conditions, use of steel netting or other structural installations to mitigate toppling or rockfall is not considered necessary; however, these measures can be considered if warranted by future observation or conditions.

Kinematic Evaluation—Conclusions

The overall proposed mine slope angle (approximately 29 degrees) precludes formation of a critical zone in kinematic diagrams (analysis) with the 45-degree friction angle used for this analysis. Therefore, the proposed overall mine slope angles are considered kinematically stable for all slope aspects (facing directions). The suggested bench slope angle of 63 degrees, based on the geometry of dominant joint sets in the mine area, would result in an overall finished slope angle of 43 degrees.

The results of the planar sliding, wedge sliding and toppling failure analyses indicate low to moderate potential for some proposed slope aspects in bench face slopes. The potential for rock fall or minor slope failure can be mitigated by scaling of bench slopes during mining. Use of steel netting, rock bolts, anchors or other mechanical means is not anticipated to be required for the proposed mine reclamation. The overall slope angle and bench geometries proposed and suggested appear to be suitable for the proposed mining and reclamation plans. Bench face angles were observed to exist at near-vertical to approximately 65-degree angles, suggesting that a 63-degree angle can be utilized in bench face design. Individual bench faces and widths should be adjusted locally, if necessary, to produce stable final slope configurations In addition, scaling of loose or dislodged blocks from bench face cuts should be performed near the completion of final slope excavation at any working level. This is necessary as portions of finished slopes may not be accessible to scaling equipment with progression of mining.

As is typical of all hard rock quarry operations, minor toppling, sliding and wedge failures—expressed as talus accumulations on benches along the base of existing steep cuts—may occur during and after mining. The rate of talus accumulation decreases with time, and roll down can be controlled by inclusion of safety benches in the overall slope geometry.

The slope configurations evaluated in this report are expected to produce a suitably configured slope geometry that mitigates rockfall for the proposed quarry slopes.

GLOBAL STABILITY CALCULATIONS:

Global (rotational) stability was analyzed using Spencer's method under seismic conditions for rotational failures utilizing the SLIDE computer program, version 6.029 (Rocscience, 2014). The seismic stability calculations were performed using a lateral pseudostatic coefficient "Kh" of 0.20 as discussed previously. Static conditions were not considered as the results of seismic stability indicated very stable rock slopes. Slip surface search models were used for both circular and non-circular failure modes. Groundwater was not considered in the global stability evaluation based on the lack of evidence for seepage and regional groundwater table approximately 150 feet lower than the quarry area.

According to the Mine Plan and Draft Mine Plan maps and cross sections, final quarry slopes are planned at an overall angle of approximately 29 degrees. This is obtained using 1.5(h) to 1(v) bench face slopes to the maximum slope height with a benching scheme of 24-foot-high cuts with 10-foot-wide benches. The geometry of proposed mine slopes for both the existing quarry and expansion area was modeled for the highest mine slope proposed determined from existing terrain and planned bottom depth as shown in the cross sections (Enclosures "C-1" and "C-2"). In consideration of the rock structure and existing joint conditions a "suggested" bench face angle of 63 degrees was also evaluated for a 160-foot-high reclaimed slope (Enclosure "C-3").

The strength parameters for a generalized rock unit were modeled with the Generalized Hoek-Brown criteria (Hoek and Karzulovic, 2000; Hoek, Carranza-Torres and Corkum, 2002), using the results of laboratory testing, field strength criteria, such as how easily rock can be broken with a hammer, and the SLIDE program's integrated calculator application.

The strength parameter values are presented in Table 3. In general, the materials properties were measured by field and laboratory tests and modeled based on test results and our experience with similar materials.

Table 3: Quartz Monzonite - Strength Parameters

	Value	**Description**
Unit Weight (pcf*)	160	Estimated
Intact UCS[1] (psf**)	2.628×10^6	Measured by laboratory testing
Geological Strength Index	65	Blocky/Undisturbed/Interlocked with good surface conditions
Intact Rock Constant (mi***)	32	Granite
Disturbance Factor	1	Production blasting

[1] Uniaxial Compressive Strength test result
* pcf = pounds per cubic foot
** psf = pounds per square foot
*** mi = unitless constant

The results of our global slope stability analyses are summarized in Table 4. Details of stability calculations including material type boundaries, strength parameters, the minimum factor of safety and critical slip surface are presented in Enclosures "C-1" through "C-3".

Table 4: Summary of Global Stability Models and Results					
Model	**Material**	**Slope Configuration**	**Static Factor of Safety**	**Seismic Factor of Safety (k=0.2)**	**Enclosure Number**
Existing Quarry, Reclaimed Slopes	Quartz Monzonite	H = 80 Feet 29°	Not evaluated	9.84	C-1
Expansion Area, Reclaimed Slopes		H = 160 Feet 29°		7.29	C-2
Suggested Benching Scheme		H = 160 Feet 43°		5.82	C-3

As shown in Table 4, sufficient seismic factors of safety in excess of 1.1—in conformance with OMR criteria—were indicated for the modeled rock slope configurations for the proposed slope heights and gradients. These values of factors of safety exceeded the required 1.5 value for the static condition; therefore, static evaluation was not performed. Steeper bench face angles than those depicted in the Mine Plan should be considered based on the high rock strength and structural control of past excavation along the dominant north-south joint system.

CONCLUSIONS

Based on geologic field observations and evaluation and the results of slope stability calculations, it is the opinion of this firm that the proposed final rock slopes are feasible with respect to slope stability from a geotechnical standpoint, provided the recommendations contained in this report are implemented.

Based upon our analyses, an overall 29-degree slope or 43-degree slope up to approximately 160 feet in height is suitably stable against gross failure for the anticipated long-term conditions, including the effects of seismic shaking. Excavation of the bench faces along existing dominant joint faces will aid in overall stability of final slopes. Inclusion of safety benches in the overall slope profiles together with scaling of finished bench faces is anticipated to mitigate raveling or rockfall.

Groundwater seepage, springs or indications of shallow groundwater were not observed and are not known to exist within the mine area. Based on the elevation of the proposed pit bottom, groundwater is not expected to occur within the maximum mined depth.

Active faults with the potential to produce surface rupture are not mapped within the mine boundary.

RECOMMENDATIONS

SEISMIC SHAKING HAZARDS:

Moderate to severe seismic shaking of the site can be expected to occur during the lifetime of the proposed mining and reclamation. This potential has been considered in our analyses and evaluation of slope stability.

PROPOSED CUT SLOPES:

The configuration of final quarry slopes, including wall height, wall angle and bench width, is controlled primarily by the type of mining equipment used and bench face angles that can be achieved (Ryan and Pryor, 2000). Typical wall heights in hard rock mines range from 40 to 50 feet, which is above the expected range for the proposed quarry reclamation.

The overall reclaimed slope angle and bench geometries proposed (29 degrees) and suggested (63 degrees) will be suitable for the proposed mining and reclamation plans. Bench face angles were observed to exist at near-vertical to approximately 63-degree angles, indicating that a 63-degree angle can be utilized in bench face design. Reclaimed bench faces should not be cut steeper than 65 degrees [1/2(h):1(v)] due to a west-dipping joint set at that approximate orientation. Individual bench face angles and widths may be adjusted locally, if necessary, to produce stable final slope configurations with ideal bench faces following existing steeply west-dipping joint planes. We recommend a minimum reclaimed bench width of 15 feet. The design width should be determined by the project mining engineer to be consistent with the design height and overall finished slope angles. In addition, scaling of loose or dislodged blocks from bench face cuts should be performed near the completion of final slope excavation at any working level. This is necessary as portions of finished slopes may not be accessible to scaling equipment with progression of mining.

The rock mass within the proposed mine area is generally hard, competent and capable of forming stable slopes at the proposed gradients for reclamation. The rock structure includes joint systems that have been characterized by mapping and analysis to yield suitably stable rock slopes. We did not observe geologic structures that exhibit exceptional continuity and adverse geometry with regard to planned slope aspects and that contain significant clay linings, water seepage or other potentially deleterious conditions during site mapping within the mine area. Where the highly weathered/shear zones are exposed, scaling should be performed to expose a stable rock surface to mitigate potential instability.

The proposed mine slope configurations are considered suitably stable under static and seismic conditions as reclaimed slopes. Inclusion of horizontal safety benches in final slope design is an effective protection from rockfall and will reduce tensional forces in surface rock and surface erosion rates (Highland and Brabowsky, 2008). Slopes may be protected with berms along the pit margins as necessary to prevent slope erosion in areas where overland flow is directed toward slopes.

Based on anticipated reclamation slope conditions, use of steel netting or other structural installations to mitigate toppling or rockfall is not considered necessary; however, these measures, as well as a berm at the toe of the final quarry slopes, can be considered if warranted by future observation or conditions.

Periodic geologic mapping of the reclamation slopes should be performed during slope construction (annual inspections during mining) to identify conditions that may preclude reclamation of the site in accordance with the approved reclamation plan.

LIMITATIONS

CHJ Consultants has striven to perform our services within the limits prescribed by our client, and in a manner consistent with the usual thoroughness and competence of reputable geotechnical engineers and engineering geologists practicing under similar circumstances. No other representation, expressed or implied, and no warranty or guarantee is included or intended by virtue of the services performed or reports, opinion, documents, or otherwise supplied.

This report reflects the testing and observations conducted on the site as the site existed during the investigation, which is the subject of this report. However, changes in the conditions of a property can occur with the passage of time, due to natural processes or the works of man on this or adjacent properties. Changes in applicable or appropriate standards may also occur whether as a result of legislation, application or the broadening of knowledge. Therefore, this report is indicative of only those conditions tested and/or observed at the time of the subject investigation, and the findings of this report may be invalidated fully or partially by changes outside of the control of CHJ Consultants. This report is therefore subject to review and should not be relied upon after a period of one year.

The conclusions and recommendations in this report are based upon observations performed and data collected at separate locations, and interpolation between these locations, carried out for the project and the scope of services described. It is assumed and expected that the conditions between locations observed and/or sampled are similar to those encountered at the individual locations where observation and sampling was performed. However, conditions between these locations may vary significantly. Should conditions that appear different than those described herein be encountered in the field by the client or any firm performing services for the client or the client's assign, this firm should be contacted immediately in order that we might evaluate their effect.

If this report or portions thereof are provided to contractors or included in specifications, it should be understood by all parties that they are provided for information only and should be used as such.

The report and its contents resulting from this investigation are not intended or represented to be suitable for reuse on extensions or modifications of the project, or for use on any other project.

CLOSURE

We are pleased to be of service and trust this report provides the information desired at this time. Should questions arise, please do not hesitate to contact this firm at your convenience.

REGISTERED GEOLOGIST JOHN S. McKEOWN NO. 2396 CERTIFIED ENGINEERING GEOLOGIST Exp. 08-30-15 STATE OF CALIFORNIA

Respectfully submitted,
CHJ CONSULTANTS

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JMc/JJM:lb

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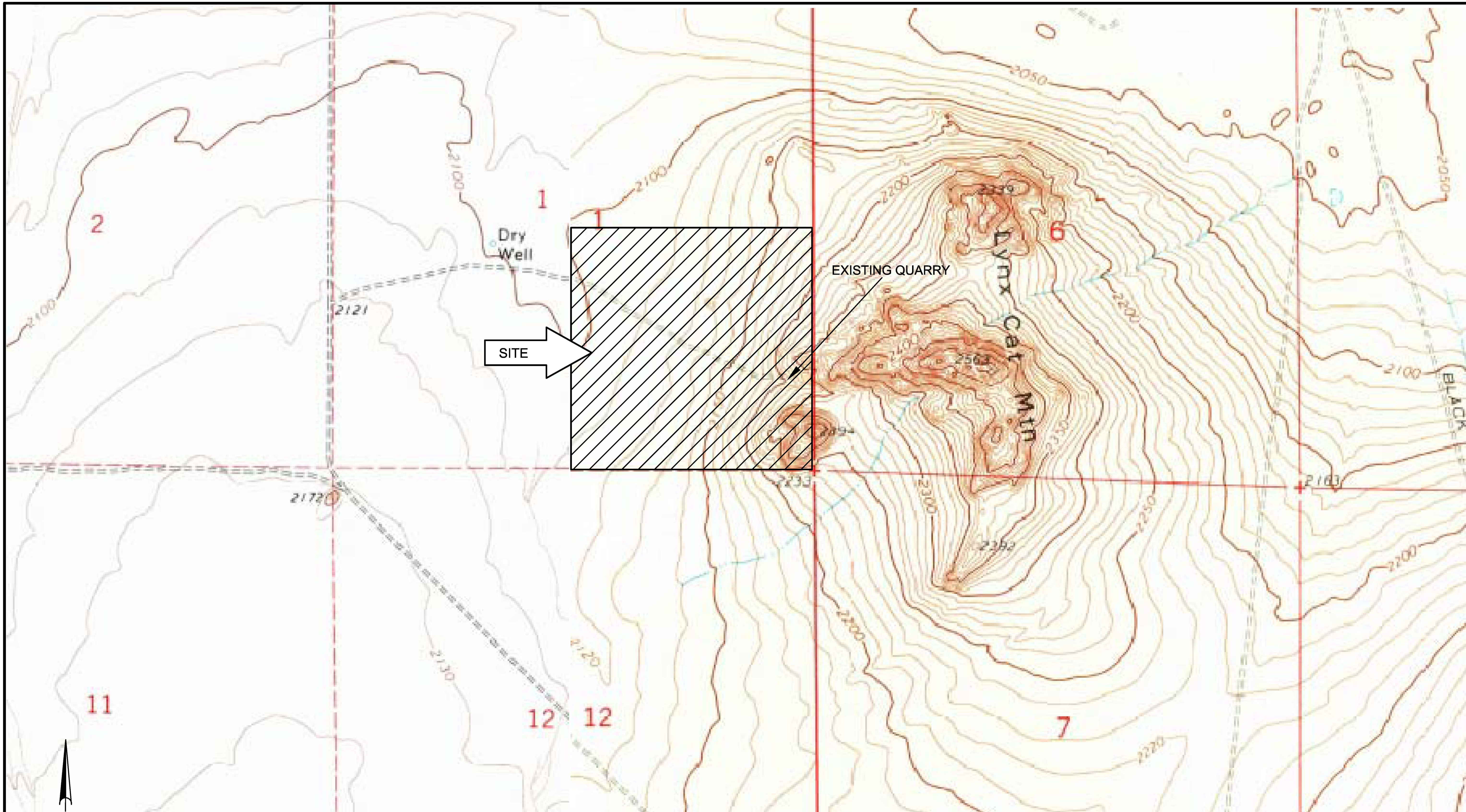
LIST OF AERIAL PHOTOGRAPHS

Google Earth web-based software application, aerial imagery dated May 28, 1994; December 30, 2005; January 3, 2006; January 30, 2006; July 16, 2007 and June 5, 2009.

Historic Aerials.com, imagery dated 2005.

APPENDIX "A"

GEOLOGIC MAPS



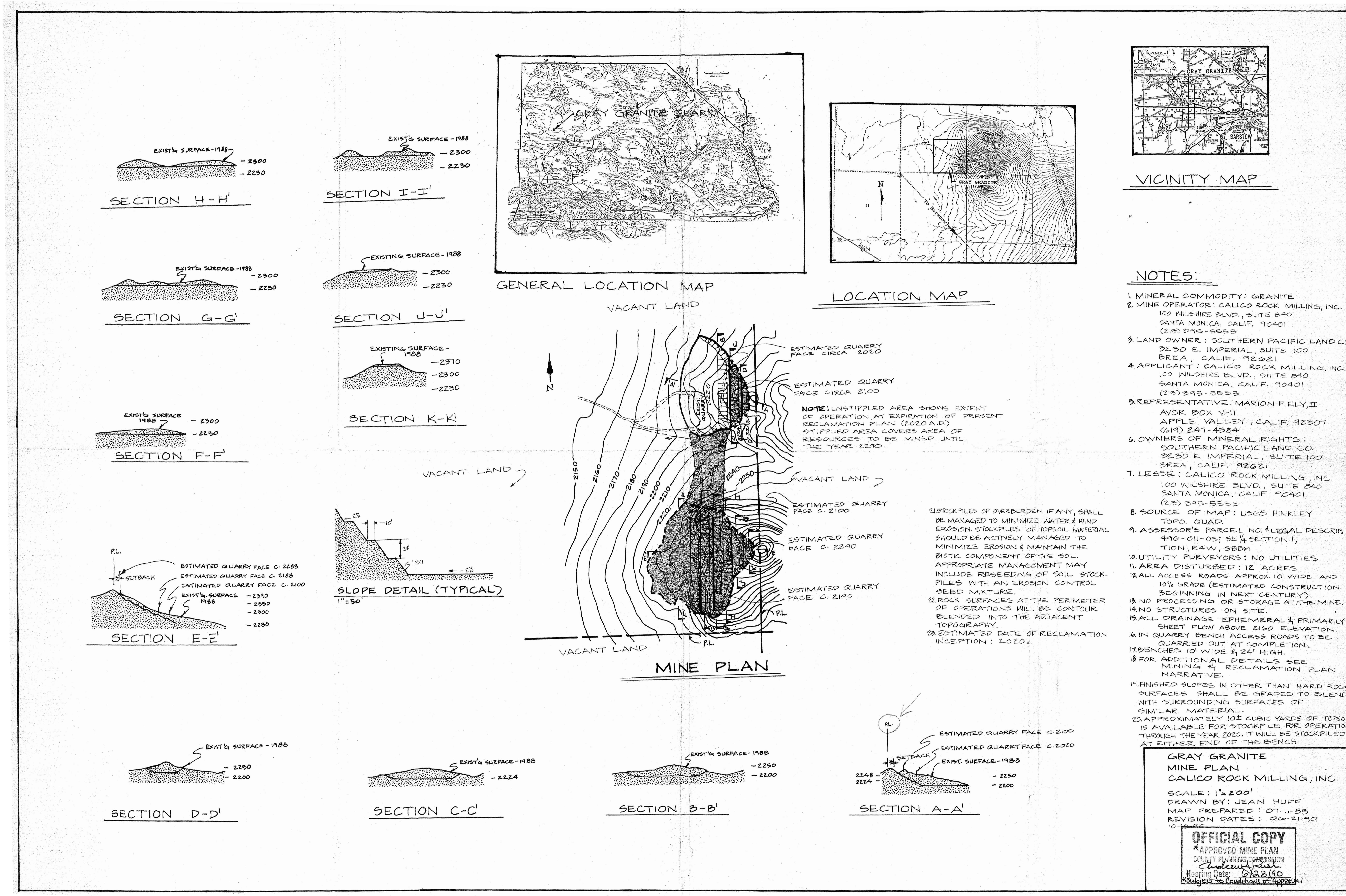
-N-

SCALE: 1" = 1000'

INDEX MAP

FOR: WEBBER & WEBBER MINING CONSULTANTS, INC.	SLOPE STABILITY INVESTIGATION LYNX CAT MOUNTAIN MINE NORTHWEST OF HINKLEY SAN BERNARDINO COUNTY, CALIFORNIA	ENCLOSURE "A-1"
DATE: MAY 2014		JOB NUMBER 14300-8

CHJ Consultants



-N-

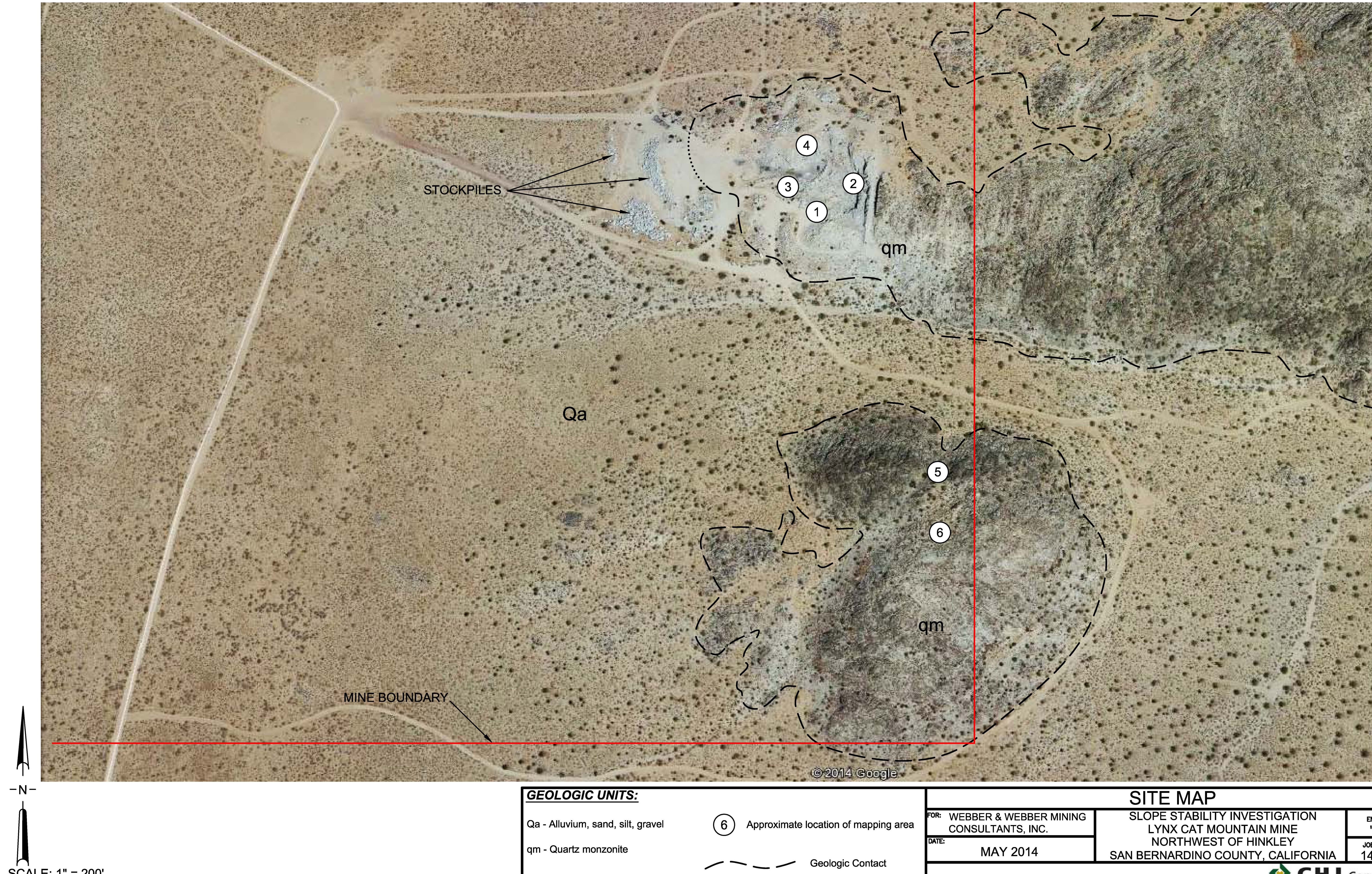
SCALE: 1" = 250'

0 250 500

EXISTING MINE PLAN

FOR: WEBBER & WEBBER MINING CONSULTANTS, INC.	SLOPE STABILITY INVESTIGATION LYNX CAT MOUNTAIN MINE NORTHWEST OF HINKLEY SAN BERNARDINO COUNTY, CALIFORNIA	ENCLOSURE "A-2"
DATE: MAY 2014		JOB NUMBER 14300-8

CHJ Consultants



GEOLOGIC UNITS:

Qa - Alluvium, sand, silt, gravel

qm - Quartz monzonite

6 Approximate location of mapping area

Geologic Contact

SITE MAP

FOR: WEBBER & WEBBER MINING CONSULTANTS, INC.

