GEOTECHNICAL ENGINEERING & ENGINEERING GEOLOGY

May 23, 2014

Chiquita Canyon Landfill
29201 Henry Mayo Drive
Castaic, California 91384

Job No. 2002-036-004

Attention: Mr. Michael Dean
Division Vice President

Subject: Geotechnical Evaluation of Updated Excavation Plan
Master Plan Revision
Chiquita Canyon Landfill
29201 Henry Mayo Drive
Castaic, California

Gentlemen:

This letter summarizes the findings from R. T. Frankian & Associates' (RTF&A) geotechnical evaluation of the updated Chiquita Canyon Landfill (CCL) *Proposed Project Excavation Plan* (herein referred to as the 2014 Excavation Plan) for the Master Plan Revision (MPR). The 2014 Excavation Plan, prepared by Golder Associates (Golder) and dated April 30, 2014, supersedes the December 2011 Golder *Excavation Plan* presented in our January 27, 2012 MPR geotechnical investigation report (RTF&A, 2012c).

Since the completion of our 2012 MPR report, RTF&A has provided additional geotechnical services for CCL. These have included construction observation services during development of Cell 5 (RTF&A, 2012d and 2012e) and a geotechnical investigation for future Cell 6 (RTF&A, 2014). Geologic and geotechnical data developed for this additional work have been incorporated into this geotechnical evaluation.

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SUMMARY OF 2014 EXCAVATION PLAN REVISIONS

The 2014 Excavation Plan revisions are primarily associated with the future landfill entrance facility and the Future Potential Conversion Technology Set-Aside Area (herein referred to as the "Set-Aside Area"). The landfill entrance facility will be located in the southwest corner of the CCL site, northwest of the intersection of California State Highway 126 (also known as Henry Mayo Drive in the vicinity of CCL) and Wolcott Way. It will include a new entrance road, scales, gatehouse, and administration building. The new entrance road alignment will extend westerly from the current intersection of Franklin Parkway and Wolcott Way, extending west-southwesterly toward the current landfill entrance. The 2011 Excavation Plan indicated the grading of two cut slopes at the west end of the entrance facility. Revisions to the entrance facility, as depicted on the 2014 Excavation Plan, indicate two additional cut slopes, and modification of one of the previously proposed cut slopes.

The Set-Aside Area will be located within a southerly-draining steep-walled canyon (herein referred to as "Wolcott Canyon") located immediately north of the intersection of Wolcott Way and Franklin Parkway. Potential grading for the Set-Aside Area will include construction of a near-level pad at approximate elevation 1025 feet above mean sea level (msl), with associated cut and fill slopes surrounding the pad. The Set-Aside Area pad will be accessible by way of road extending from the north end of Wolcott Way to the southwest corner of the graded pad.

The 2011 Excavation Plan indicated Potential Borrow Area cut slopes along the northern and northwestern walls of Wolcott Canyon. The 2014 Excavation Plan includes an additional Potential Borrow Area cut slope and pad southwest of the Set-Aside Area pad.

The grading associated with the 2014 Excavation Plan is indicated on our Geotechnical Map, presented as Figures 1.1 and 1.2. The 2014 Excavation Plan is included as Figure 2.

GEOTECHNICAL EVALUATION

The geotechnical evaluation was performed to provide additional temporary slope stability calculations for Cut Slope CS-7 and to assess the impact of the site geologic and geotechnical conditions relative to the revised MPR development at CCL, as depicted on the 2014 Excavation Plan. This included RTF&A evaluating the stability of proposed new cut slopes. The geologic conditions within the site are shown on the Geotechnical Map (Figures 1.1 and 1.2). The geologic data presented in our 2012 MPR report (RTF&A, 2012c) have been slightly modified to reflect new findings from studies post-dating our 2012 report, changed geologic interpretations, and/or corrections. Specifically, we have revised the depiction of the inactive faulting identified in East Canyon, based on our 2006 fault study (RTF&A, 2006b) and adjusted geologic contacts in the areas of Cell 5 and future Cell 6, based on additional geotechnical work (RTF&A, 2012d, 2012e, and 2014). The adjusted geologic contacts were mapped using the March 12, 2013 aerial survey prepared by Cooper Aerial Survey Co.