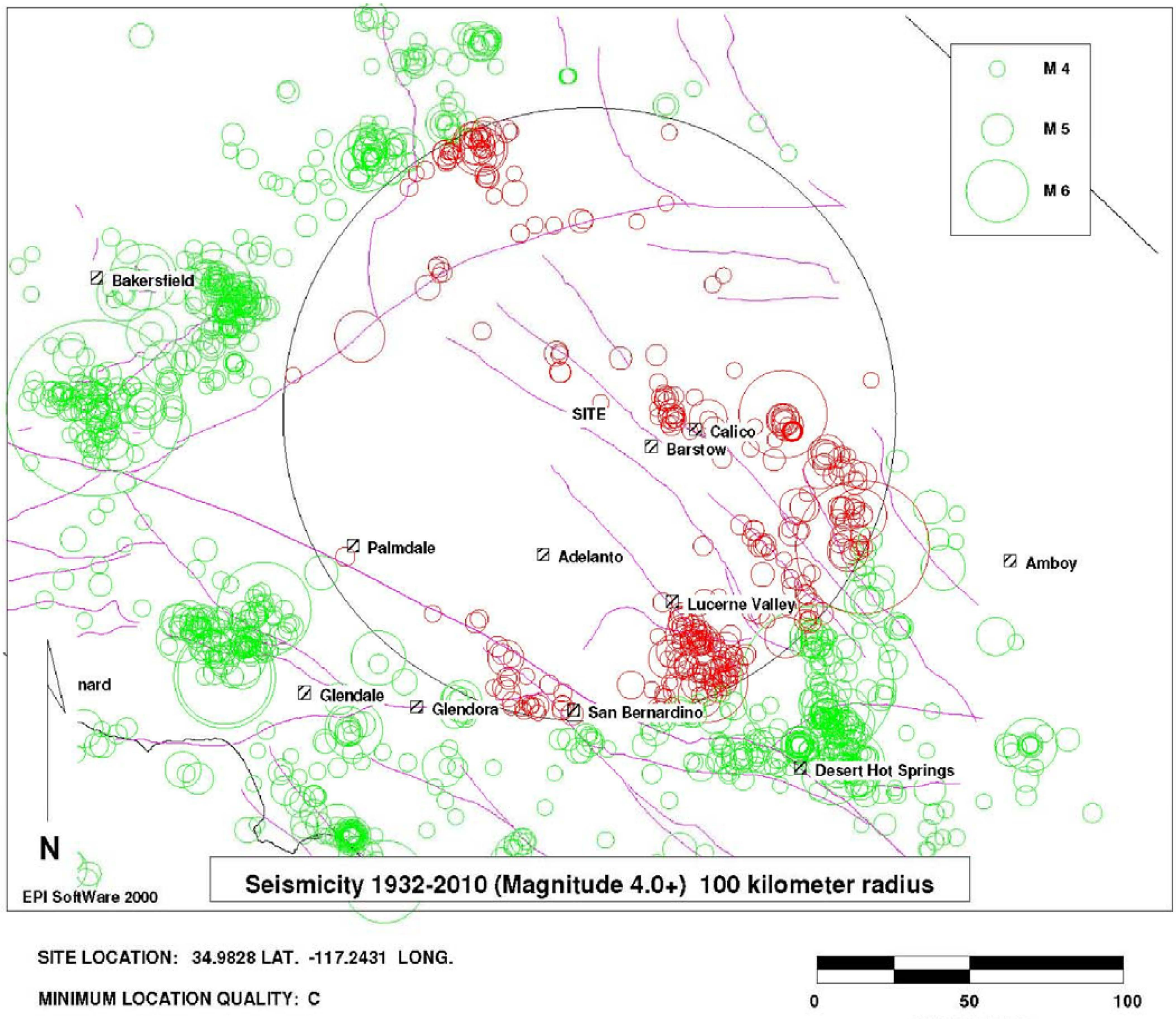
DATE: MAY 2014

SLOPE STABILITY INVESTIGATION
LYNX CAT MOUNTAIN MINE
NORTHWEST OF HINKLEY
SAN BERNARDINO COUNTY, CALIFORNIA

ENCLOSURE "A-3"

JOB NUMBER 14300-8

CHJ Consultants



SITE LOCATION: 34.9828 LAT. -117.2431 LONG.

MINIMUM LOCATION QUALITY: C

TOTAL # OF EVENTS ON PLOT: 1343

TOTAL # OF EVENTS WITHIN SEARCH RADIUS: 336

MAGNITUDE DISTRIBUTION OF SEARCH RADIUS EVENTS:

4.0- 4.9 : 305
5.0- 5.9 : 28
6.0- 6.9 : 2
7.0- 7.9 : 1
8.0- 8.9 : 0

CLOSEST EVENT: 4.1 ON MONDAY, JUNE 29, 1992 LOCATED APPROX. 5 KILOMETERS NORTHEAST OF THE SITE

LARGEST 5 EVENTS:

7.1 ON SATURDAY, OCTOBER 16, 1999 LOCATED APPROX. 98 KILOMETERS SOUTHEAST OF THE SITE
6.5 ON THURSDAY, APRIL 10, 1947 LOCATED APPROX. 63 KILOMETERS EAST OF THE SITE
6.4 ON SUNDAY, JUNE 28, 1992 LOCATED APPROX. 94 KILOMETERS SOUTHEAST OF THE SITE
5.8 ON SATURDAY, OCTOBER 16, 1999 LOCATED APPROX. 93 KILOMETERS SOUTHEAST OF THE SITE
5.8 ON WEDNESDAY, SEPTEMBER 20, 1995 LOCATED APPROX. 93 KILOMETERS NORTHWEST OF THE SITE

EARTHQUAKE EPICENTER MAP

FOR: WEBBER & WEBBER MINING CONSULTANTS, INC.	SLOPE STABILITY INVESTIGATION LYNX CAT MOUNTAIN MINE NORTHWEST OF HINKLEY SAN BERNARDINO COUNTY, CALIFORNIA	ENCLOSURE "A-4"
DATE: MAY 2014		JOB NUMBER 14300-8

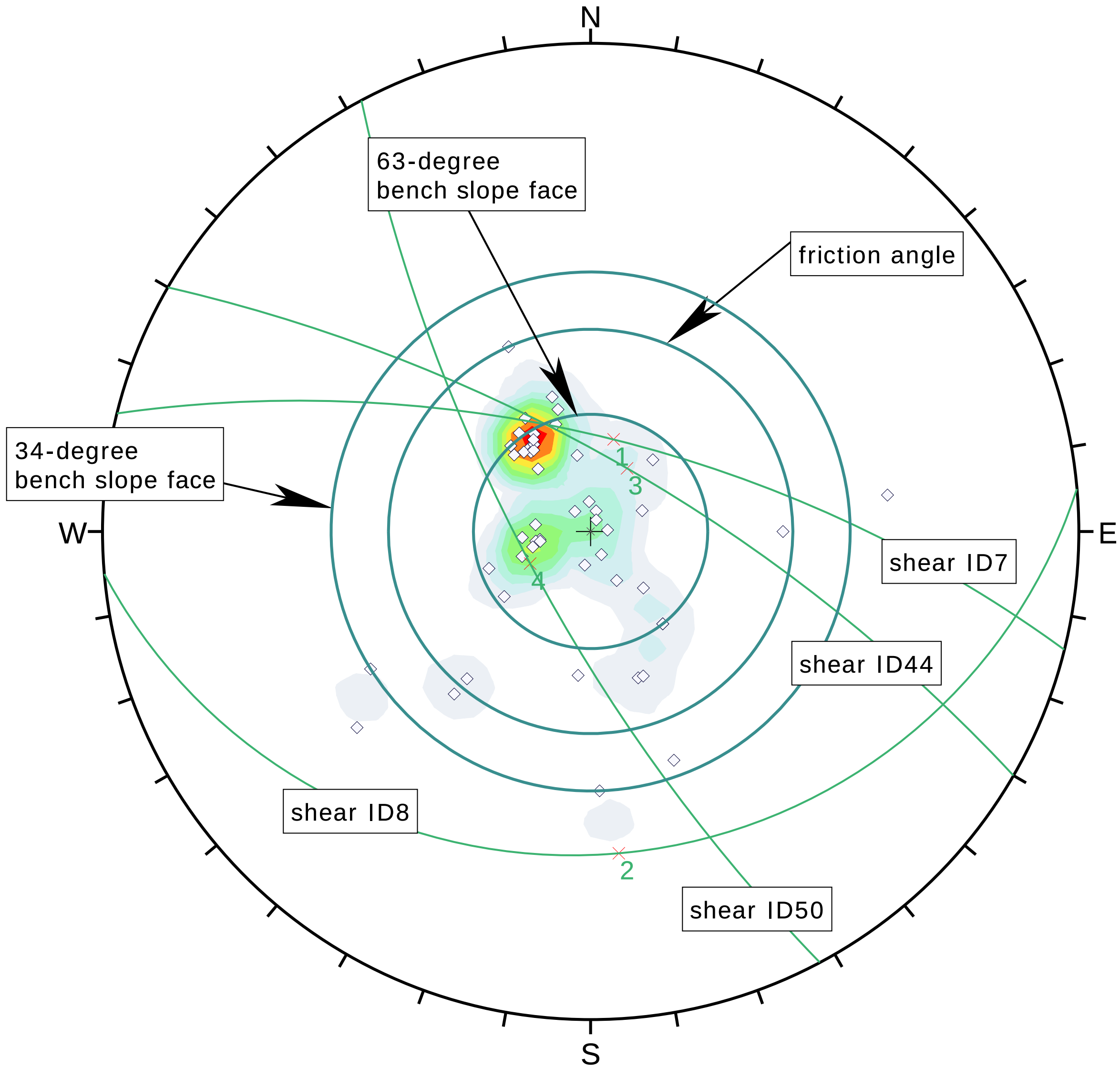
CHJ Consultants

APPENDIX "B"

KINEMATIC STABILITY EVALUATION

ID	Dip	Dip Direction	TYPE	LOCATION	CONTINUITY	ROUGHNES
1	65	315	joint	1	1	2.5
2	86	085	joint	1	1	2.5
3	85	015	joint	1	1	2.5
4	66	324	joint	1	1.5	2.5
5	67	323	joint	1	2	2.5
6	43	220	joint	1	2	2.5
7	68	014	shear	1	4	4
8	23	175	shear	1	3	3.5
9	83	357	joint	1	2	2.5
10	77	277	joint	2	5	2.5
11	47	090	joint	2	3	2.5
12	64	342	joint	2	3	1
13	60	330	joint	2	2	1
14	45	336	joint	2	1	3
15	78	261	joint	2	5	3
16	82	190	joint	2	2.5	2
17	71	320	joint	2	3	1
18	55	162	joint	2	2	2
19	84	322	joint	2	3	2
20	63	142	joint	2	1	3
21	84	155	joint	2	1	3
22	77	152	joint	2	1	2
23	66	327	joint	2	2	2
24	63	142	joint	2	3	4
25	37	160	joint	2	3	3
26	74	265	joint	2	5	2
27	77	260	joint	2	5	2
28	55	160	joint	2	1	3
29	61	345	joint	2	1	2
30	73	250	joint	2	5	2
31	26	230	joint	2	1	4
32	47	220	joint	3	4.5	1.5
33	68	041	joint	3	3	2
34	34	238	joint	3	1	3
35	62	324	joint	3	4	2
36	87	026	joint	3	2	1
37	27	083	joint	3	1	2
38	63	317	joint	3	1	2
39	65	250	joint	3	5	1
40	72	350	joint	3	4.5	2
41	65	233	joint	3	3	3
42	66	320	joint	3	3	2
43	72	137	joint	3	2	3
44	73	030	shear	3	3	3
45	77	068	joint	3	4	3
46	64	330	joint	3	4	1
47	58	344	joint	4	5	1
48	76	255	joint	4	2	3

ID	Dip	Dip Direction	TYPE	LOCATION	CONTINUITY	ROUGHNES
49	34	178	joint	4	1	5
50	74	242	shear	4	5	3.5
51	78	259	joint	4	5	2
52	67	325	joint	4	4	1
53	57	185	joint	4	4	2
54	65	328	joint	4	3	2
55	62	324	joint	5	5	2
56	33	050	joint	5	2	2
57	48	205	joint	5	2	4
58	38	075	joint	5	4	4
59	78	335	joint	5	2	2
60	58	008	joint	5	4	3
61	47	312	joint	5	3	3
62	67	225	joint	5	1	2
63	81	290	joint	5	2	3
64	84	035	joint	5	1	1
65	90	336	joint	5	1	2
66	83	076	joint	5	2	2
67	56	310	joint	5	2	3
68	57	325	joint	5	4	2
69	70	010	joint	5	3	3
70	34	075	joint	5	1	2
71	77	106	joint	5	1	1
72	61	306	joint	5	2	2
73	67	298	joint	5	3	2
74	79	125	fol	5	2	5
75	56	296	joint	5	4	2
76	53	345	joint	5	3	2
77	48	025	joint	5	2	2
78	64	300	joint	5	2	3
79	63	240	joint	5	4	2
80	87	331	joint	5	3	2
81	88	274	joint	5	2	2
82	66	350	joint	5	3	1
83	57	060	joint	5	2	3
84	65	330	joint	6	5	2
85	58	065	joint	6	3	3



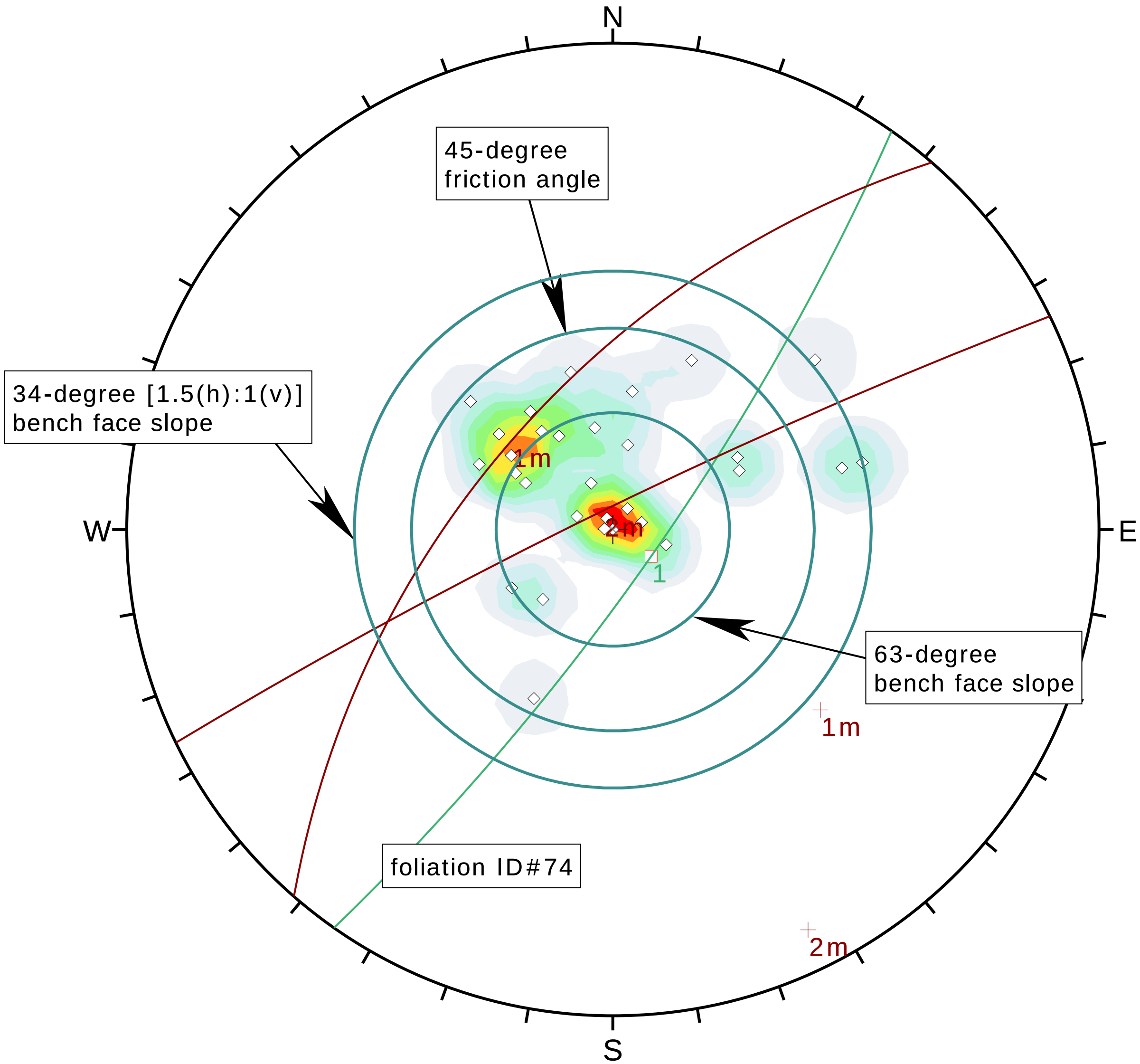
Symbol	TYPE	Quantity
◇	joint	50
×	shear	4

Color	Density Concentrations
	0.00 - 2.30
	2.30 - 4.60
	4.60 - 6.90
	6.90 - 9.20
	9.20 - 11.50
	11.50 - 13.80
	13.80 - 16.10
	16.10 - 18.40
	18.40 - 20.70
	20.70 - 23.00
Maximum Density	22.95%
Contour Data	Dip Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

Plot Mode	Dip Vectors
Vector Count	54 (54 Entries)
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain		
Analysis Description	Existing Quarry, Slopes vs. Friction, Vector Plot		
Drawn By	CHJ	*Author*	JMc
File Name	1-4 vector_34slope45friction.dips6	*Date*	5/22/2014
Enclosure	B-2.1		

DIPS 6.008



Symbol	TYPE	Quantity
□	fol	1
◇	joint	30

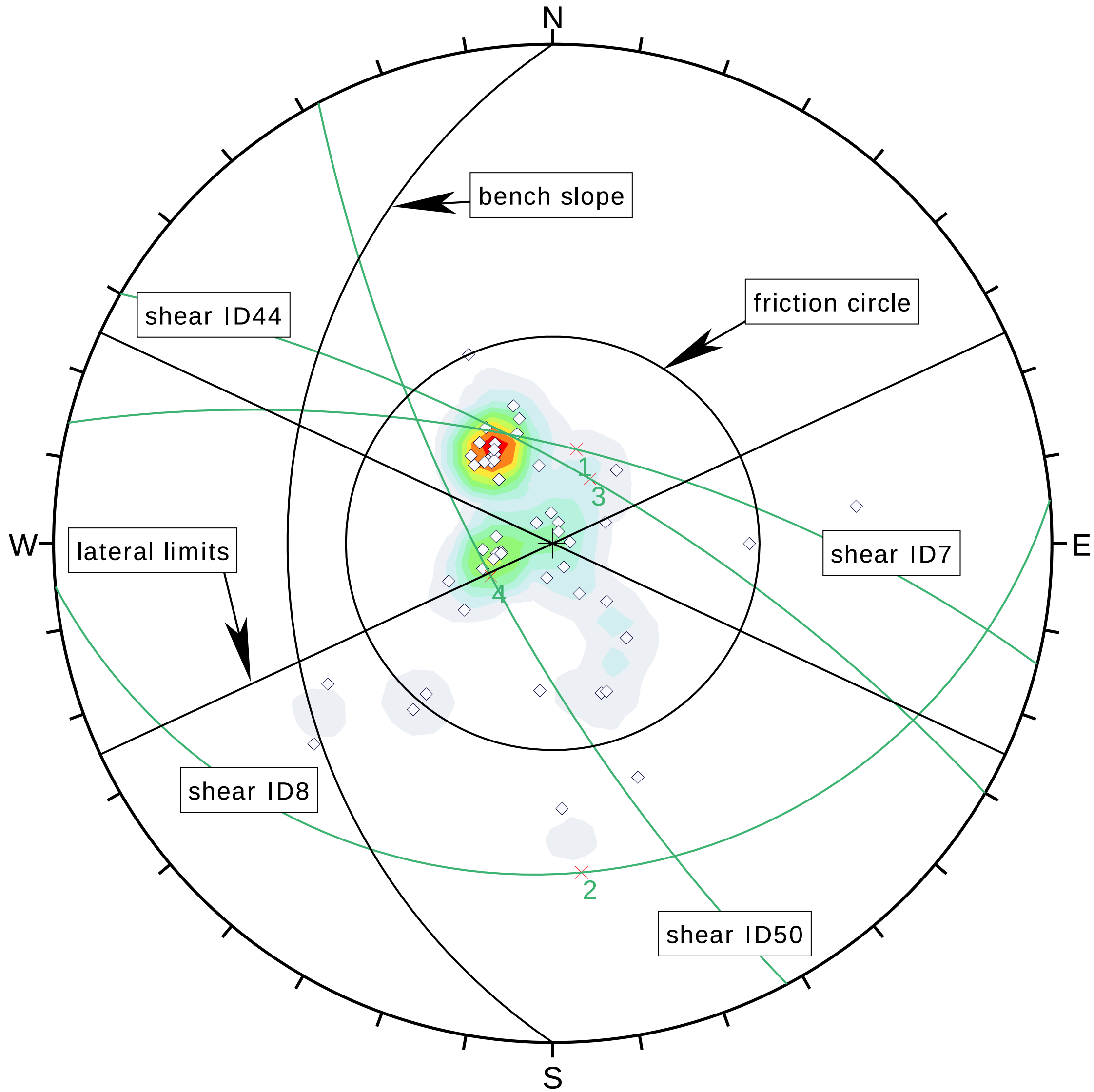
Color	Density Concentrations
	0.00 - 1.70
	1.70 - 3.40
	3.40 - 5.10
	5.10 - 6.80
	6.80 - 8.50
	8.50 - 10.20
	10.20 - 11.90
	11.90 - 13.60
	13.60 - 15.30
	15.30 - 17.00

Maximum Density	16.63%
Contour Data	Dip Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

Plot Mode	Dip Vectors
Vector Count	31 (31 Entries)
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain		
Analysis Description	Expansion Area, Slopes vs. Friction, Vector Plot		
Drawn By	CHJ	*Author*	JMc
File Name	Data Loc 5-6 vector_34&63degree vs. 45friction.dips6	*Date*	5/22/2014
Enclosure	B-2.2		

DIPS 6.008



Symbol	TYPE	Quantity
◇	joint	50
×	shear	4

Color	Density Concentrations
	0.00 - 2.30
	2.30 - 4.60
	4.60 - 6.90
	6.90 - 9.20
	9.20 - 11.50
	11.50 - 13.80
	13.80 - 16.10
	16.10 - 18.40
	18.40 - 20.70
	20.70 - 23.00

Maximum Density	22.95%
Contour Data	Dip Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

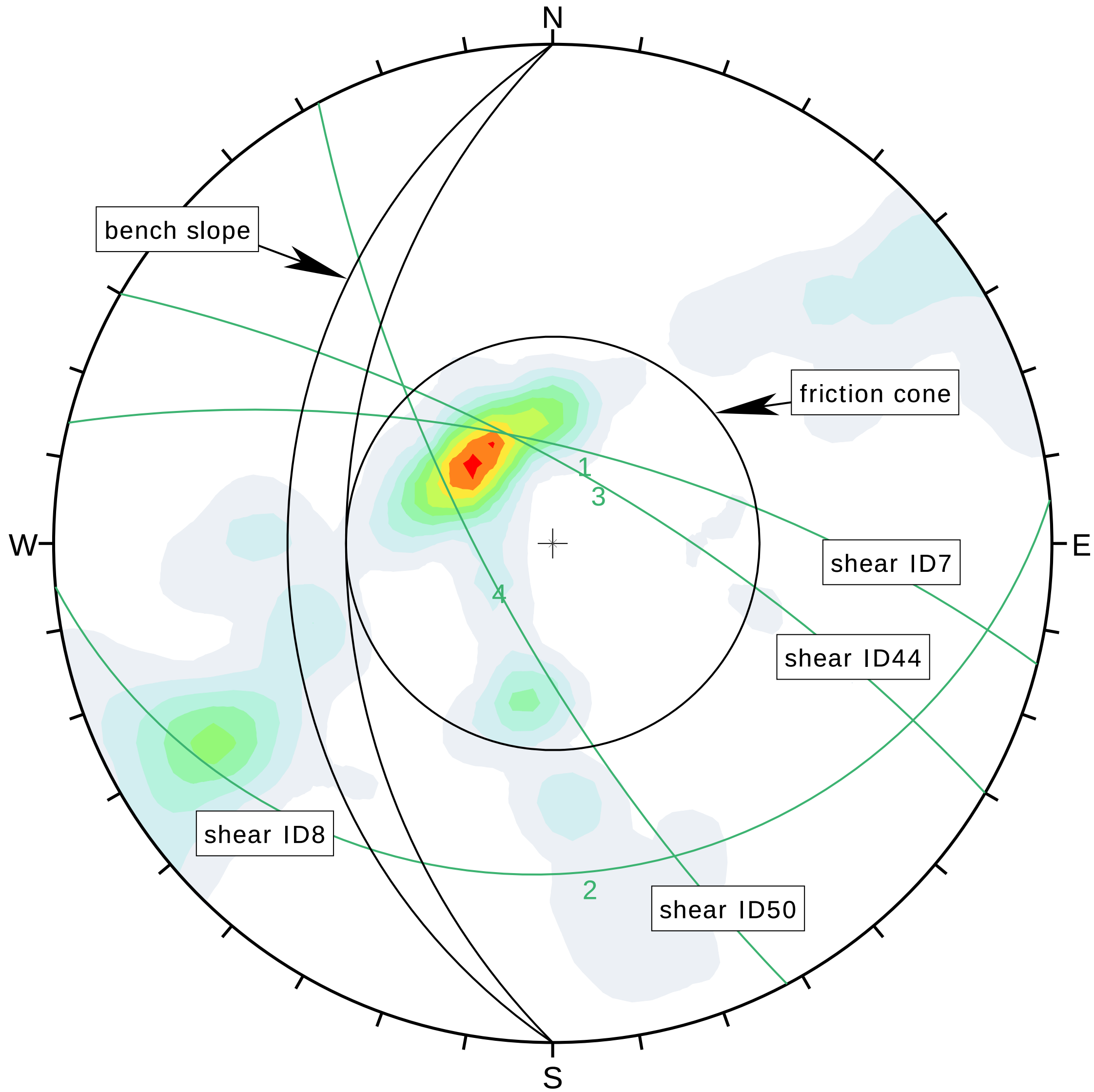
Kinematic Analysis	Planar Sliding
Slope Dip	34
Slope Dip Direction	270
Friction Angle	45°
Lateral Limits	25°

	Critical	Total	%
Planar Sliding (All)	0	54	0.00%

Plot Mode	Dip Vectors
Vector Count	54 (54 Entries)
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain		
Analysis Description	Existing Quarry, Planar Sliding, 1.5:1 Bench Faces		
Drawn By	CHJ	*Author*	JMc
File Name	1-4 planar vector_34face 270.dips6	*Date*	5/21/2014
Enclosure	B-3.1		

DIPS 6.008



Symbol	Feature
■	Critical Intersection

Color	Density Concentrations
	0.00 - 1.00
	1.00 - 2.00
	2.00 - 3.00
	3.00 - 4.00
	4.00 - 5.00
	5.00 - 6.00
	6.00 - 7.00
	7.00 - 8.00
	8.00 - 9.00
	9.00 - 10.00

Maximum Density	9.46%
Contour Data	Intersections
Contour Distribution	Fisher
Counting Circle Size	1.0%

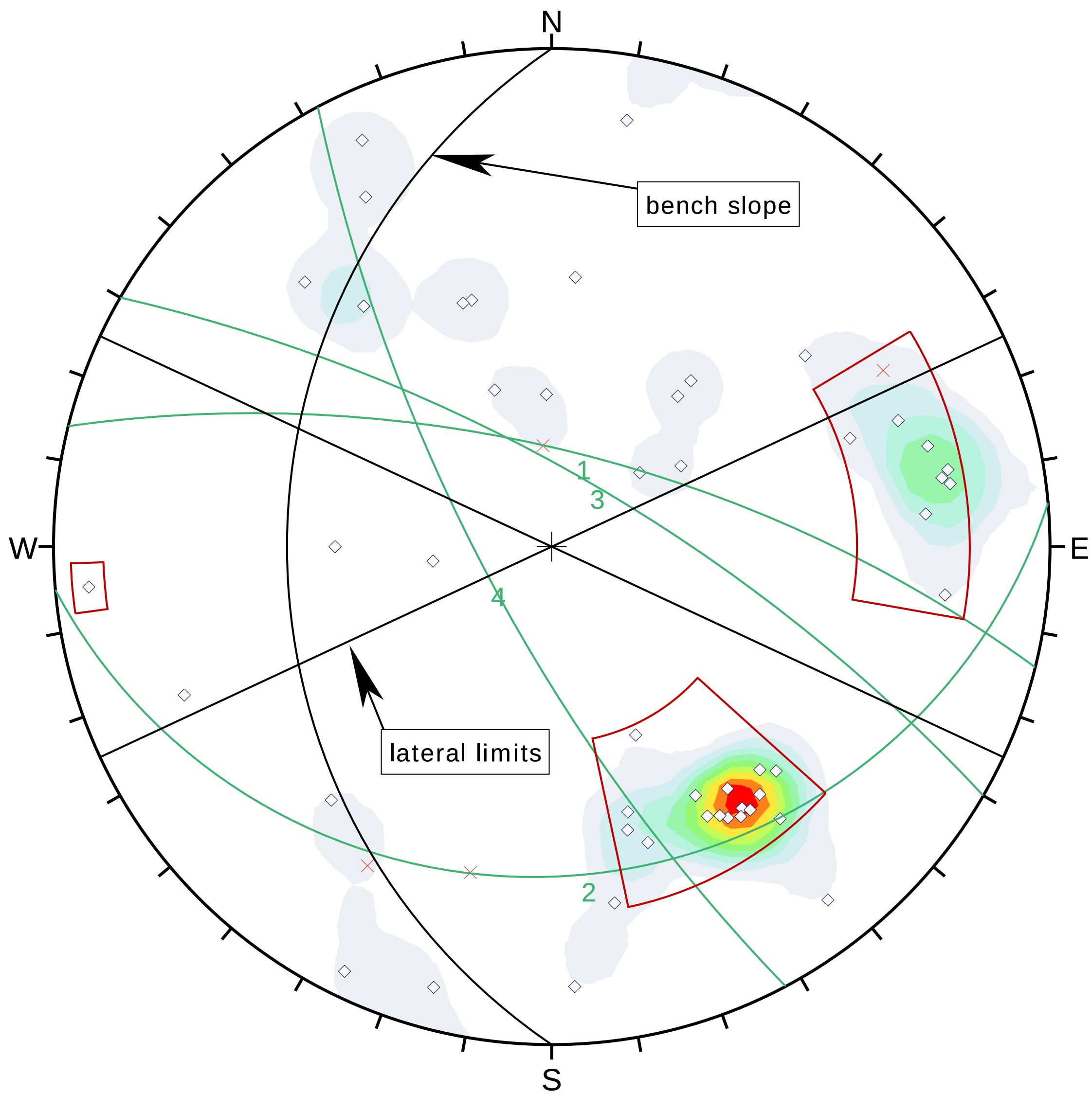
Kinematic Analysis	Wedge Sliding
Slope Dip	34
Slope Dip Direction	270
Friction Angle	45°

	Critical	Total	%
Wedge Sliding	0	1430	0.00%

Plot Mode	Dip Vectors
Vector Count	54 (54 Entries)
Intersection Mode	Grid Data Planes
Intersections Count	1430
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain		
Analysis Description	Existing Quarry, Wedge Sliding, 1.5:1 Bench Faces		
Drawn By CHJ		*Author* JMc	
File Name 1-4 wedge_34face 270.dips6		*Date* 5/21/2014	*Enclosure* B-3.2

DIPS 6.008



Symbol	TYPE	Quantity
◇	joint	50
×	shear	4

Color	Density Concentrations
	0.00 - 1.90
	1.90 - 3.80
	3.80 - 5.70
	5.70 - 7.60
	7.60 - 9.50
	9.50 - 11.40
	11.40 - 13.30
	13.30 - 15.20
	15.20 - 17.10
	17.10 - 19.00
Maximum Density	18.27%
Contour Data	Pole Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

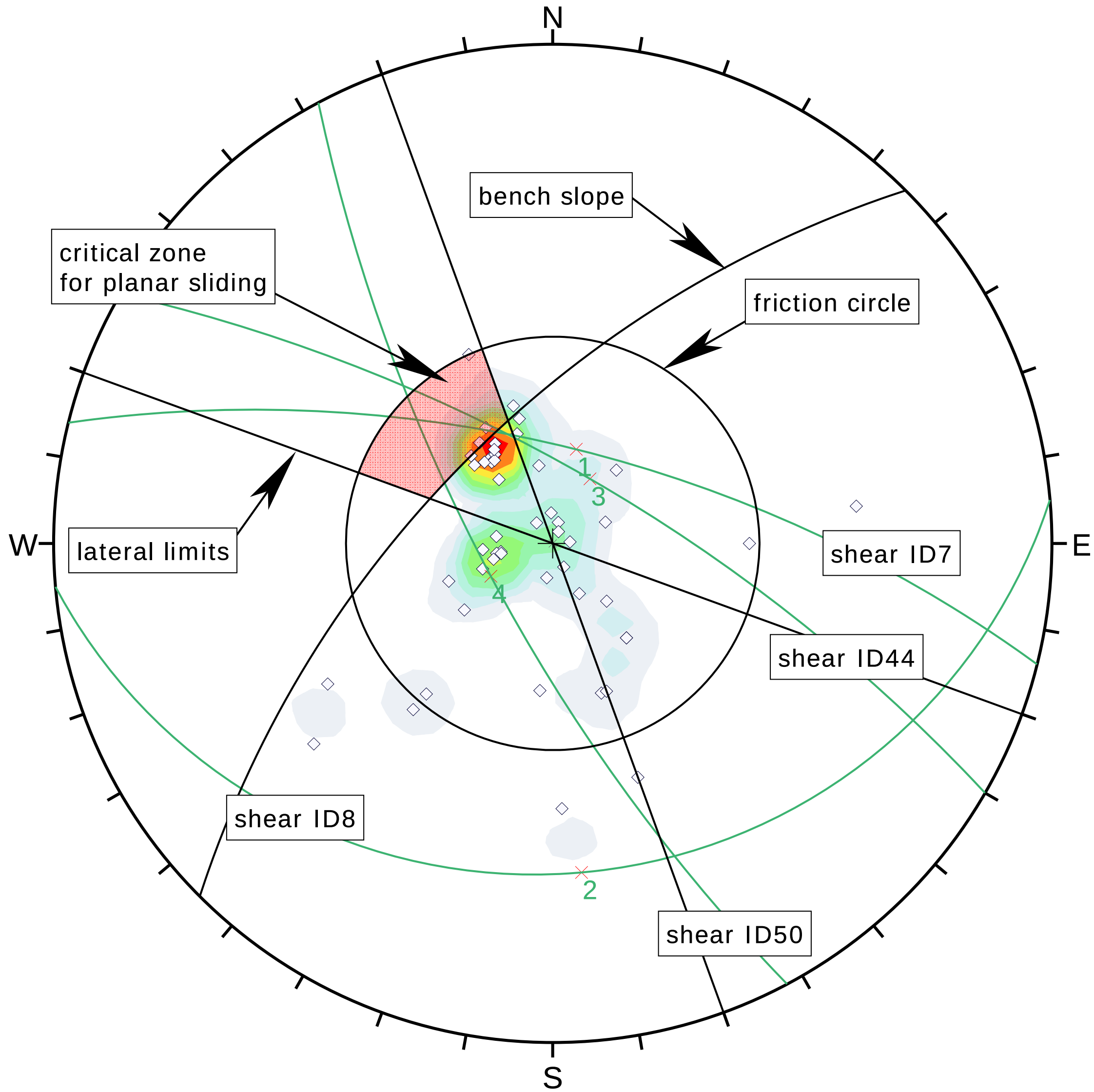
Kinematic Analysis	Flexural Toppling
Slope Dip	34
Slope Dip Direction	270
Friction Angle	45°
Lateral Limits	25°

	Critical	Total	%
Flexural Toppling (All)	0	54	0.00%

Plot Mode	Pole Vectors
Vector Count	54 (54 Entries)
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain
Analysis Description	Existing Quarry, Toppling, 1.5:1 Bench Faces
Drawn By	CHJ
Author	JMc
File Name	1-4 topple poles_34face 270.dips6
Date	5/21/2014
Enclosure	B-3.3

DIPS 6.008



Symbol	TYPE	Quantity
◇	joint	50
×	shear	4

Color	Density Concentrations
	0.00 - 2.30
	2.30 - 4.60
	4.60 - 6.90
	6.90 - 9.20
	9.20 - 11.50
	11.50 - 13.80
	13.80 - 16.10
	16.10 - 18.40
	18.40 - 20.70
	20.70 - 23.00
Maximum Density	22.95%
Contour Data	Dip Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

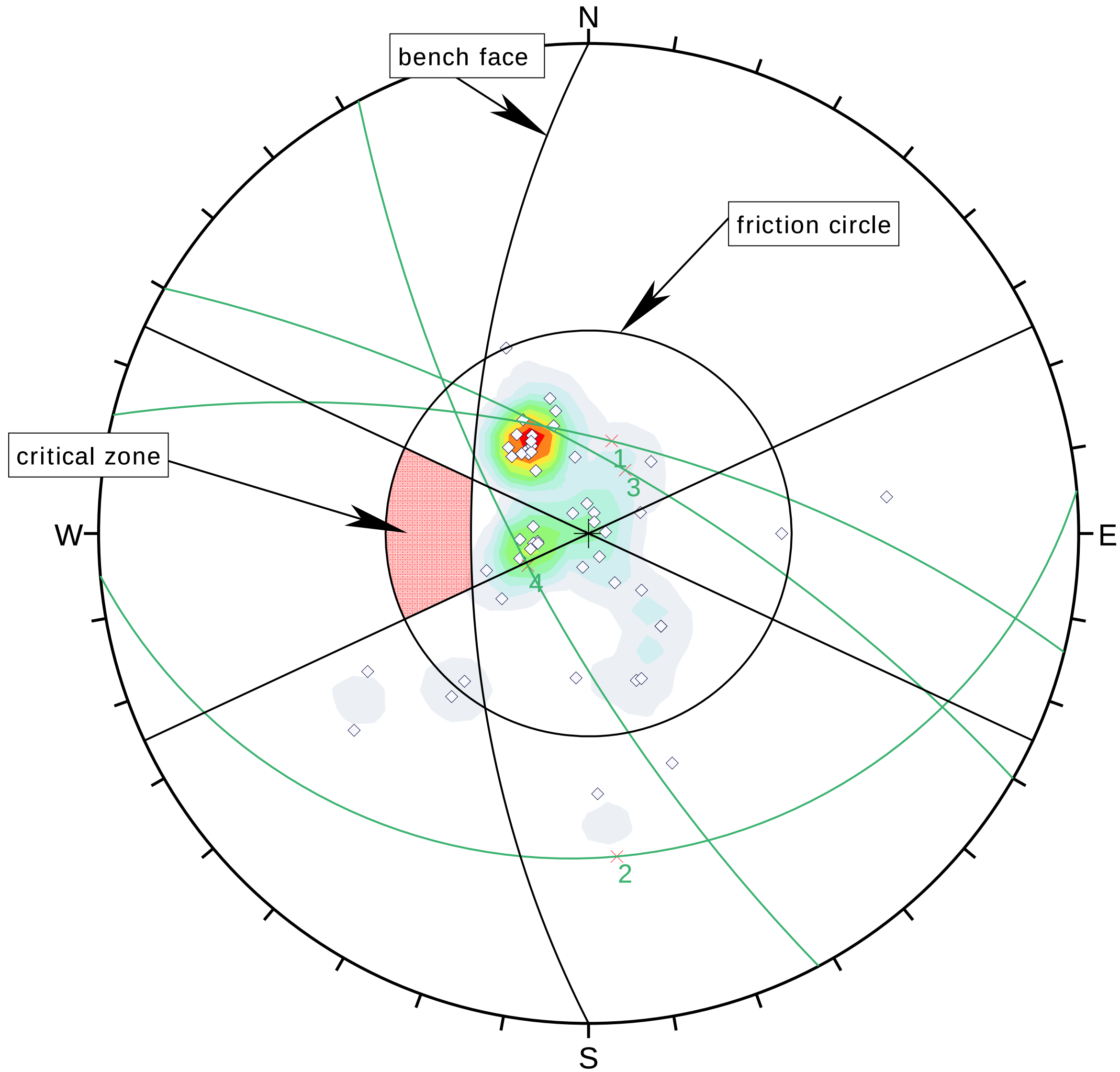
Kinematic Analysis	Planar Sliding
Slope Dip	63
Slope Dip Direction	315
Friction Angle	45°
Lateral Limits	25°

	Critical	Total	%
Planar Sliding (All)	3	54	5.56%
Planar Sliding (Set 1)	3	16	18.75%

Plot Mode	Dip Vectors
Vector Count	54 (54 Entries)
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain			
Analysis Description	Existing Quarry, Planar Sliding, Vector Plot			
Drawn By	CHJ	*Author*	JMc	
File Name	1-4 planar vector_63face 315.dips6	*Date*	5/21/2014	*Enclosure* B-4.1