From a geotechnical standpoint, the most significant plan revisions relate to the grading proposed along the north side of the landfill entrance facility in which two new cut slopes (designated as Cut Slopes CS-26 and CS-27) are proposed, and a previously planned cut slope (Cut Slope CS-20) will be relocated and reduced in height. The three cut slopes are indicated on the Geotechnical Map (Figure 1.2). Data specific to the three cut slopes, including slope height, gradient, and underlying geologic conditions, are summarized in Table 1, Summary of Cut Slopes. The stability of the three cut slopes is addressed below. Additionally, we are providing a preliminary evaluation of the potential grading of the Set-Aside Area and Potential Borrow Area slopes.

We also received feedback from Los Angeles County Department of Public Works Geotechnical Materials and Engineering Division (GMED) relative to factor of safety requirements for the proposed temporary excavation slopes that have the potential to exist for an extended period of time. GMED indicated that a temporary factor of safety of 1.25 is acceptable for the proposed excavation slopes within the Chiquita Canyon Landfill property boundary.

However, any potential failure planes that daylight off property that have the potential to exist in an unmodified condition for an extended period of time will need to meet the GMED static factor of safety requirements of 1.5 for permanent slopes.

We have reviewed the numerous proposed cut slopes for the 2012 MPR Report and have determined that only proposed Cut Slope CS-7, depicted on Geotechnical Section S5-S5' (Figure 3 of this report), has the potential to exist unmodified for an extended period of time and has a failure plane that extends off-site that will have a factor of safety of less than 1.5. In addition to the revised geotechnical evaluation for plan revisions presented in this report, we also performed additional slope stability calculations for Cut Slope CS-7 as presented below. Table 1 from our MPR Report has been updated based on the slope stability evaluations and is re-presented in this report.

CUT SLOPE CS-7

Cut Slope CS-7 (Figure 1.1) will be graded as a southeast- to southwest-facing, 2:1 to 3:1 slope. The total slope height is approximately 205 feet high, with the upper (permanent) portion of the cut slope approximately 35 feet high and the lower (lined) portion of the slope 170 feet high. The cut slope will encounter Saugus Formation units and landslides Qls G through Qls I, and Qls L. Bedding in the underlying Saugus Formation strikes from north-south to northeast, with easterly dips between 20 and 40 degrees. As indicated on Geotechnical Section S5-S5' (Figure 3), a daylighted bedding component of 17 degrees will be exposed in the cut slope (RTF&A, 2012c). It is anticipated that grading of Cut Slope CS-7 will remove landslides Qls G through Qls I, and Qls L. If any landslide debris remains after completion of the cut slope, the debris should be removed and certified engineered fill placed to restore grade.

Cut Slope CS-7 has the potential to exist for an extended period of time and has a potential bedding plane that extends beyond the Chiquita Canyon Landfill property limit. Accordingly, a static factor of safety of 1.5 will be required. As presented in the MRP report (RTF&A, 2012c), the static factor of safety is greater than 1.25, but is less than 1.5. Slope

stability calculations were performed for a buttress shear key design that meets the GMED slope stability static factor of safety requirements of 1.5. The slope stability calculations were performed using the below listed shear strength parameters and the computer program Slope/W. The slope stability calculations are presented in the Appendix of this report. The proposed buttress shear key and the slope stability results that exceed a static factor of safety of 1.5 are shown on Geotechnical Section S5-S5'.

The recommended shear strength parameters are based on the results of the direct shear test results (RTF&A, 2012c). In addition, we also reviewed shear strength parameters presented in the referenced report for the subject site and nearby vicinity. Presented in the following table are the selected bedding plane shear strengths, as well as the cross-bedding and compacted fill shear strengths recommended for slope stability evaluation at the site.

MATERIAL	COHESION (psf)	ANGLE OF SHEARING RESISTANCE (degrees)
Landslide Failure Plane (MSR)	100	10
QTs & Tp Bedding Plane (MSR)	200	18
Seismic Bedding Plane (SSR)	300	26
QTs Cross Bedding (SSR)	600	36
Tp Cross Bedding (SSR)	500	30
Compacted Fill (SSR)	350	30

Mitigation to obtain a permanent factor of safety of 1.5 for Cut Slope CS-7 will consist of excavating a 40-foot-wide buttress shear key at approximate elevation of 1,300 feet, downgradient from the proposed perimeter road, as depicted on Figure 1.1 and attached Geotechnical Section S5-S5'. Construction of the recommended buttress shear key provides the required factor of safety of 1.5 for static slope stability conditions, as presented in Figure 3 and the Appendix.