DIPS 6.008



Symbol	TYPE	Quantity
◇	joint	50
×	shear	4

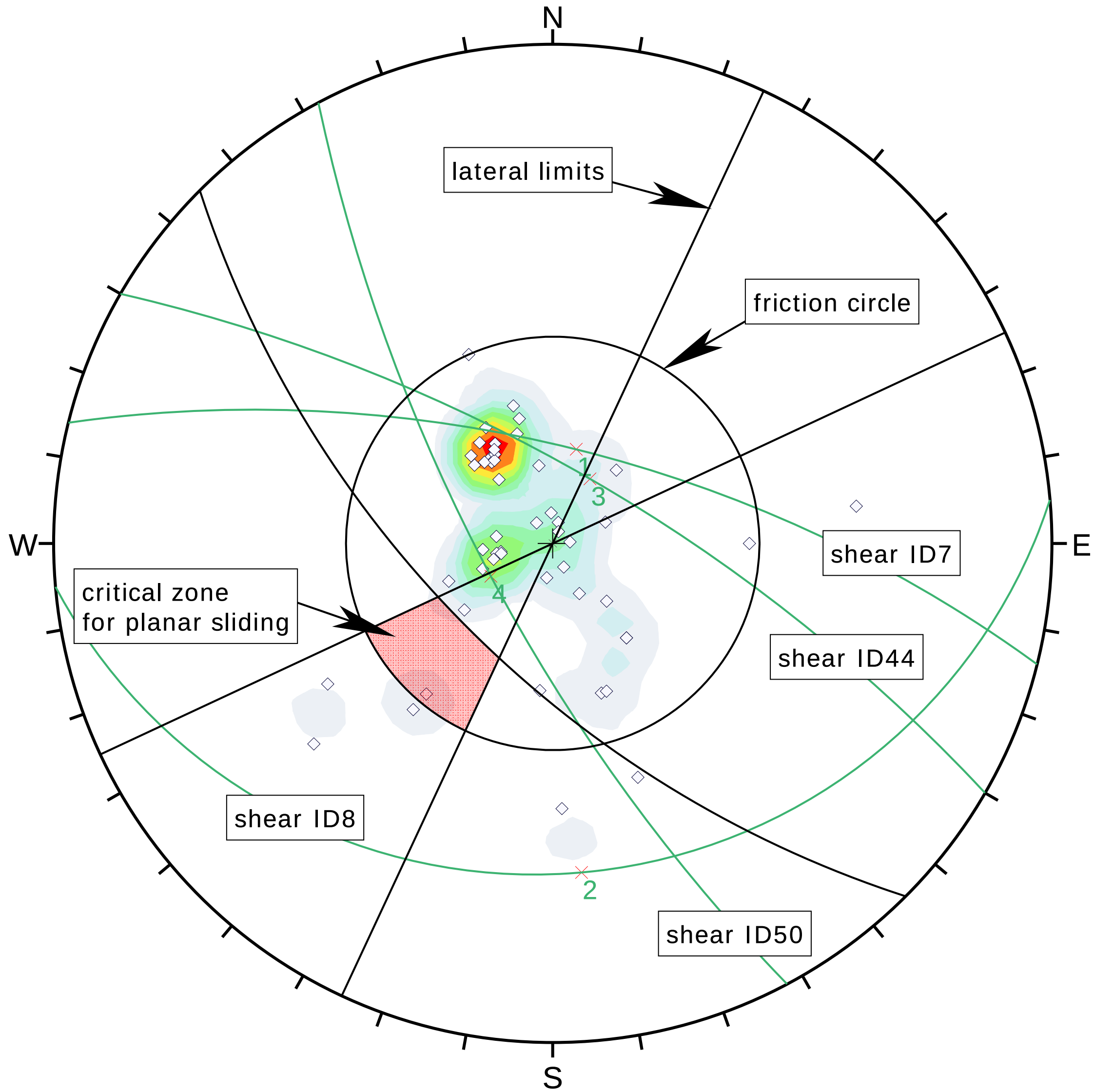
Color	Density Concentrations
	0.00 - 2.30
	2.30 - 4.60
	4.60 - 6.90
	6.90 - 9.20
	9.20 - 11.50
	11.50 - 13.80
	13.80 - 16.10
	16.10 - 18.40
	18.40 - 20.70
	20.70 - 23.00
Maximum Density	22.95%
Contour Data	Dip Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

Kinematic Analysis	Planar Sliding		
Slope Dip	63		
Slope Dip Direction	270		
Friction Angle	45°		
Lateral Limits	25°		
	Critical	Total	%
Planar Sliding (All)	0	54	0.00%

Plot Mode	Dip Vectors
Vector Count	54 (54 Entries)
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain				
Analysis Description	Existing Quarry, Planar Sliding, Vector Plot				
Drawn By	CHJ	*Author*	JMc		
File Name	1-4 planar vector_63face.dips6	*Date*	5/21/2014	*Enclosure*	B-4.2

DIPS 6.008



Symbol	TYPE	Quantity
◇	joint	50
×	shear	4

Color	Density Concentrations
	0.00 - 2.30
	2.30 - 4.60
	4.60 - 6.90
	6.90 - 9.20
	9.20 - 11.50
	11.50 - 13.80
	13.80 - 16.10
	16.10 - 18.40
	18.40 - 20.70
	20.70 - 23.00
Maximum Density	22.95%
Contour Data	Dip Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

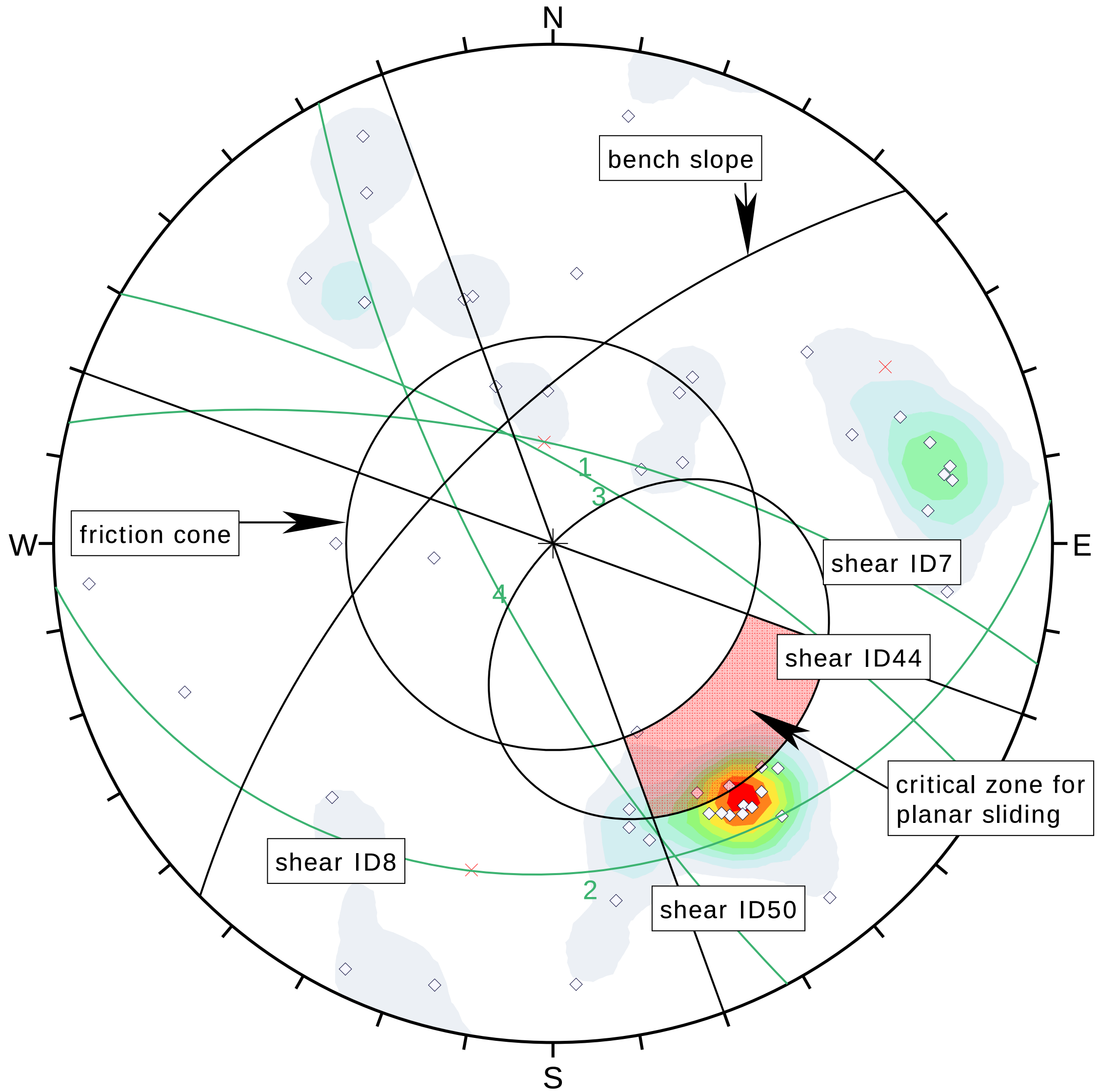
Kinematic Analysis	Planar Sliding
Slope Dip	63
Slope Dip Direction	225
Friction Angle	45°
Lateral Limits	20°

	Critical	Total	%
Planar Sliding (All)	1	54	1.85%

Plot Mode	Dip Vectors
Vector Count	54 (54 Entries)
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain		
Analysis Description	Existing Quarry, Planar Sliding, Vector Plot		
Drawn By	CHJ	*Author*	JMc
File Name	1-4 planar vector_63face 225.dips6	*Date*	5/21/2014
Enclosure	B-4.3		

DIPS 6.008



Symbol	TYPE	Quantity
◇	joint	50
×	shear	4

Color	Density Concentrations
	0.00 - 1.90
	1.90 - 3.80
	3.80 - 5.70
	5.70 - 7.60
	7.60 - 9.50
	9.50 - 11.40
	11.40 - 13.30
	13.30 - 15.20
	15.20 - 17.10
	17.10 - 19.00

Maximum Density	18.27%
Contour Data	Pole Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

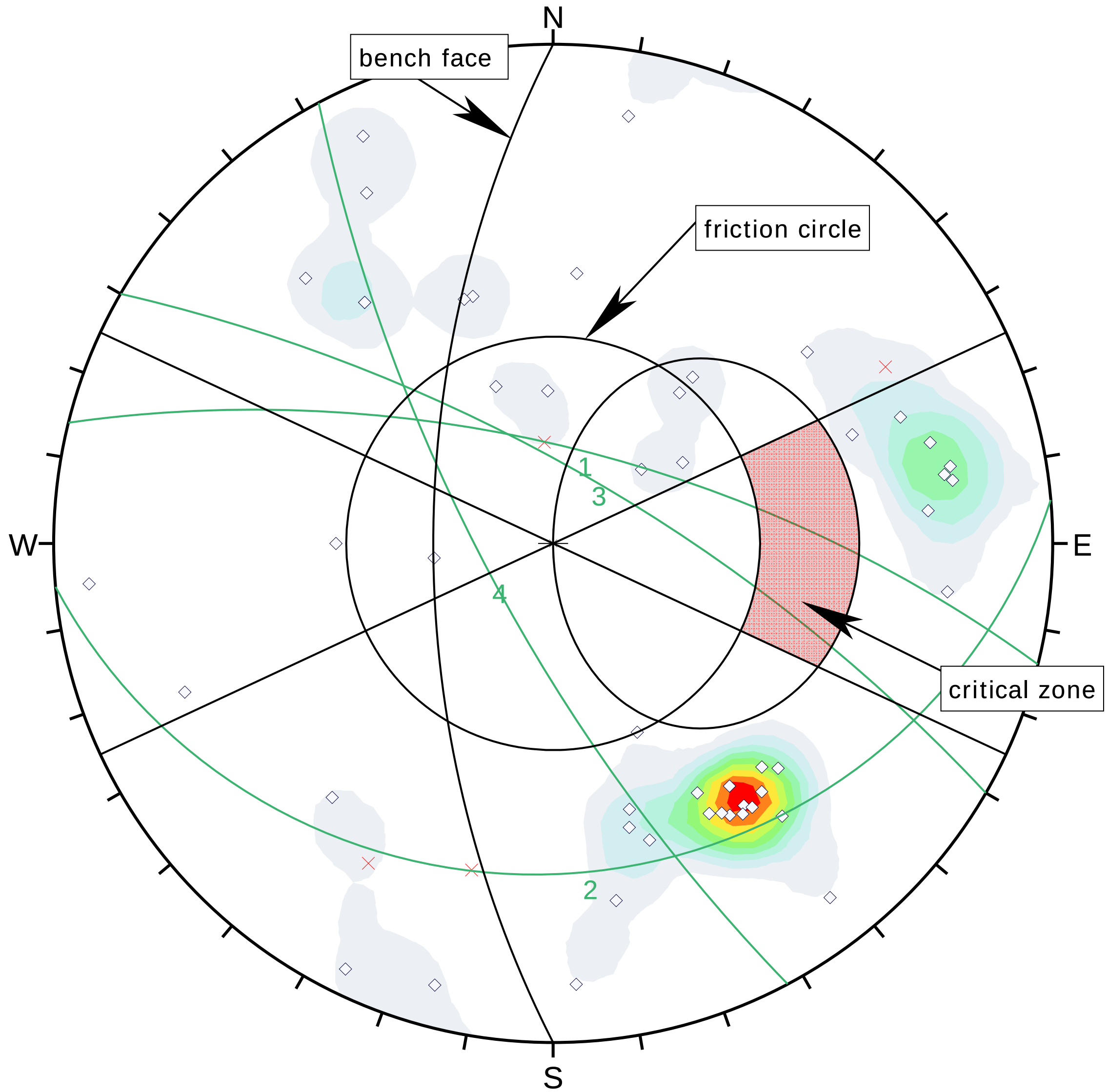
Kinematic Analysis	Planar Sliding
Slope Dip	63
Slope Dip Direction	315
Friction Angle	45°
Lateral Limits	25°

	Critical	Total	%
Planar Sliding (All)	3	54	5.56%
Planar Sliding (Set 1)	3	16	18.75%

Plot Mode	Pole Vectors
Vector Count	54 (54 Entries)
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain
Analysis Description	Existing Quarry, Planar Sliding, Pole Plot
Drawn By	CHJ
Author	JMc
File Name	1-4 planar_63face 315.dips6
Date	5/21/2014
Enclosure	B-4.4

DIPS 6.008



Symbol	TYPE	Quantity
◇	joint	50
×	shear	4

Color	Density Concentrations
	0.00 - 1.90
	1.90 - 3.80
	3.80 - 5.70
	5.70 - 7.60
	7.60 - 9.50
	9.50 - 11.40
	11.40 - 13.30
	13.30 - 15.20
	15.20 - 17.10
	17.10 - 19.00

Maximum Density	18.27%
Contour Data	Pole Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

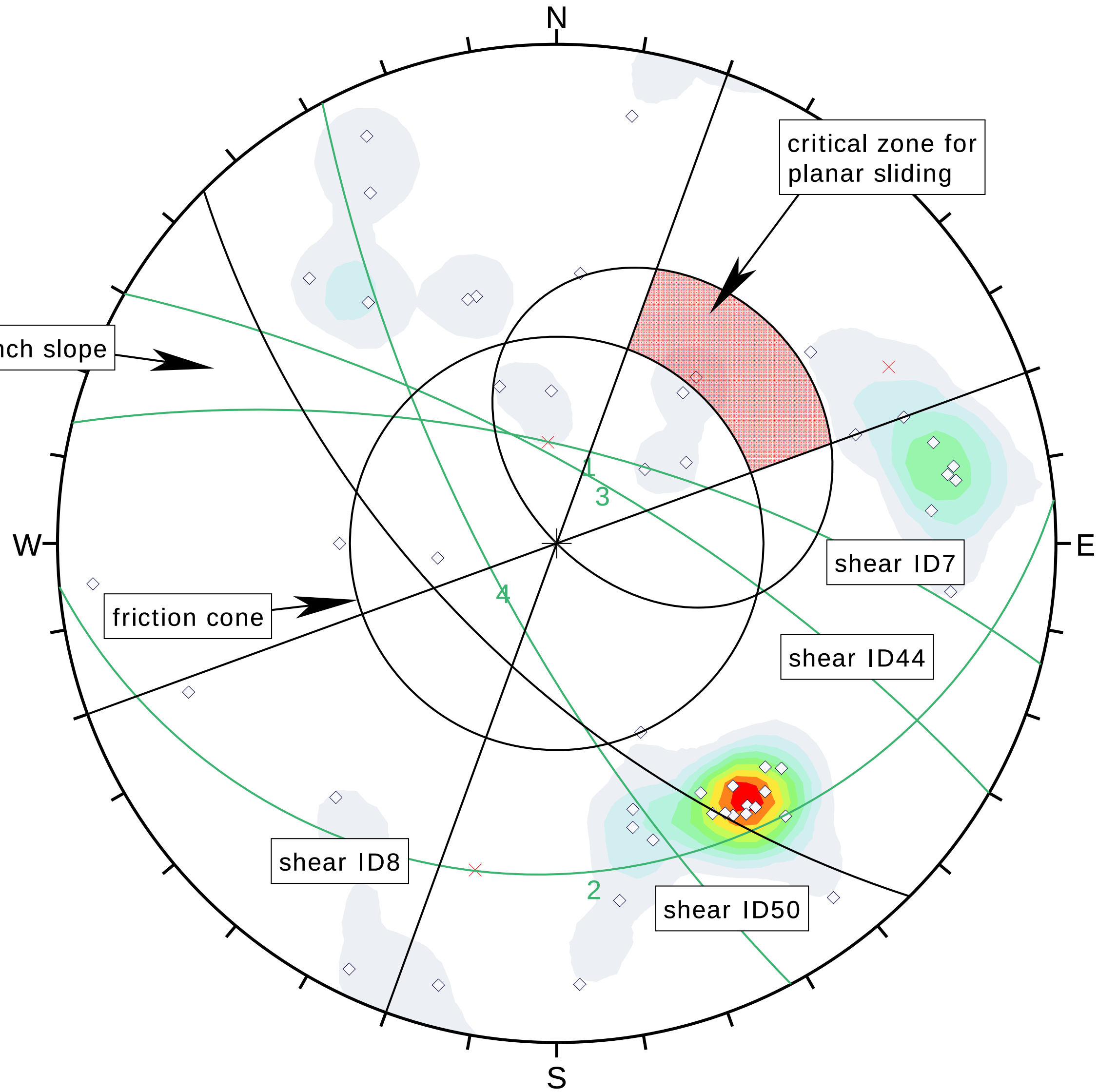
Kinematic Analysis	Planar Sliding
Slope Dip	63
Slope Dip Direction	270
Friction Angle	45°
Lateral Limits	25°

	Critical	Total	%
Planar Sliding (All)	0	54	0.00%

Plot Mode	Pole Vectors
Vector Count	54 (54 Entries)
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain		
Analysis Description	Existing Quarry, Planar Sliding, Pole Plot		
Drawn By	CHJ	*Author*	JMc
File Name	1-4 planar poles_63face.dips6	*Date*	5/21/2014
Enclosure	B-4.5		

DIPS 6.008



Symbol	TYPE	Quantity
◇	joint	50
×	shear	4

Color	Density Concentrations
	0.00 - 1.90
	1.90 - 3.80
	3.80 - 5.70
	5.70 - 7.60
	7.60 - 9.50
	9.50 - 11.40
	11.40 - 13.30
	13.30 - 15.20
	15.20 - 17.10
	17.10 - 19.00

Maximum Density	18.27%
Contour Data	Pole Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

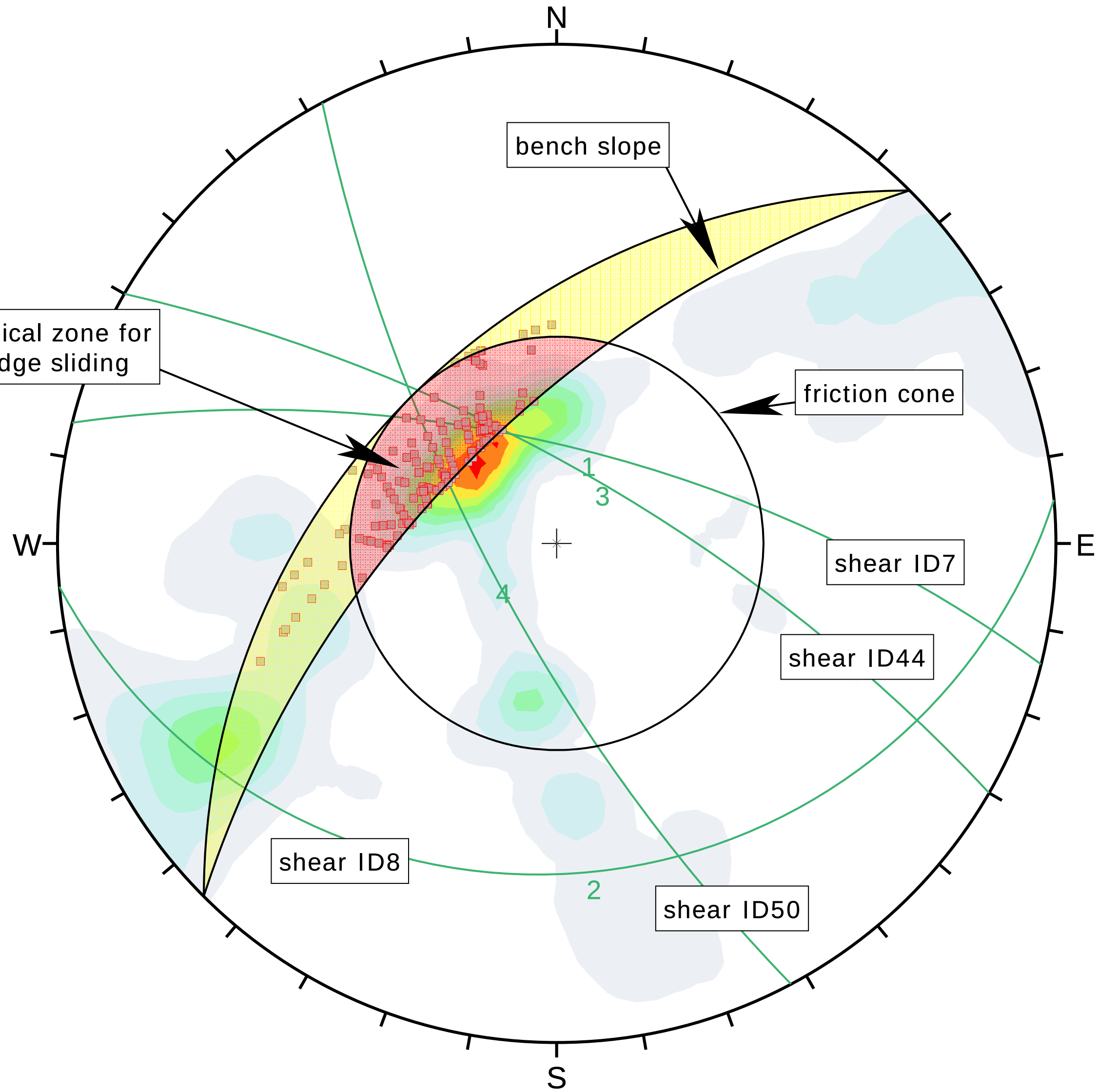
Kinematic Analysis	Planar Sliding
Slope Dip	63
Slope Dip Direction	225
Friction Angle	45°
Lateral Limits	25°

	Critical	Total	%
Planar Sliding (All)	1	54	1.85%

Plot Mode	Pole Vectors
Vector Count	54 (54 Entries)
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain		
Analysis Description	Existing Quarry, Planar Sliding, Pole Plot		
Drawn By	CHJ	*Author*	JMc
File Name	1-4 planar_63face 225.dips6	*Date*	5/21/2014
Enclosure	B-4.6		