CUT SLOPE CS-20

Cut Slope CS-20 will be graded as a southeast-facing, 2:1 (horizontal:vertical) slope, to a height of approximately 30 feet. The cut slope will be graded for a debris basin along the north

side of the project. The upper portion of the cut slope will expose Saugus Formation units; Pleistocene terrace deposits could be encountered in the lower portion of CS-20. Bedding in the Saugus Formation strikes northwest and dips 15 degrees to the northeast, with an apparent bedding of 6 degrees dipping into the proposed cut slope. The Saugus Formation bedding orientation is favorable with respect to the southeast-facing cut slope. Bedding within the terrace deposits is essentially flat-lying and is grossly stable. Accordingly, Cut Slope CS-20 is considered grossly stable from a geologic standpoint.

CUT SLOPE CS-26

Cut Slope CS-26 is proposed as an 85-foot-high, southwest-facing, 2:1 slope. The cut slope will expose Saugus Formation units in which the underlying bedding strikes northwest and dips 12 degrees towards the northeast. This bedding orientation is favorable with respect to southwest-facing cut slope, and Cut Slope CS-26 is considered grossly stable from a geologic standpoint.

CUT SLOPE CS-27

Cut Slope CS-27 will consist of a 75-foot-high, south- to southwest-facing, 2:1 slope. The cut slope is underlain by Saugus Formation units in which the bedding strikes northwest, dipping 15 to 25 degrees towards the northeast. This bedding orientation is favorable with respect to Cut Slope CS-27, and the cut slope is considered grossly stable from a geologic standpoint.

POTENTIAL SET-ASIDE AREA AND BORROW AREA SLOPES

The 2014 Excavation Plan includes grading for potential improvements in the Set-Aside Area and three Potential Borrow Areas, as depicted with green elevation contours on Figure 1.2. As shown on Figure 1.2, perimeter cut slopes would be created for any grading associated with the Set-Aside Area pad, including slopes on the north and east sides of the pad, as well as a

borrow area slope along the northwest side. These slopes would range from 100 feet on the north and east to approximately 125 feet for the northwest borrow area slope. The proposed pad elevation of the Set-Aside Area would be established at an elevation of approximately 1025 feet msl. Additionally, borrow area slopes would be graded along the western and northern walls of Wolcott Canyon. The maximum proposed heights for these slopes range from 100 feet to 225 feet.

The cut slopes will encounter sedimentary bedrock units of the Saugus Formation, with the underlying bedding striking northwest and dipping approximately 20 to 40 degrees towards the northeast. Based on the orientation of bedding relative to cut slopes, there is a potential for adversely dipping, or "daylighted," bedding for the easterly-facing cut slopes along the western side of Wolcott Canyon. Potential daylighted bedding may require some type of stabilization, such as buttresses, retaining walls, or flattening of the cut slope gradient.

Landslides would likely be encountered in the 160-foot-high borrow area cut slope in the southwest corner of the Set-Aside Area, and in the borrow area cut slope along the north wall of Wolcott Canyon. Both landslides would require complete removal to establish a stable slope configuration if the potential grading depicted on the 2014 Excavation Plan is implemented. If the cut slopes do not effectively remove the landslides, additional excavation deeper than the proposed cut grades would be necessary to remove the slide debris, and the slope grades restored with engineered fill.

The floor of the Set-Aside Area is mantled by Holocene alluvial deposits. These materials may be susceptible to liquefaction and/or hydroconsolidation. If grading of the Set-Aside Area is performed, alluvial deposits determined to be susceptible to liquefaction or hydroconsolidation would need to be removed and replaced with engineered fill materials.

Once site-specific grading plans are developed for the Set-Aside Area and the Potential Borrow Area slopes, geotechnical investigations will need to be performed to refine the geotechnical mitigation measures and recommendations addressed above.

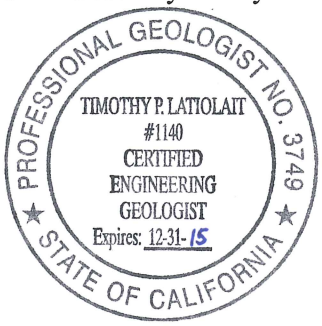
SECTION 111 STATEMENT

Based on our review of the 2014 Excavation Plan and the referenced reports, it is our professional opinion that the proposed MPR development will be safe from hazard of landslide, settlement, or slippage and will not adversely affect the geotechnical conditions of off-site properties, provided our recommendations and the requirements of the Los Angeles County Building Code are followed.

Our professional services have been performed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical engineers and geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional advice included in this report. This report has been prepared for CCL and their design consultants, to be used solely for planning and design of the MPR and associated grading.

The following are attached and complete this report.

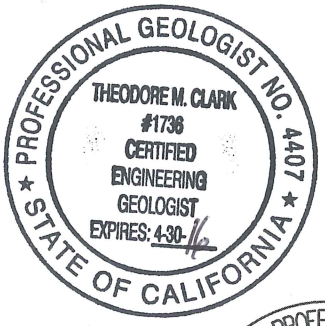
- Table 1 – Summary of Cut Slopes
- Geotechnical Map – Figures 1.1 and 1.2
- 2014 Excavation Plan, titled "Proposed Project Excavation Plan" – Figure 2
- Geotechnical Section S5-S5' – Figure 3
- Appendix – Stability Analyses



Respectfully submitted,

R. T. FRANKIAN & ASSOCIATES

by: Timothy P. Latiolait
Principal Engineering Geologist



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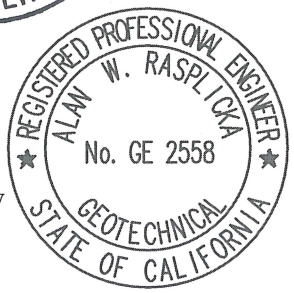

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RTF&A
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REFERENCES

EMCON, 1990a, "Geologic/Hydrogeologic Report, Chiquita Canyon Landfill Expansion, Los Angeles County, California," for Laidlaw Waste Systems, dated May 1990 (sic), Project No. 976-03.04.

EMCON, 1990b, "Fault Investigation, Chiquita Canyon Landfill, Los Angeles County, California," for Laidlaw Waste Systems, dated October 19, 1990, Project No. 976-03.13.

EMCON, 1997a, "Joint Technical Document, Chiquita Canyon Landfill," for Chiquita Canyon Landfill, Inc., dated September 1997, Project No. 976-003.026.

EMCON, 1997b, "Chiquita Canyon Landfill Cell Development, Canyon C., Cell II, Phase 2a Subgrade Geologic Mapping," prepared for California Regional Water Quality Control Board, Los Angeles Region, dated September 21, 1997.

EMCON, 1997c, "Chiquita Canyon Landfill Cell Development; Canyon C, Cell II, Phase 2B Subgrade Geologic Mapping," for USA Waste Services, dated October 21, 1997, Project No. 20976-001.048.

Frankian, R. T., & Associates, 1989, "Report of Geotechnical Investigation, Tentative Tract No. 19784, Hasley Industrial Center, Valencia, California," for Valencia Company, dated August 11, 1989, Job No. 88-059-FT.

Frankian, R. T., & Associates, 1990, "Report of Geotechnical Investigations, Proposed U. S. Post Office Site and Vicinity, Valencia, California," dated February 2, 1990, Job No. 85-183-F3.

Frankian, R. T., & Associates, 1992, "Report of Geotechnical Investigation, Post Office Site and Vicinity, Franklin Parkway Extension to Route 126, Valencia, California," dated September 28, 1992, Job No. 89-025-F7.

Frankian, R. T., & Associates, 2003, "Geotechnical Report of Observation and Testing And As-Built Geologic Report, Sedimentation Basin, Chiquita Canyon Landfill, Valencia, California," for Chiquita Canyon Landfill, Republic Services, Inc., dated April 4, 2003, Job No. 2002-033-11.