DIPS 6.008



Symbol	Feature
■	Critical Intersection

Color	Density Concentrations
	0.00 - 1.00
	1.00 - 2.00
	2.00 - 3.00
	3.00 - 4.00
	4.00 - 5.00
	5.00 - 6.00
	6.00 - 7.00
	7.00 - 8.00
	8.00 - 9.00
	9.00 - 10.00

Maximum Density	9.46%
Contour Data	Intersections
Contour Distribution	Fisher
Counting Circle Size	1.0%

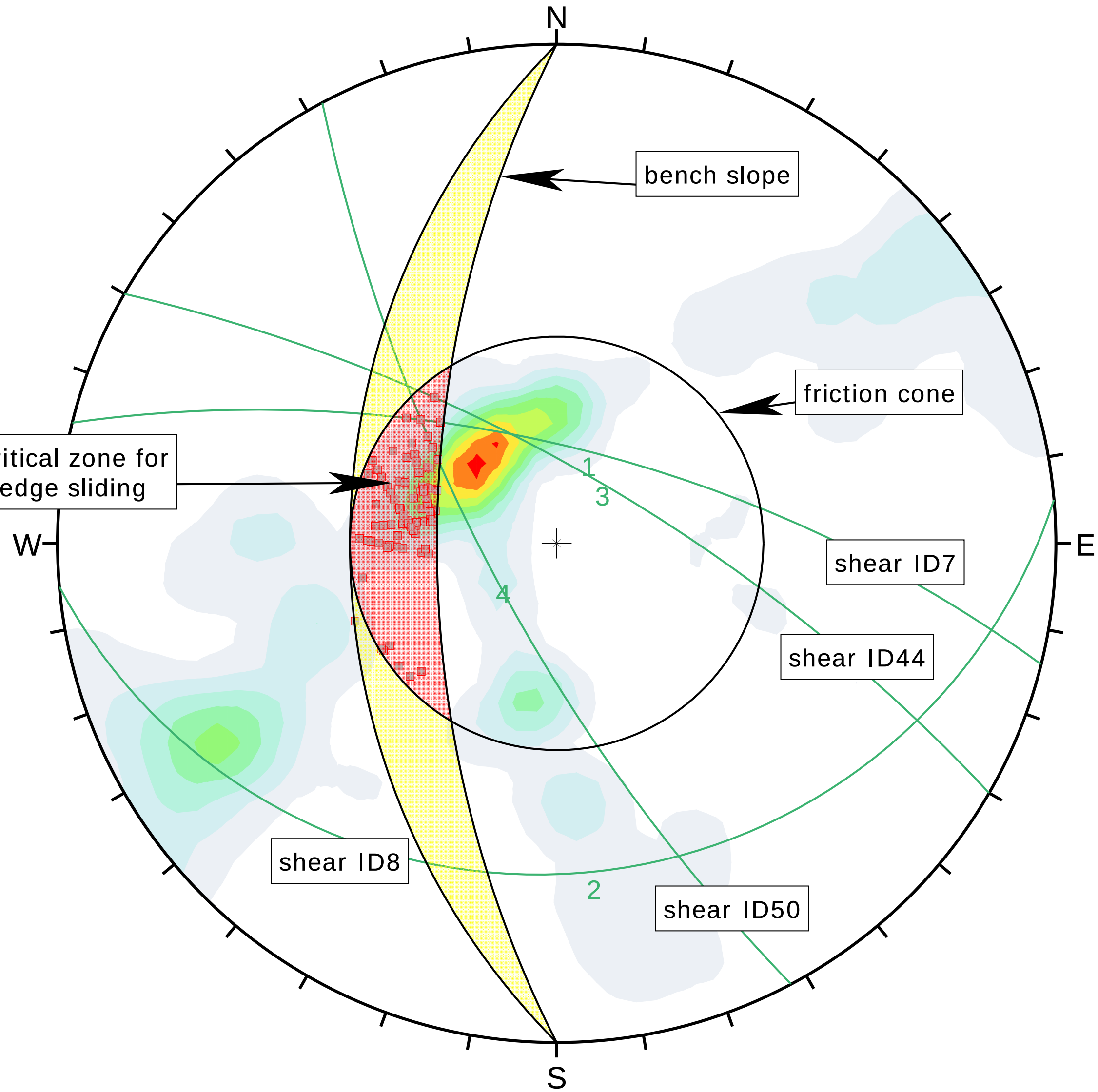
Kinematic Analysis	Wedge Sliding
Slope Dip	63
Slope Dip Direction	315
Friction Angle	45°

	Critical	Total	%
Wedge Sliding	162	1430	11.33%

Plot Mode	Dip Vectors
Vector Count	54 (54 Entries)
Intersection Mode	Grid Data Planes
Intersections Count	1430
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain
Analysis Description	Existing Quarry,Wedge Sliding, Intersection Contour Plot
Drawn By	CHJ
Author	JMc
File Name	1-4 wedge_63face 315.dips6
Date	5/21/2014
Enclosure	B-5.1

DIPS 6.008



Symbol	Feature
▪	Critical Intersection

Color	Density Concentrations
	0.00 - 1.00
	1.00 - 2.00
	2.00 - 3.00
	3.00 - 4.00
	4.00 - 5.00
	5.00 - 6.00
	6.00 - 7.00
	7.00 - 8.00
	8.00 - 9.00
	9.00 - 10.00

Maximum Density	9.46%
Contour Data	Intersections
Contour Distribution	Fisher
Counting Circle Size	1.0%

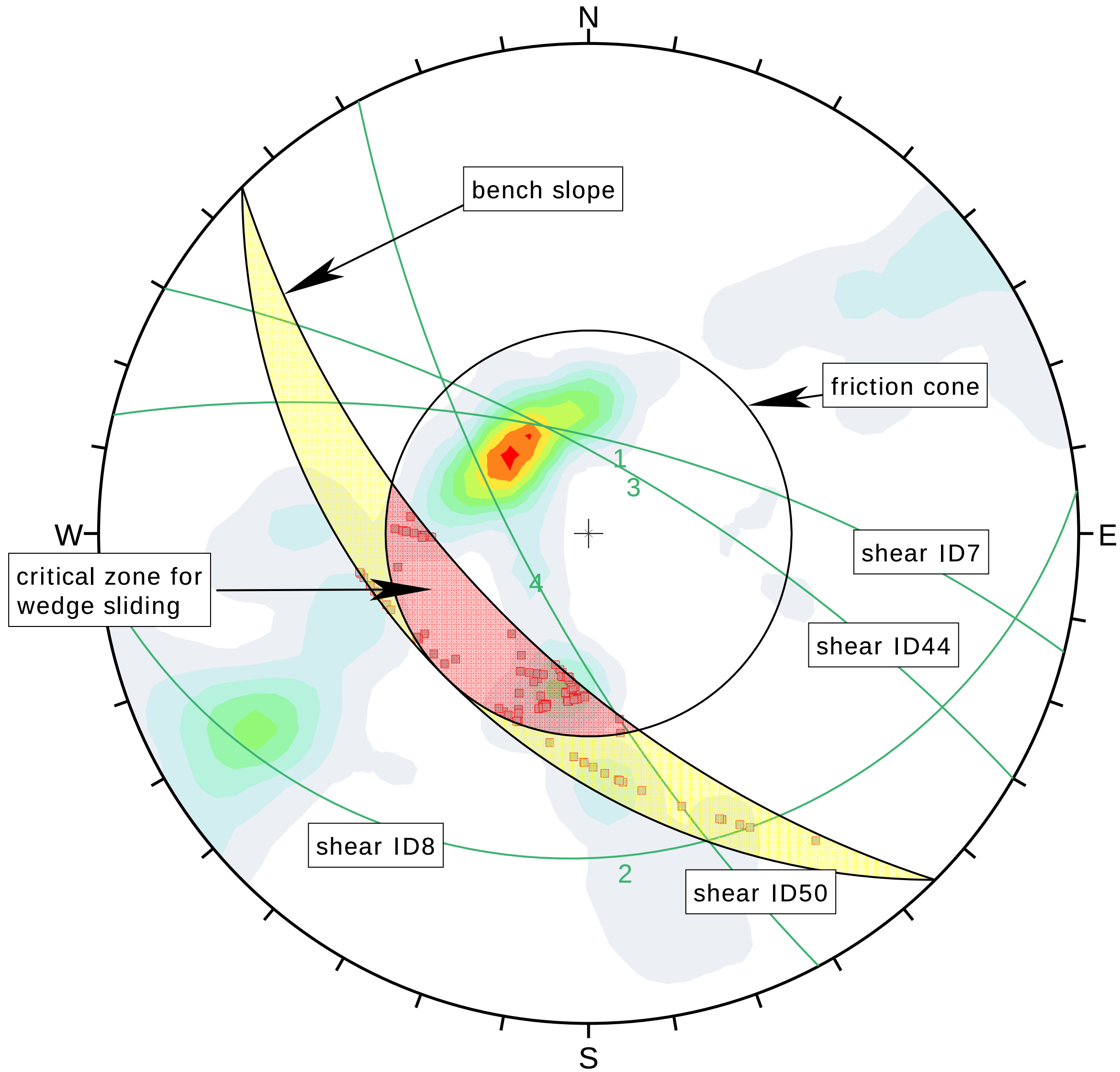
Kinematic Analysis	Wedge Sliding
Slope Dip	63
Slope Dip Direction	270
Friction Angle	45°

	Critical	Total	%
Wedge Sliding	94	1430	6.57%

Plot Mode	Dip Vectors
Vector Count	54 (54 Entries)
Intersection Mode	Grid Data Planes
Intersections Count	1430
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain		
Analysis Description	Existing Quarry,Wedge Sliding, Intersection Contour Plot		
Drawn By CHJ		*Author* JMc	
File Name 1-4 wedge_63face 270.dips6		*Date* 5/21/2014	*Enclosure* B-5.2

DIPS 6.008



Symbol	Feature
■	Critical Intersection

Color	Density Concentrations
	0.00 - 1.00
	1.00 - 2.00
	2.00 - 3.00
	3.00 - 4.00
	4.00 - 5.00
	5.00 - 6.00
	6.00 - 7.00
	7.00 - 8.00
	8.00 - 9.00
	9.00 - 10.00
Maximum Density	9.46%
Contour Data	Intersections
Contour Distribution	Fisher
Counting Circle Size	1.0%

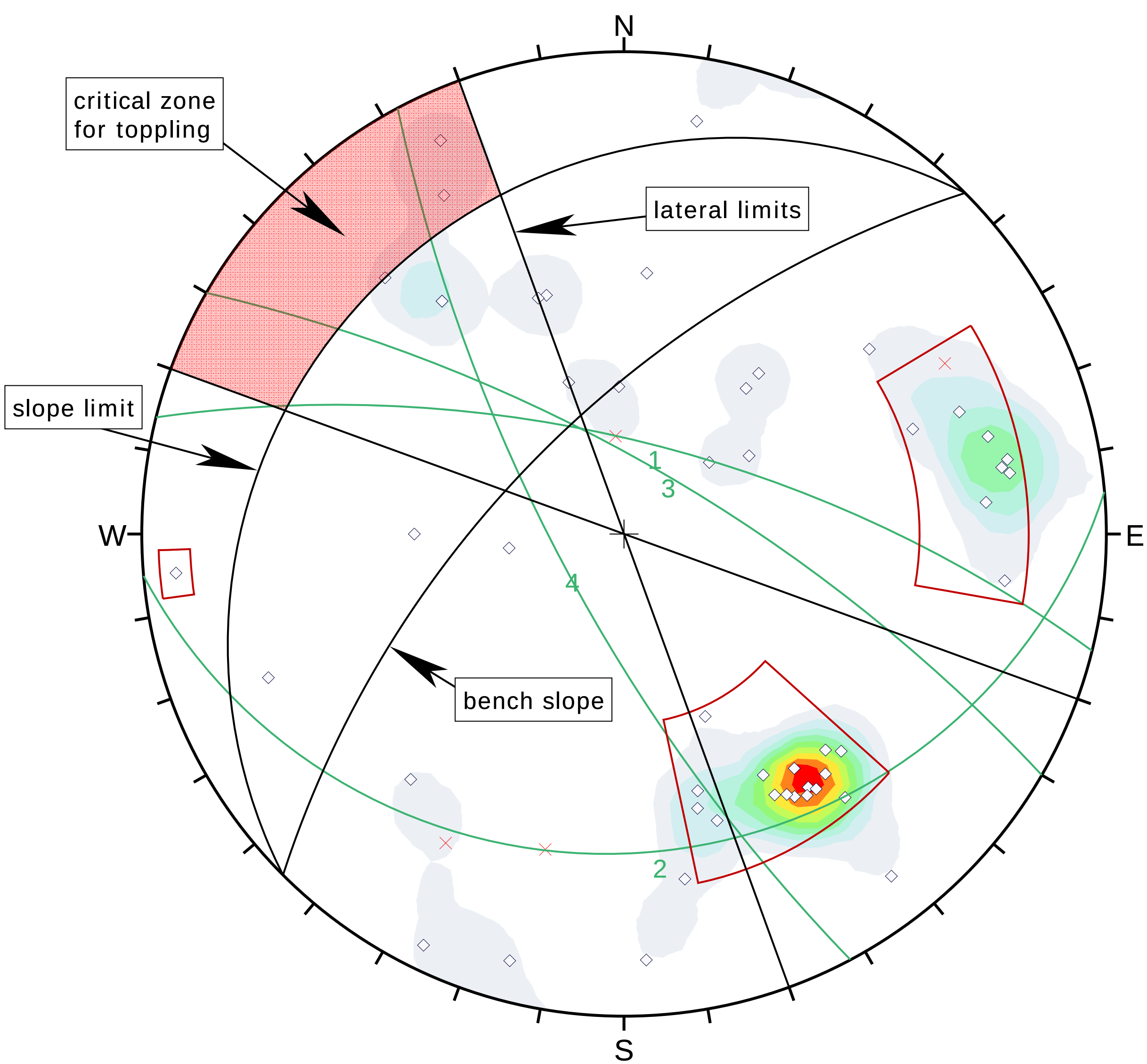
Kinematic Analysis	Wedge Sliding
Slope Dip	63
Slope Dip Direction	225
Friction Angle	45°

	Critical	Total	%
Wedge Sliding	116	1430	8.11%

Plot Mode	Dip Vectors
Vector Count	54 (54 Entries)
Intersection Mode	Grid Data Planes
Intersections Count	1430
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain
Analysis Description	Existing Quarry,Wedge Sliding, Intersection Contour Plot
Drawn By	CHJ
Author	JMc
File Name	1-4 wedge_63face 225.dips6
Date	5/21/2014
Enclosure	B-5.3

DIPS 6.008



Symbol	TYPE	Quantity
◇	joint	50
×	shear	4

Color	Density Concentrations
	0.00 - 1.90
	1.90 - 3.80
	3.80 - 5.70
	5.70 - 7.60
	7.60 - 9.50
	9.50 - 11.40
	11.40 - 13.30
	13.30 - 15.20
	15.20 - 17.10
	17.10 - 19.00

Maximum Density	18.27%
Contour Data	Pole Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

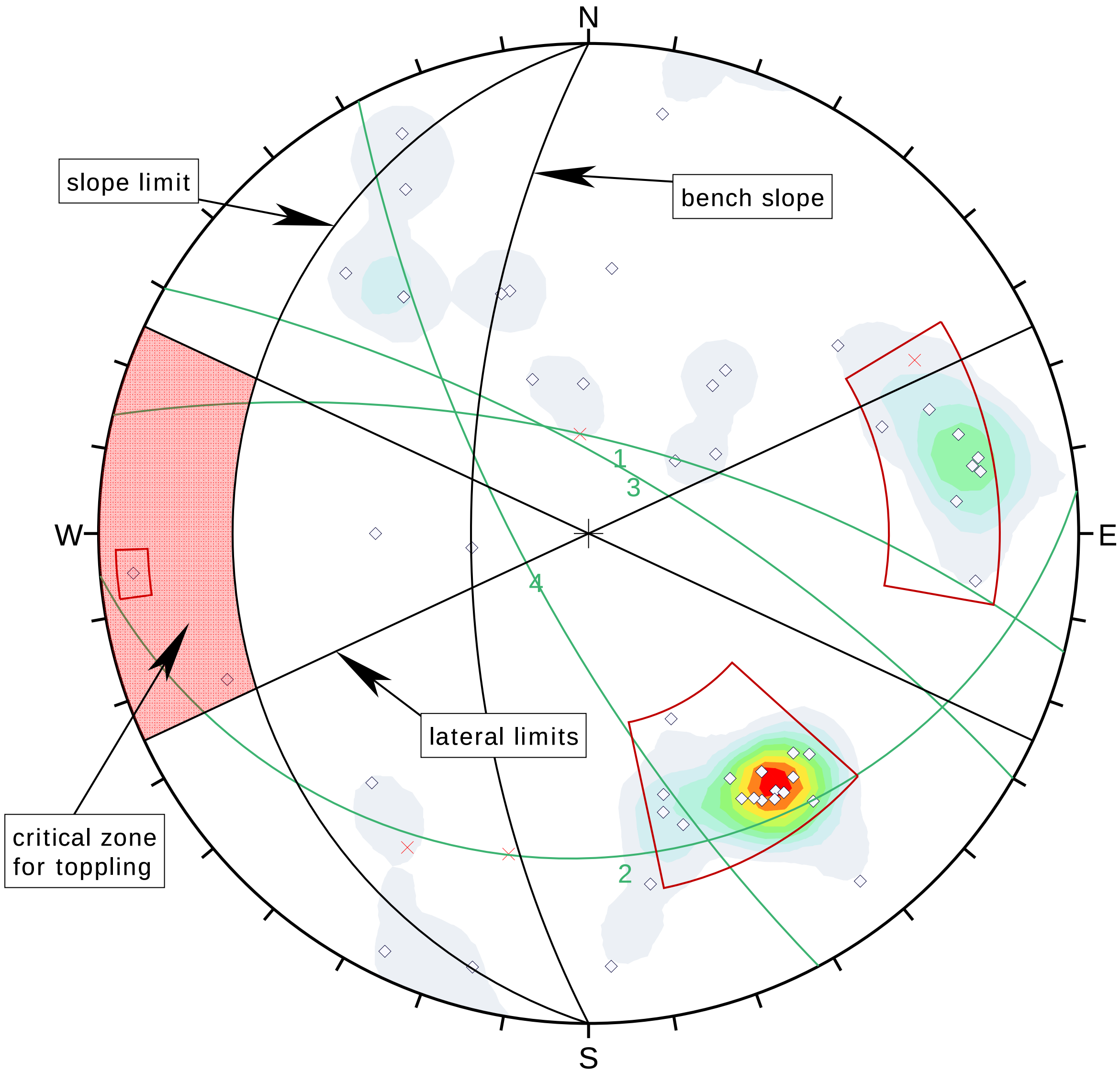
Kinematic Analysis	Flexural Toppling
Slope Dip	63
Slope Dip Direction	315
Friction Angle	45°
Lateral Limits	25°

	Critical	Total	%
Flexural Toppling (All)	2	54	3.70%

Plot Mode	Pole Vectors
Vector Count	54 (54 Entries)
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain		
Analysis Description	Existing Quarry, Toppling, Pole Plot		
Drawn By	CHJ	*Author*	JMc
File Name	1-4 topple poles_63face 315.dips6	*Date*	5/21/2014
Enclosure	B-6.1		

DIPS 6.008



Symbol	TYPE	Quantity
◇	joint	50
×	shear	4

Color	Density Concentrations
	0.00 - 1.90
	1.90 - 3.80
	3.80 - 5.70
	5.70 - 7.60
	7.60 - 9.50
	9.50 - 11.40
	11.40 - 13.30
	13.30 - 15.20
	15.20 - 17.10
	17.10 - 19.00

Maximum Density	18.27%
Contour Data	Pole Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

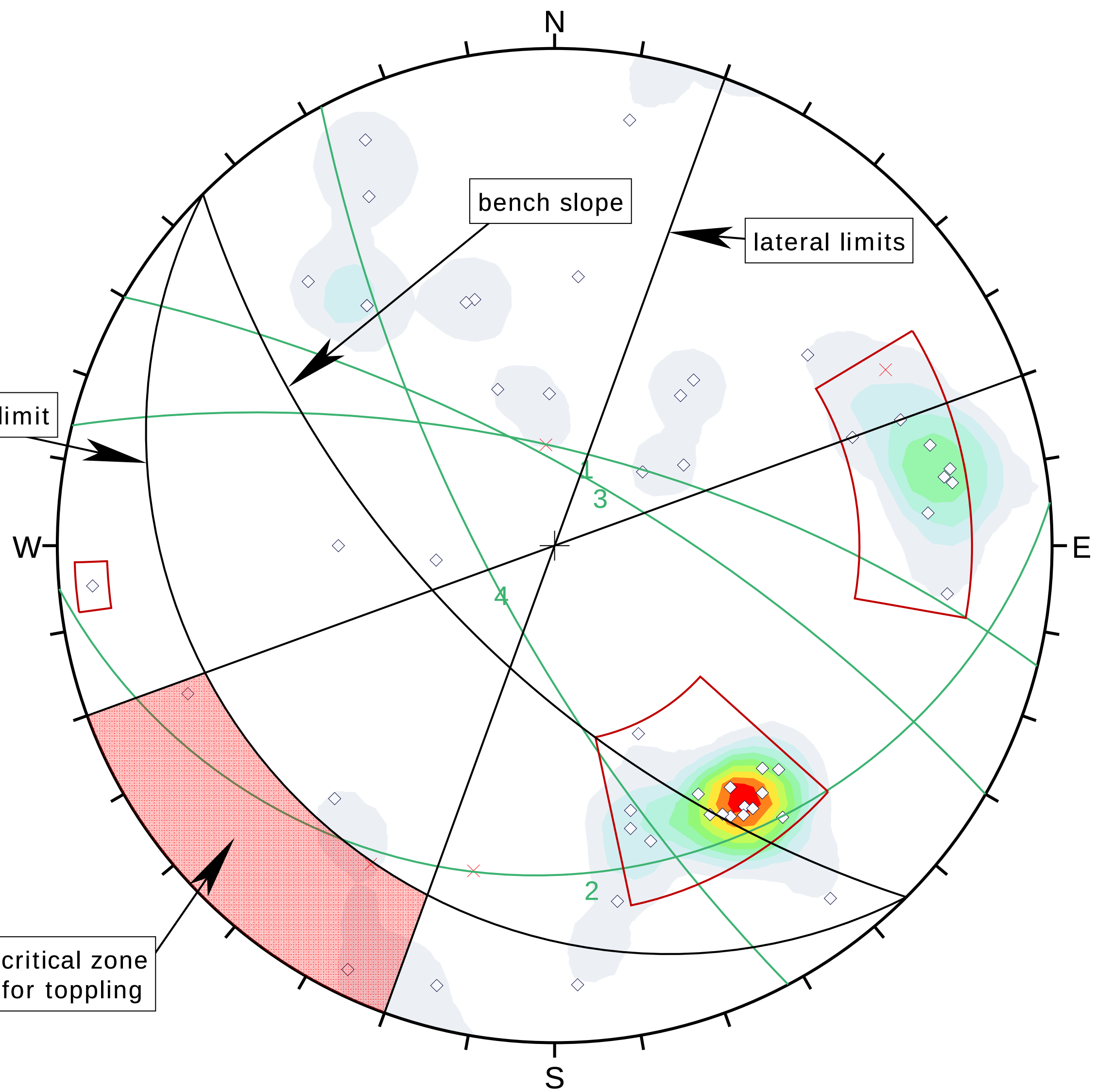
Kinematic Analysis	Flexural Toppling
Slope Dip	63
Slope Dip Direction	270
Friction Angle	45°
Lateral Limits	25°

	Critical	Total	%
Flexural Toppling (All)	2	54	3.70%
Flexural Toppling (Set 2)	1	10	10.00%

Plot Mode	Pole Vectors
Vector Count	54 (54 Entries)
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain		
Analysis Description	Existing Quarry, Toppling, Pole Plot		
Drawn By	CHJ	*Author*	JMc
File Name	1-4 topple poles_63face 270.dips6	*Date*	5/21/2014
		Enclosure	B-6.2

DIPS 6.008



Symbol	TYPE	Quantity
◇	joint	50
×	shear	4

Color	Density Concentrations
	0.00 - 1.90
	1.90 - 3.80
	3.80 - 5.70
	5.70 - 7.60
	7.60 - 9.50
	9.50 - 11.40
	11.40 - 13.30
	13.30 - 15.20
	15.20 - 17.10
	17.10 - 19.00

Maximum Density	18.27%
Contour Data	Pole Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

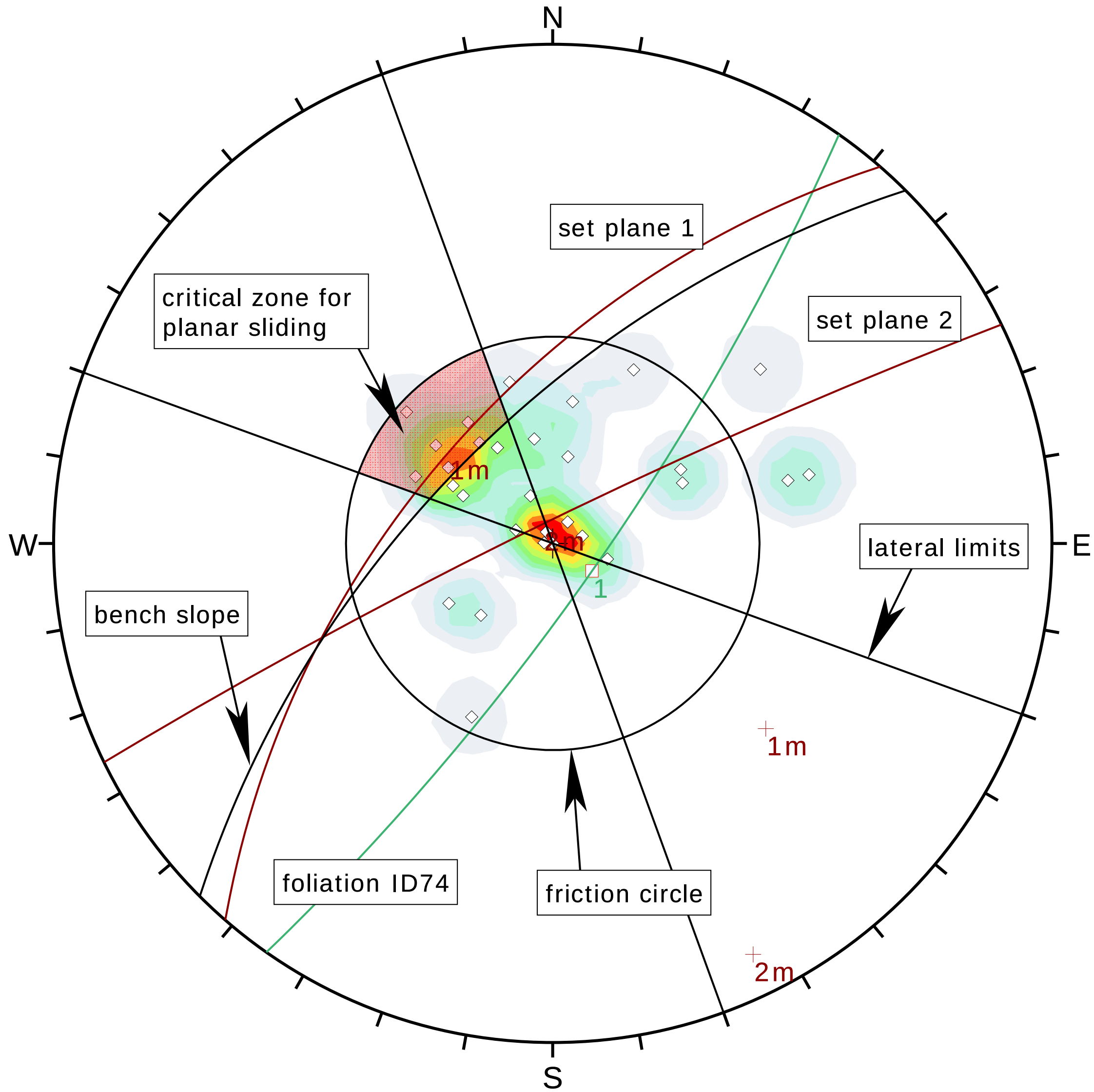
Kinematic Analysis	Flexural Toppling
Slope Dip	63
Slope Dip Direction	225
Friction Angle	45°
Lateral Limits	25°

	Critical	Total	%
Flexural Toppling (All)	3	54	5.56%

Plot Mode	Pole Vectors
Vector Count	54 (54 Entries)
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain		
Analysis Description	Existing Quarry, Toppling, Pole Plot		
Drawn By	CHJ	*Author*	JMc
File Name	1-4 topple poles_63face 225.dips6	*Date*	5/21/2014
Enclosure	B-6.3		

DIPS 6.008



Symbol	TYPE	Quantity
□	fol	1
◇	joint	30

Color	Density Concentrations
	0.00 - 1.70
	1.70 - 3.40
	3.40 - 5.10
	5.10 - 6.80
	6.80 - 8.50
	8.50 - 10.20
	10.20 - 11.90
	11.90 - 13.60
	13.60 - 15.30
	15.30 - 17.00
Maximum Density	16.63%
Contour Data	Dip Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

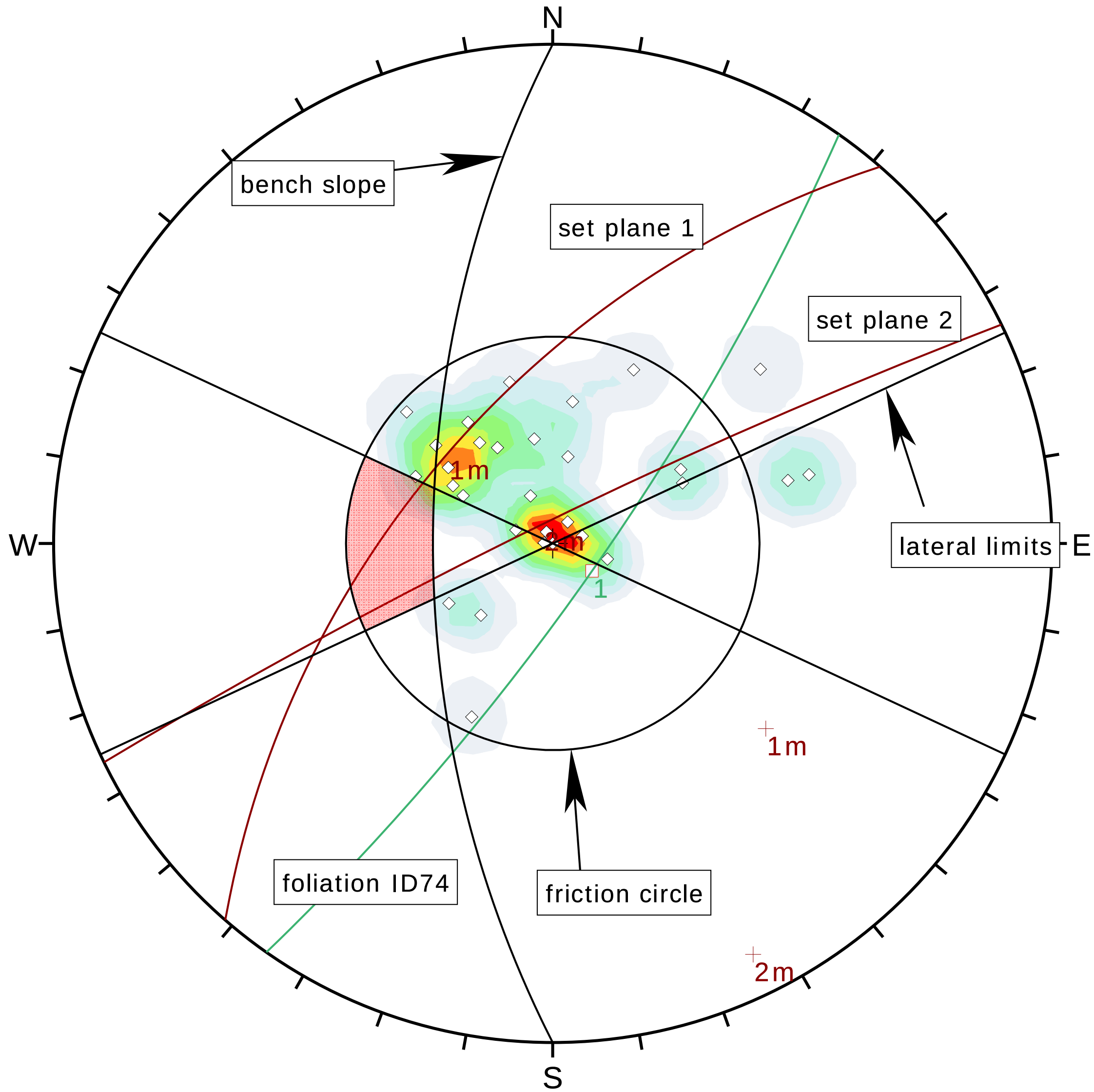
Kinematic Analysis	Planar Sliding
Slope Dip	63
Slope Dip Direction	315
Friction Angle	45°
Lateral Limits	25°

	Critical	Total	%
Planar Sliding (All)	6	31	19.35%
Planar Sliding (Set 1)	6	9	66.67%

Plot Mode	Dip Vectors
Vector Count	31 (31 Entries)
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain			
Analysis Description	Expansion Area, Planar Sliding, vector plot			
Drawn By	CHJ	*Author*	JMc	
File Name	5-6 planar vector 63face_315.dips6	*Date*	5/21/2014	*Enclosure* B-7.1

DIPS 6.008



Symbol	TYPE	Quantity
□	fol	1
◇	joint	30

Color	Density Concentrations
	0.00 - 1.70
	1.70 - 3.40
	3.40 - 5.10
	5.10 - 6.80
	6.80 - 8.50
	8.50 - 10.20
	10.20 - 11.90
	11.90 - 13.60
	13.60 - 15.30
	15.30 - 17.00

Maximum Density	16.63%
Contour Data	Dip Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

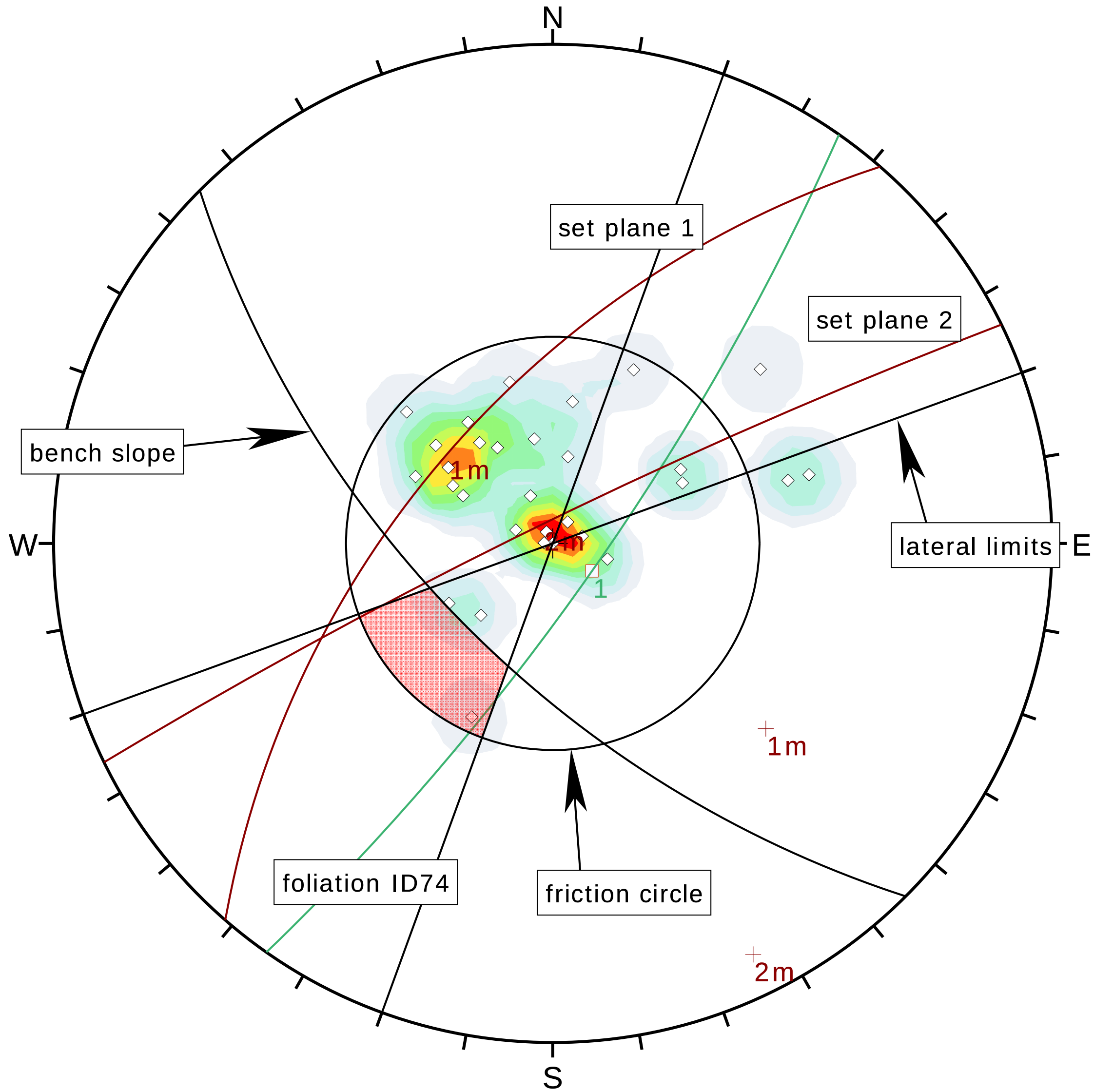
Kinematic Analysis	Planar Sliding
Slope Dip	63
Slope Dip Direction	270
Friction Angle	45°
Lateral Limits	25°

	Critical	Total	%
Planar Sliding (All)	0	31	0.00%

Plot Mode	Dip Vectors
Vector Count	31 (31 Entries)
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain		
Analysis Description	Expansion Area, Planar Sliding, vector plot		
Drawn By	CHJ	*Author*	JMc
File Name	5-6 planar vector 63face_270.dips6	*Date*	5/21/2014
Enclosure	B-7.2		

DIPS 6.008



Symbol	TYPE	Quantity
□	fol	1
◇	joint	30

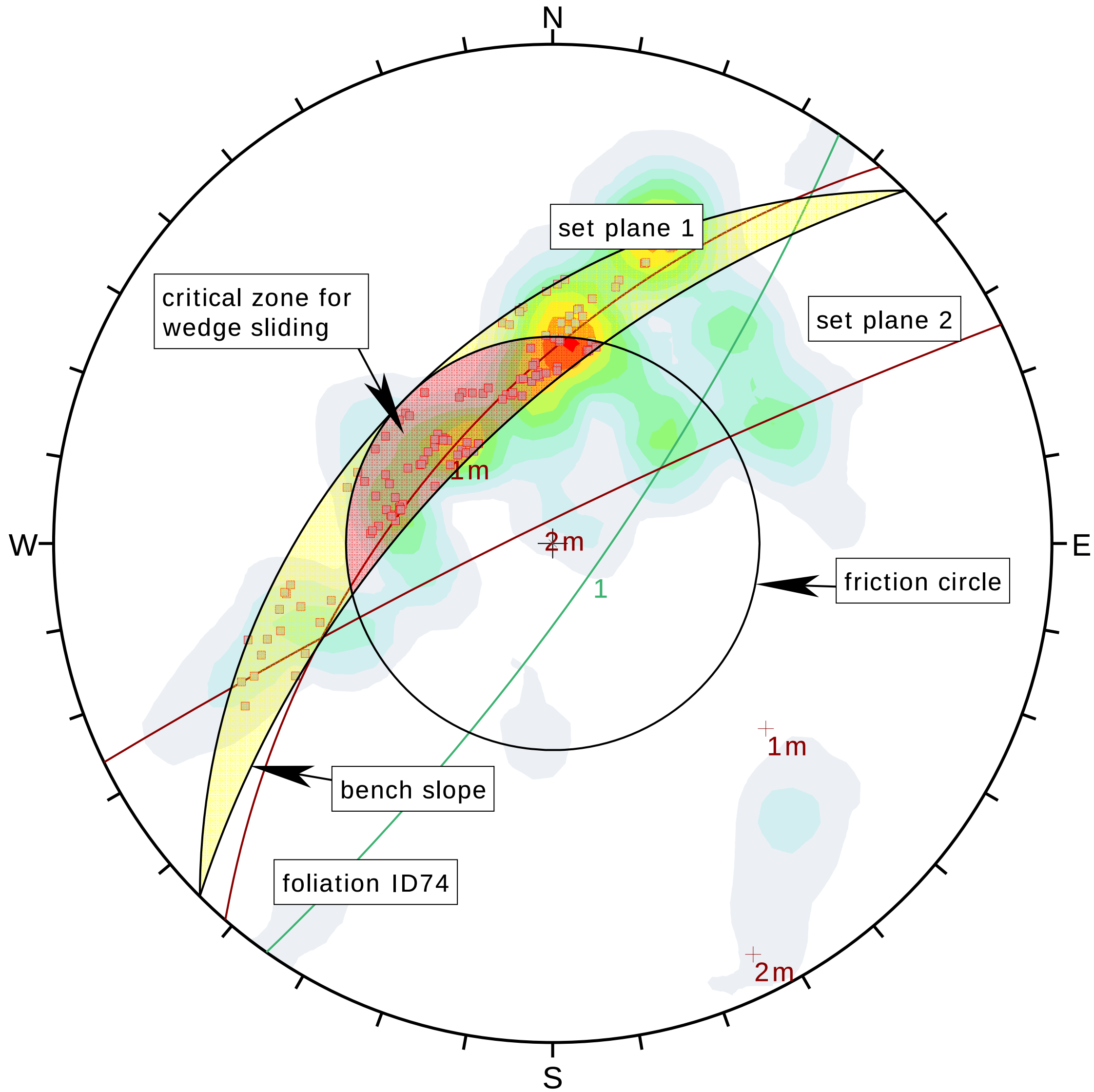
Color	Density Concentrations
	0.00 - 1.70
	1.70 - 3.40
	3.40 - 5.10
	5.10 - 6.80
	6.80 - 8.50
	8.50 - 10.20
	10.20 - 11.90
	11.90 - 13.60
	13.60 - 15.30
	15.30 - 17.00
Maximum Density	16.63%
Contour Data	Dip Vectors
Contour Distribution	Fisher
Counting Circle Size	1.0%

Kinematic Analysis	Planar Sliding		
Slope Dip	63		
Slope Dip Direction	225		
Friction Angle	45°		
Lateral Limits	25°		
	Critical	Total	%
Planar Sliding (All)	1	31	3.23%

Plot Mode	Dip Vectors
Vector Count	31 (31 Entries)
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain		
Analysis Description	Expansion Area, Planar Sliding, vector plot		
Drawn By	CHJ	*Author*	JMc
File Name	5-6 planar vector 63face_225.dips6	*Date*	5/21/2014
Enclosure	B-7.3		

DIPS 6.008



Symbol	Feature
■	Critical Intersection

Color	Density Concentrations
	0.00 - 0.80
	0.80 - 1.60
	1.60 - 2.40
	2.40 - 3.20
	3.20 - 4.00
	4.00 - 4.80
	4.80 - 5.60
	5.60 - 6.40
	6.40 - 7.20
	7.20 - 8.00

Maximum Density	7.41%
Contour Data	Intersections
Contour Distribution	Fisher
Counting Circle Size	1.0%