Frankian, R. T., & Associates, 2005, "Semi-Annual Groundwater Monitoring Report, First and Second Quarters 2005, Chiquita Canyon Landfill Compliance File No. C1-6231, Valencia, California," for Chiquita Canyon Landfill, dated June 29, 2005, Job No. 2004-001-90.

Frankian, R. T., & Associates, 2006a, "Slope Stability Study, East Main Canyon, Chiquita Canyon Landfill, Valencia, California," for Chiquita Canyon Landfill, dated March 13, 2006, Job No. 2002-036-01.

Frankian, R. T., & Associates, 2006b, "Geologic Fault Study, East Canyon, Chiquita Canyon Landfill, Valencia, California," for Chiquita Canyon Landfill, dated April 11, 2006, Job No. 2002-036-01.

Frankian, R. T., & Associates, 2009a, "Semi-Annual Groundwater Monitoring Report, First and Second Quarters 2009, Chiquita Canyon Landfill Compliance File No. C1-6231, Valencia, California," for Chiquita Canyon Landfill, dated June 29, 2009, Job No. 2004-001-90.

Frankian, R. T., & Associates, 2009b, "Geotechnical Investigation, South Main Canyon, Chiquita Canyon Landfill, Castaic, California," for Chiquita Canyon Landfill, dated November 20, 2009, Job No. 2002-036-03.

Frankian, R. T., & Associates, 2012a, "Geotechnical Investigation, Landfill Entrance Road, Chiquita Canyon Landfill, 29201 Henry Mayo Drive, Castaic, California," for Chiquita Canyon Landfill, dated January 13, 2012, Job No. 2002-036-006.

Frankian, R. T., & Associates, 2012b, Hydrogeologic Report, Chiquita Canyon Landfill, Castaic, California," for Chiquita Canyon Landfill, dated January 20, 2012, Job No. 2002-036-005.

Frankian, R. T., & Associates, 2012c, "Geotechnical Investigation, Master Plan Revision, Chiquita Canyon Landfill, Castaic, California," for Chiquita Canyon Landfill, dated January 27, 2012, Job No. 2002-036-004.

Frankian, R. T., & Associates, 2012d, "Report of Geotechnical and Geosynthetic CQA Services, Chiquita Canyon Landfill, Cell 5 Expansion, File No. 67-020, Wdid No. 4A190359001, 29201 Henry Mayo Drive, Castaic, California," for Chiquita Canyon Landfill, dated September 21, 2012, Job No. 2002-036-008.

Frankian, R. T., & Associates, 2012e, "Report of Geotechnical Observation and Testing Services, Grading and Construction Activities, Areas Beyond Constructed Cell 5 Liner Limits, Chiquita Canyon Landfill, Castaic, California," for Chiquita Canyon Landfill, dated November 30, 2012, Job No. 2002-036-004.

Frankian, R. T., & Associates, 2014, "Geotechnical Investigation, Cell 6 Design Report, Chiquita Canyon Landfill, Castaic, California," for Chiquita Canyon Landfill, dated February 25, 2014, Job No. 2002-036-004.

GeoLogic Associates, 2005a, "Exploratory Geotechnical Report, Module 3/4/5 Liner Design and Construction, Chiquita Canyon Landfill, Valencia, California," for Bryan A. Stirrat & Associates, dated January 28, 2005, Job No. 2004-207.

GeoLogic Associates, 2005b, "Exploratory Geotechnical Report Addendum, Module 3/4/5 Liner Design and Construction, Chiquita Canyon Landfill, Valencia, California," for Bryan A. Stirrat & Associates, dated February 14, 2005, Job No. 2004-207.

GeoLogic Associates, 2005c, "Composite Liner System Construction, Report of Geotechnical and Geosynthetic CQA Services, Cells 4 and 5, Chiquita Canyon Landfill, Valencia, California," for Republic Services of California, LLC, dated December 2005, Job No. 2005-071.

Shaw-EMCON/OWT, 2002, "Report on Evaluation of Existing Landslide Area, Chiquita Canyon Landfill, Los Angeles County, California," for Republic Services of California, dated December 2002, Project 827026, Task 40000000.