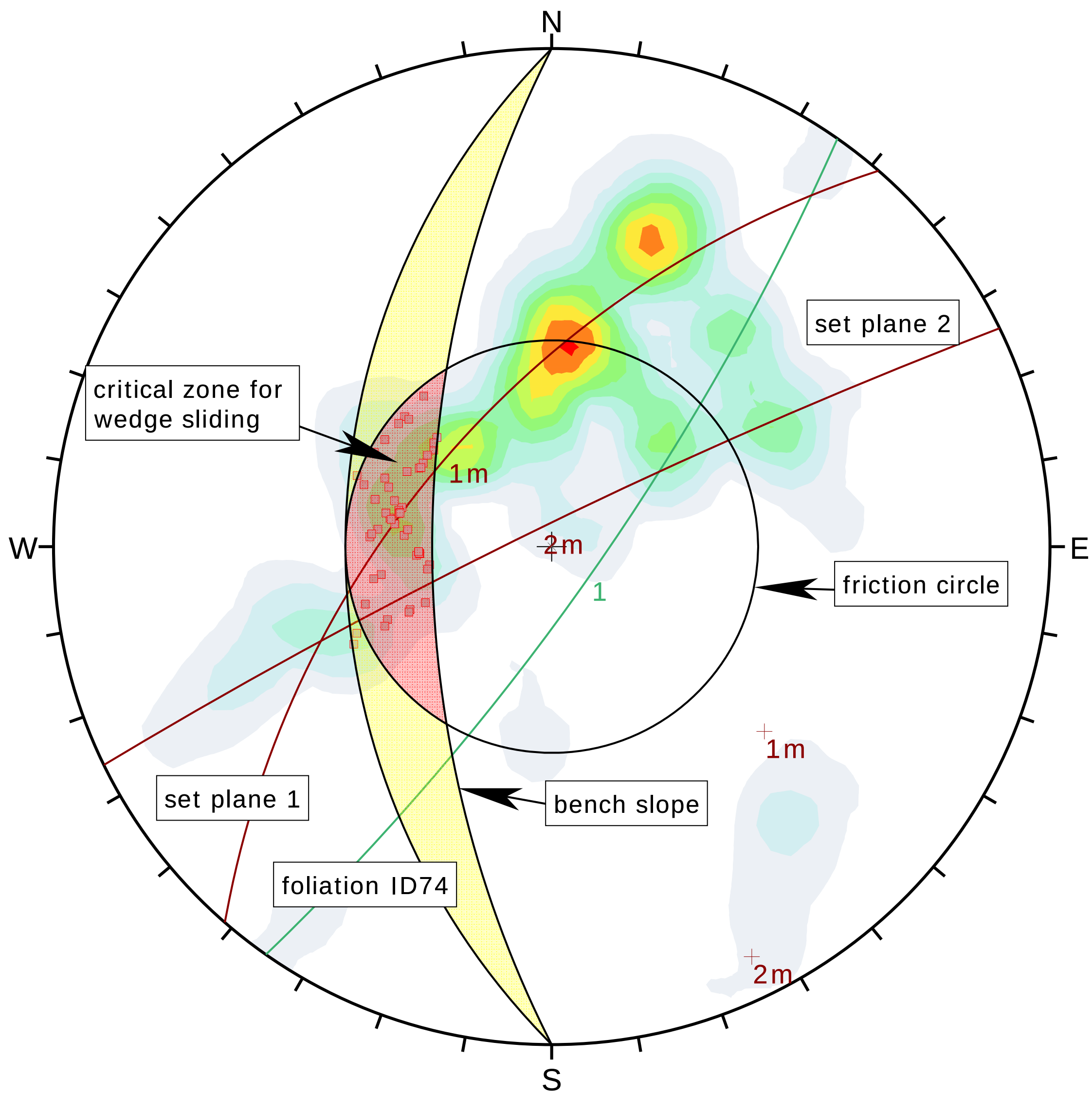
Kinematic Analysis	Wedge Sliding
Slope Dip	63
Slope Dip Direction	315
Friction Angle	45°

	Critical	Total	%
Wedge Sliding	130	465	27.96%

Plot Mode	Dip Vectors
Vector Count	31 (31 Entries)
Intersection Mode	Grid Data Planes
Intersections Count	465
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain				
Analysis Description	Expansion Area, Wedge Sliding, Intersection contour plot				
Drawn By	CHJ	*Author*	JMc		
File Name	5-6 wedge int contour 63face_315.dips6	*Date*	5/21/2014	*Enclosure*	B-8.1

DIPS 6.008



Symbol	Feature
■	Critical Intersection

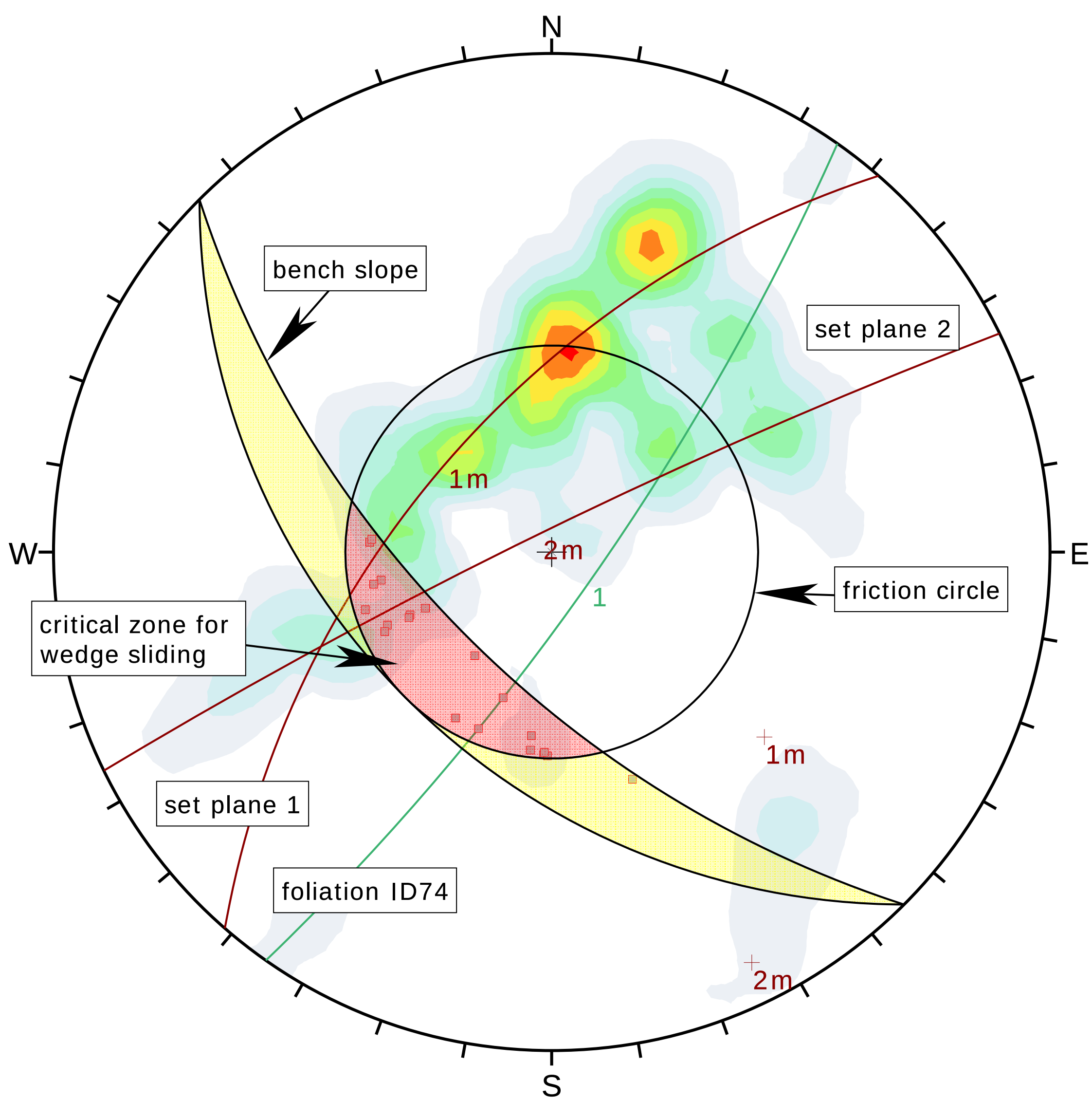
Color	Density Concentrations
	0.00 - 0.80
	0.80 - 1.60
	1.60 - 2.40
	2.40 - 3.20
	3.20 - 4.00
	4.00 - 4.80
	4.80 - 5.60
	5.60 - 6.40
	6.40 - 7.20
	7.20 - 8.00
Maximum Density	7.41%
Contour Data	Intersections
Contour Distribution	Fisher
Counting Circle Size	1.0%

Kinematic Analysis	Wedge Sliding		
Slope Dip	63		
Slope Dip Direction	270		
Friction Angle	45°		
	Critical	**Total**	**%**
Wedge Sliding	52	465	11.18%

Plot Mode	Dip Vectors
Vector Count	31 (31 Entries)
Intersection Mode	Grid Data Planes
Intersections Count	465
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain		
Analysis Description	Expansion Area, Wedge Sliding, Intersection contour plot		
Drawn By	CHJ	*Author*	JMc
File Name	5-6 wedge int contour 63face_270.dips6	*Date*	5/21/2014
Enclosure	B-8.2		

DIPS 6.008



Symbol	Feature
▫	Critical Intersection

Color	Density Concentrations
	0.00 - 0.80
	0.80 - 1.60
	1.60 - 2.40
	2.40 - 3.20
	3.20 - 4.00
	4.00 - 4.80
	4.80 - 5.60
	5.60 - 6.40
	6.40 - 7.20
	7.20 - 8.00

Maximum Density	7.41%
Contour Data	Intersections
Contour Distribution	Fisher
Counting Circle Size	1.0%

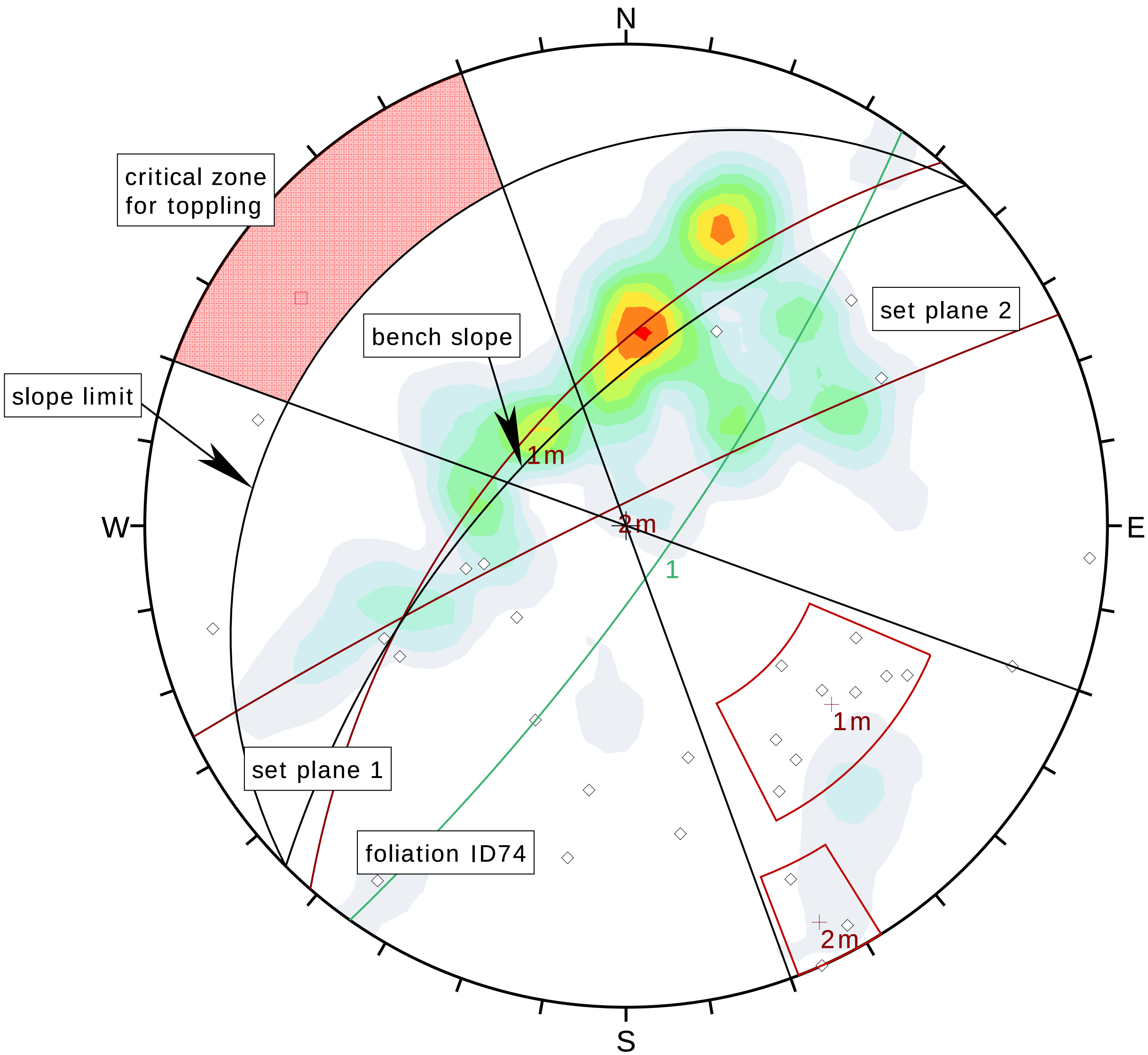
Kinematic Analysis	Wedge Sliding
Slope Dip	63
Slope Dip Direction	225
Friction Angle	45°

	Critical	Total	%
Wedge Sliding	20	465	4.30%

Plot Mode	Dip Vectors
Vector Count	31 (31 Entries)
Intersection Mode	Grid Data Planes
Intersections Count	465
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain		
Analysis Description	Expansion Area, Wedge Sliding, Intersection contour plot		
Drawn By	CHJ	*Author*	JMc
File Name	5-6 wedge int contour 63face_225.dips6	*Date*	5/21/2014
Enclosure	B-8.3		

DIPS 6.008



Symbol	TYPE	Quantity
□	fol	1
◇	joint	30

Color	Density Concentrations
	0.00 - 0.80
	0.80 - 1.60
	1.60 - 2.40
	2.40 - 3.20
	3.20 - 4.00
	4.00 - 4.80
	4.80 - 5.60
	5.60 - 6.40
	6.40 - 7.20
	7.20 - 8.00

Maximum Density	7.41%
Contour Data	Intersections
Contour Distribution	Fisher
Counting Circle Size	1.0%

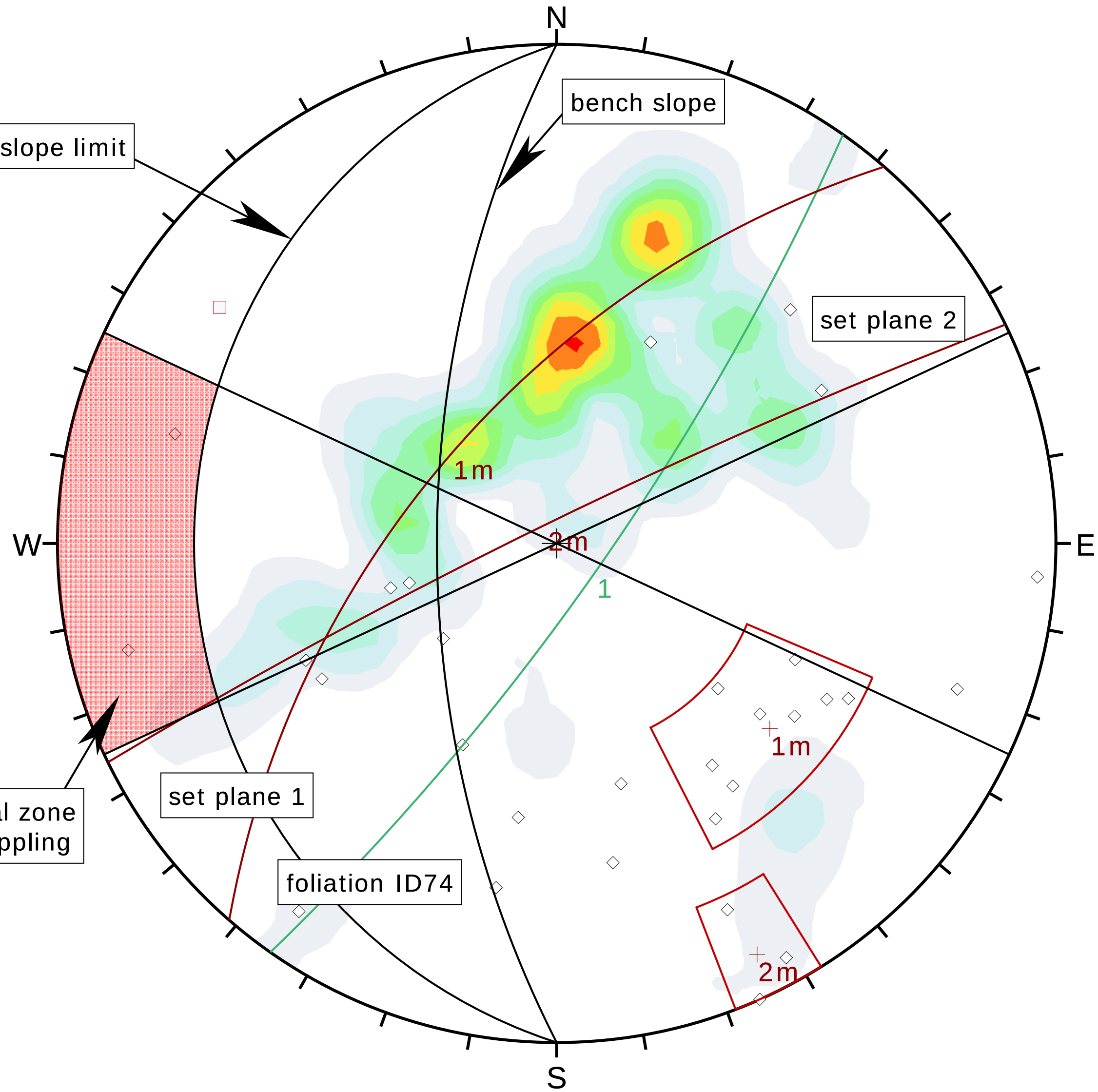
Kinematic Analysis	Flexural Toppling
Slope Dip	63
Slope Dip Direction	315
Friction Angle	45°
Lateral Limits	25°

	Critical	Total	%
Flexural Toppling (All)	1	31	3.23%

Plot Mode	Pole Vectors
Vector Count	31 (31 Entries)
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain			
Analysis Description	Expansion Area, Toppling, Pole Plot			
Drawn By	CHJ	*Author*	JMc	
File Name	5-6 topple poles 63face_315.dips6	*Date*	5/21/2014	*Enclosure* B-9.1

DIPS 6.008



Symbol	TYPE	Quantity
□	fol	1
◇	joint	30

Color	Density Concentrations
	0.00 - 0.80
	0.80 - 1.60
	1.60 - 2.40
	2.40 - 3.20
	3.20 - 4.00
	4.00 - 4.80
	4.80 - 5.60
	5.60 - 6.40
	6.40 - 7.20
	7.20 - 8.00
Maximum Density	7.41%
Contour Data	Intersections
Contour Distribution	Fisher
Counting Circle Size	1.0%

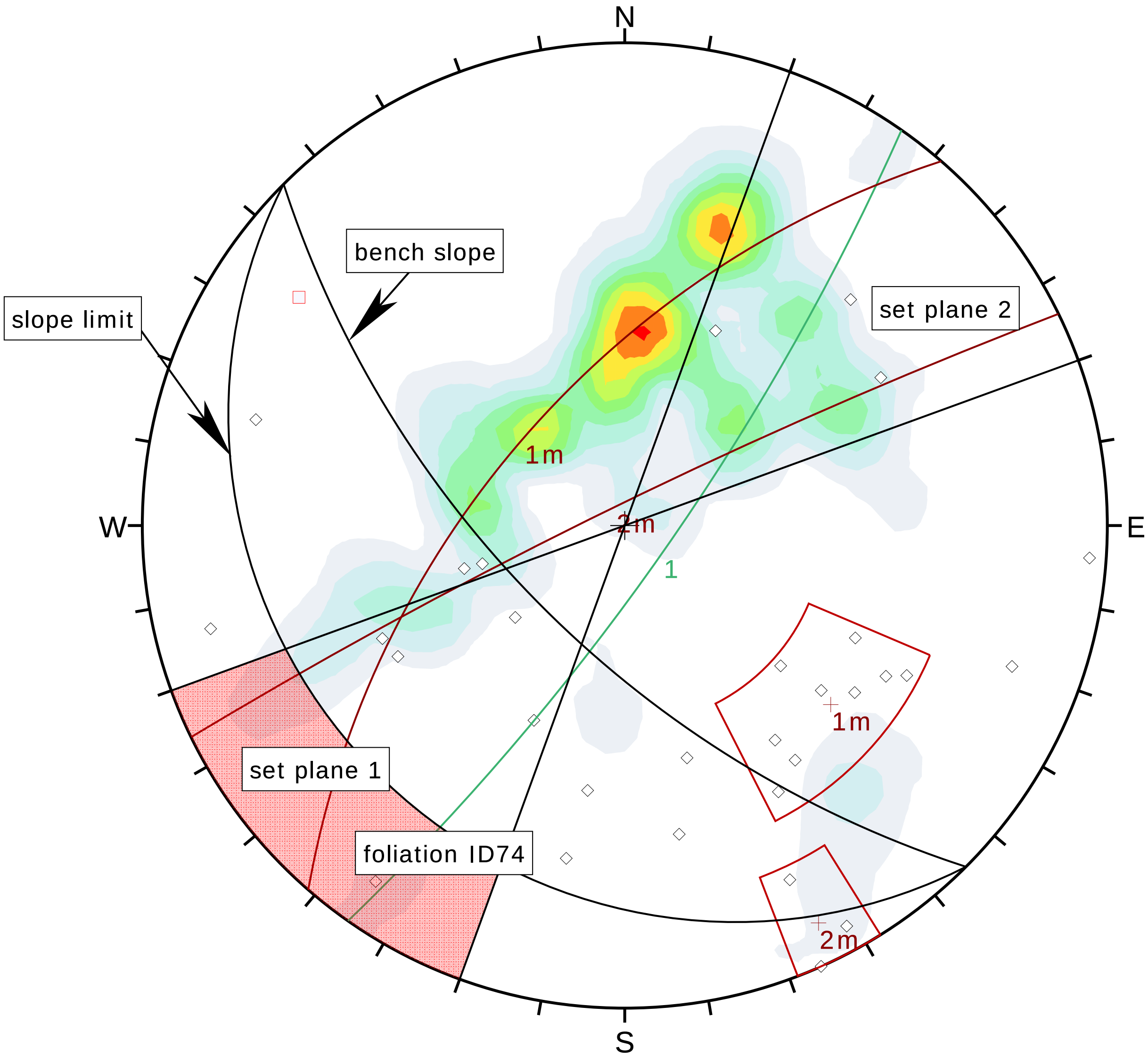
Kinematic Analysis	Flexural Toppling
Slope Dip	63
Slope Dip Direction	270
Friction Angle	45°
Lateral Limits	25°

	Critical	Total	%
Flexural Toppling (All)	2	31	6.45%

Plot Mode	Pole Vectors
Vector Count	31 (31 Entries)
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain
Analysis Description	Expansion Area, Toppling, Pole Plot
Drawn By	CHJ
Author	JMc
File Name	5-6 topple poles 63face_270.dips6
Date	5/21/2014
Enclosure	B-9.2

DIPS 6.008



Symbol	TYPE	Quantity
□	fol	1
◇	joint	30

Color	Density Concentrations
	0.00 - 0.80
	0.80 - 1.60
	1.60 - 2.40
	2.40 - 3.20
	3.20 - 4.00
	4.00 - 4.80
	4.80 - 5.60
	5.60 - 6.40
	6.40 - 7.20
	7.20 - 8.00

Maximum Density	7.41%
Contour Data	Intersections
Contour Distribution	Fisher
Counting Circle Size	1.0%

Kinematic Analysis	Flexural Toppling
Slope Dip	63
Slope Dip Direction	225
Friction Angle	45°
Lateral Limits	25°

	Critical	Total	%
Flexural Toppling (All)	1	31	3.23%

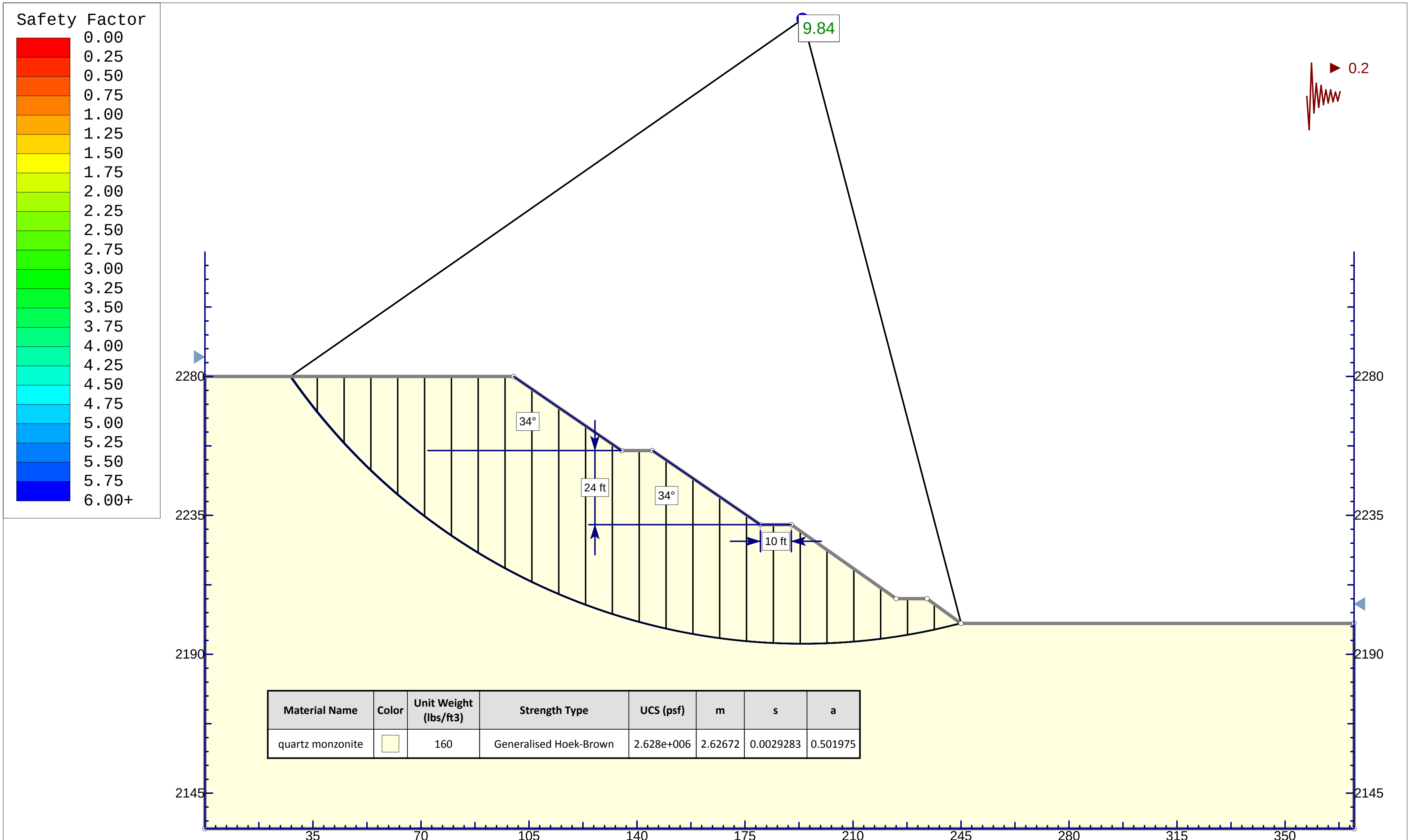
Plot Mode	Pole Vectors
Vector Count	31 (31 Entries)
Hemisphere	Lower
Projection	Equal Angle

Project	Lynx Cat Mountain		
Analysis Description	Expansion Area, Toppling, Pole Plot		
Drawn By	CHJ	*Author*	JMc
File Name	5-6 topple poles 63face_225.dips6	*Date*	5/21/2014
		Enclosure	B-9.3

DIPS 6.008

APPENDIX "C"

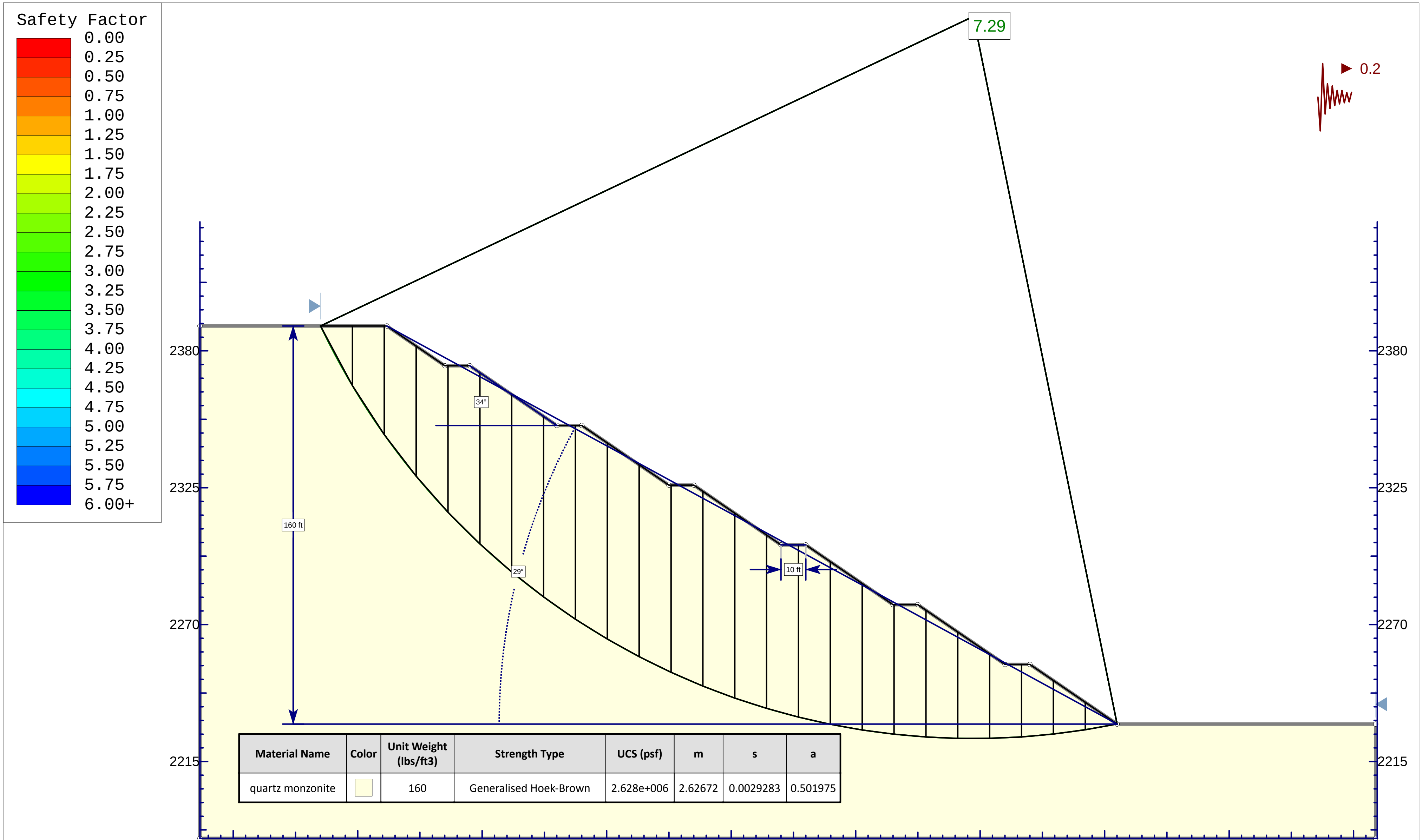
GLOBAL STABILITY CALCULATIONS



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	UCS (psf)	m	s	a
quartz monzonite		160	Generalised Hoek-Brown	2.628e+006	2.62672	0.0029283	0.501975

SLIDEINTERPRET 6.029

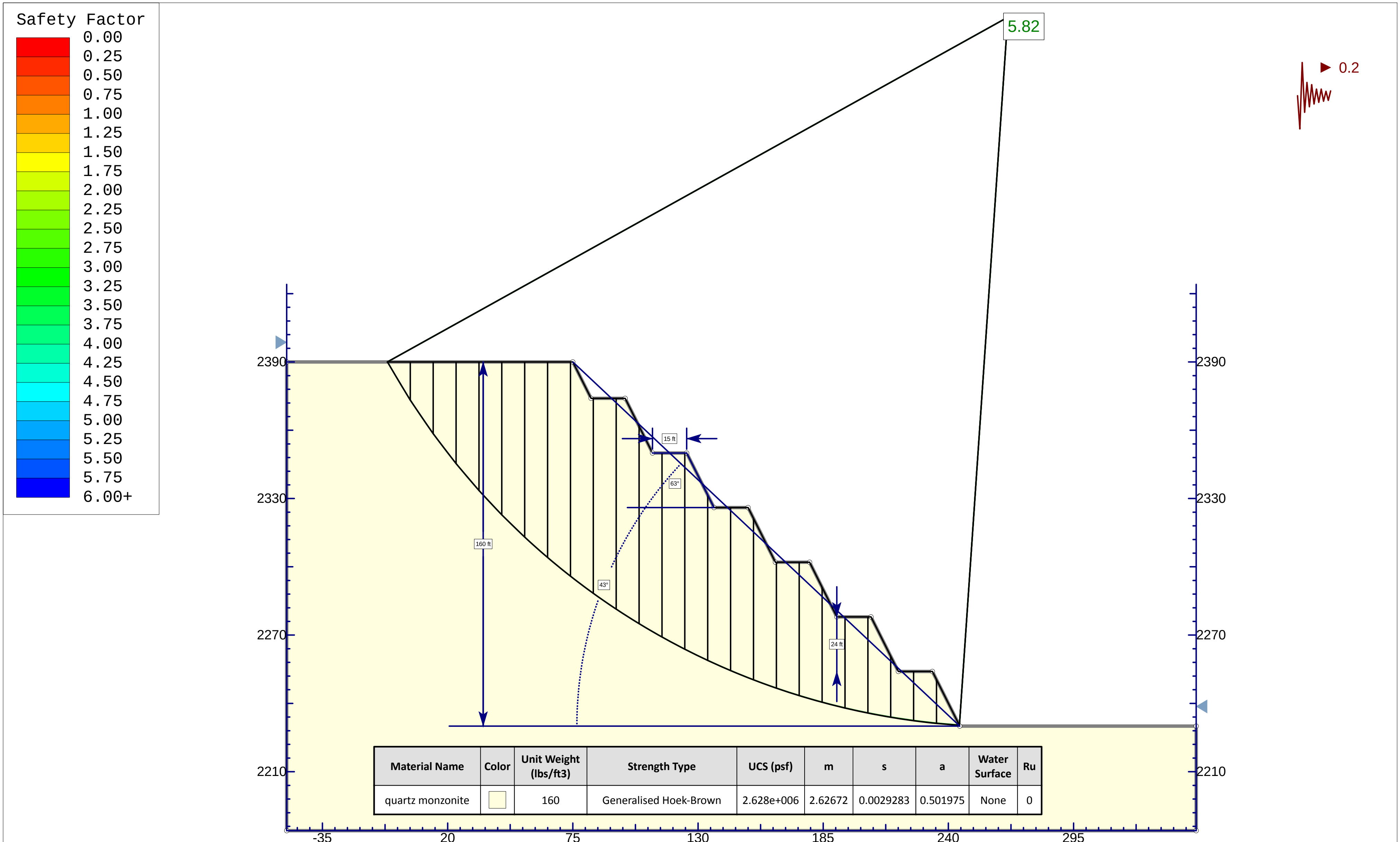
Project	Lynx Cat Mtn.				
Analysis Description	Section A-A', Existing Quarry				
Drawn By	CHJ	*Author*	JMc	*Scale*	1:520
File Name	Sect A seis.slim	*Date*	May 2014	*Enclosure*	C-1



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	UCS (psf)	m	s	a
quartz monzonite		160	Generalised Hoek-Brown	2.628e+006	2.62672	0.0029283	0.501975

Project	Lynx Cat Mtn.				
Analysis Description	Section E-E', Expanion Area				
Drawn By	CHJ	*Author*	JMc	*Scale*	1:650
File Name	Sect B seis.slim	*Date*	May 2014	*Enclosure*	C-2

SLIDEINTERPRET 6.029



Material Name	Color	Unit Weight (lbs/ft3)	Strength Type	UCS (psf)	m	s	a	Water Surface	Ru
quartz monzonite		160	Generalised Hoek-Brown	2.628e+006	2.62672	0.0029283	0.501975	None	0

Project	Lynx Cat Mtn.				
Analysis Description	Model Slope, Suggested Benching Scheme				
Drawn By	CHJ	*Author*	JMc	*Scale*	1:700
File Name	Model 70 Slope seis.slim	*Date*	May 2014	*Enclosure*	C-3

SLIDEINTERPRET 6.029

APPENDIX "D"

SITE PHOTOGRAPHS

Photo 1: Overview of quarry hill looking northeast.

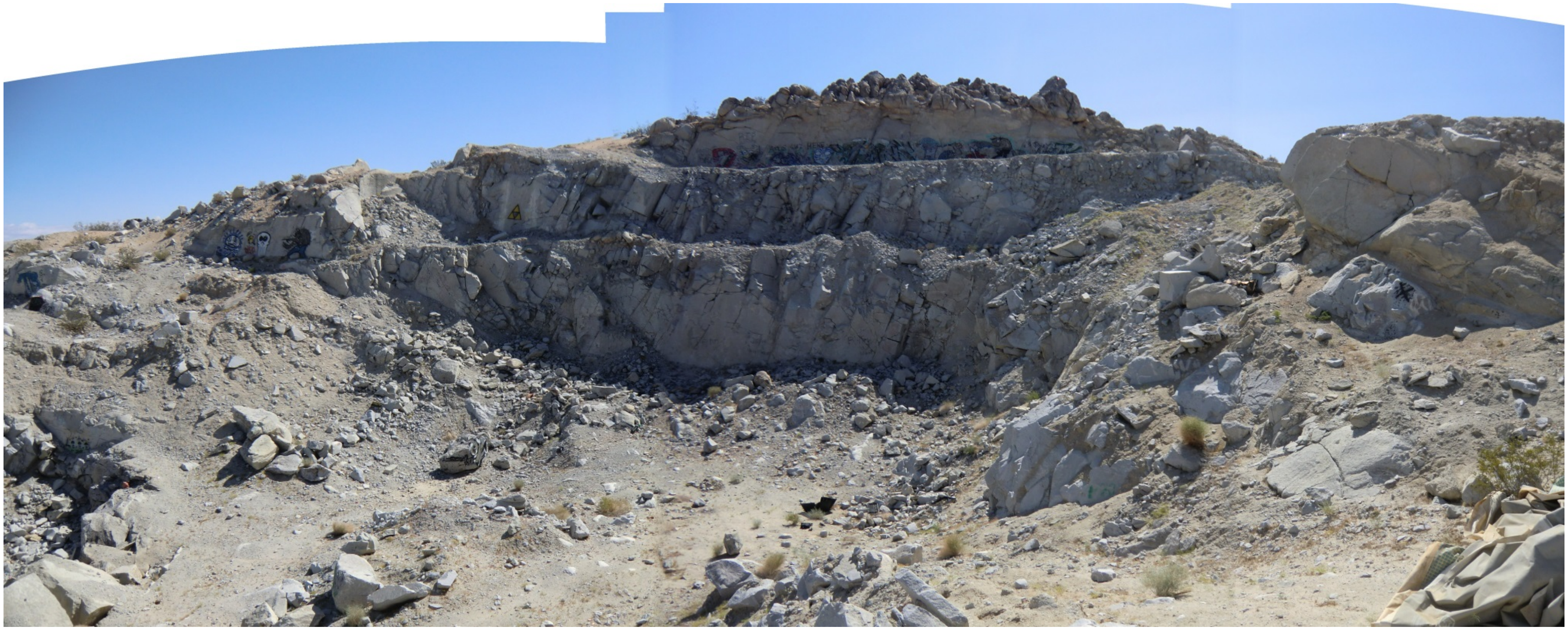


Photo 2: Overview of upper portion of quarry. View east.

Photo 3: Dominant joint faces as quarry bench faces. View south.

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Photo 4: Contact of fresh rock (left) against highly weathered zone (right) showing platy fabric. (Near Map Location 3)

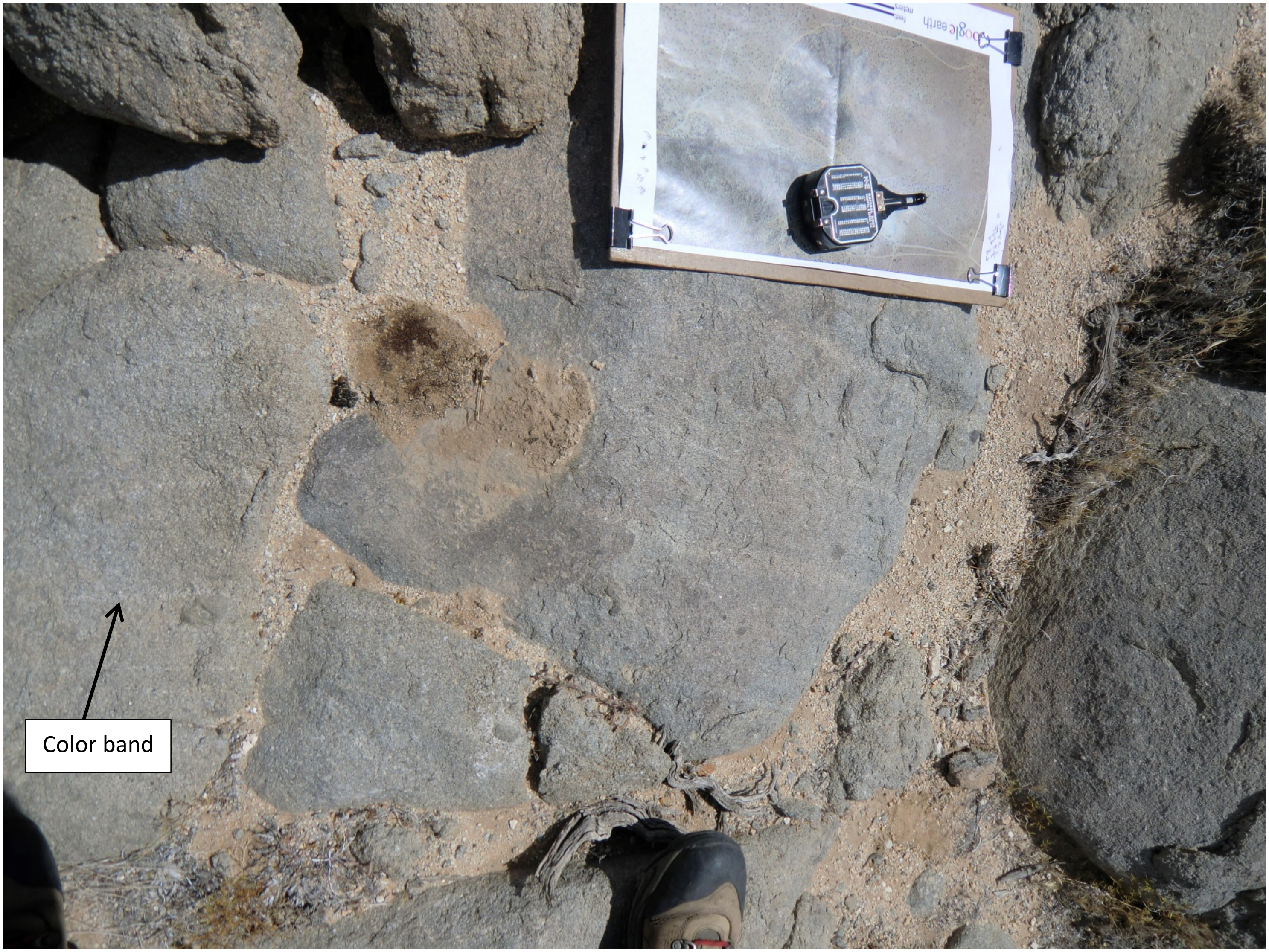

Photo 5: Location 5. Light color bands as localized foliation. View downward at ground surface.

Photo 6: Expansion area hill with native boulder outcrops. View southeast.

Photo 7: Exfoliation plates on dome structure of expansion area.

Photo 8: Expansion area outcrops as exfoliation dome. View northeast.