TABLE 1

SUMMARY OF CUT SLOPES
North Canyon Expansion

CUT SLOPE	FIGURE NO.	SLOPE GRADIENT	SLOPE HEIGHT (total/permanent)	SLOPE FACE DIRECTION	GEOLOGIC MATERIALS	GEOLOGIC SECTION	GEOLOGIC STABILITY	ADDITIONAL RECOMMENDED GRADING
CS-1	1.1	2:1	300'/200'	S to SE	Tp	S11-S11'	Bedding dipping steeper than slope gradient; grossly stable	None
CS-2	1.1	2:1	150'/80'	SSE	Tp	S12-S12'	Bedding dipping steeper than slope gradient; grossly stable	None
CS-3a	1.1	2:1	220'/175'	ESE	Tp	S13-S13', S26-S26'	Bedding dipping parallel to or steeper than slope gradient; grossly stable	None
CS-3b	1.1	2:1	75'/0	ESE	Tp	S26-S26'	Bedding dipping steeper than slope gradient; grossly stable	None
CS-4	1.1	2:1 to 4:1	210'/120'	SE	Tp, Qls E, Qls F, af	S16-S16'	Bedding dipping parallel to or steeper than slope gradient; grossly stable	Qls E & Qls F and af to be removed during grading
CS-5	1.1	2:1 to 3:1	120'/30'	SE to S	Tp, Qls F, af	S15-S15', S24-S24'	Daylighted bedding; stable by analyses	Remove Qls F and af below elevation 1400 feet; reconstruct as stability fill to restore grade
CS-6	1.1	2½:1 to 3:1	290'/95'	SSE	Tp, QTs, Qls H-J	S17-S17', S20-S20'	Daylighted bedding; stable by analyses	Remove Qls H through Qls J during grading
CS-7	1.1	2:1 to 3:1	205'/35'	SE to SW	QTs, Qls G - I, & L, af	S5-S5'	Daylighted bedding; stable by analyses	Construct 40 feet wide shear key at approximate elevation 1300 feet. Shear key should extend through QTs units and 5 feet into Tp units.
CS-8	1.1	2:1	225'/75'	SW	QTs	---	Favorable bedding; grossly stable	None
CS-9	1.1	2:1	150'/0	S	QTs, Qols A, Qls N, Qls O	S19-S19', S25-S25'	Daylighted bedding; slope stable by analyses	Qols A, Qls N & Qls O to be removed during grading. Restore existing grades above MPR grading footprint with engineered fill.
CS-10	1.1	2:1	185'/75'	SW	QTs	S2-S2'	Favorable bedding; grossly stable	None
CS-11	1.1	2:1	150'/65'	WSW	QTs	S1-S1'	Favorable bedding; grossly stable	None
CS-12	1.1	2:1	100'/100'	NW and SE	QTs, Qls P	S21-S21'	Favorable bedding; grossly stable	None
CS-13	1.1	2:1	50'/50'	SW	QTs	---	Favorable bedding; grossly stable	None
CS-14	1.1	2:1	20'/20'	SW	QTs	---	Favorable bedding; grossly stable	None
CS-15	1.1	2:1	50'/50'	SW	QTs	---	Favorable bedding; grossly stable	None

TABLE 1

SUMMARY OF CUT SLOPES
North Canyon Expansion

CUT SLOPE	FIGURE NO.	SLOPE GRADIENT	SLOPE HEIGHT (total/permanent)	SLOPE FACE DIRECTION	GEOLOGIC MATERIALS	GEOLOGIC SECTION	GEOLOGIC STABILITY	ADDITIONAL RECOMMENDED GRADING
CS-16	1.1	2:1	110'/0	NW	QTs	---	Favorable bedding; grossly stable	None
CS-17	1.2	2:1	160'/160'	S	QTs, Qt	S22-S22', S27-S27'	Favorable bedding; grossly stable	Construct stability fill slopes above and below entrance to control erosion
CS-18	1.2	2:1	200'/200'	E	QTs, Qls A	S23-S23'	Daylighted bedding; stable by analyses	Qls A to be removed during grading; if needed place engineered fill to restore slope grades
CS-19	1.1	2:1	50'/50'	WSW	QTs	---	Favorable bedding; grossly stable	None
CS-20	1.2	2:1	30'/30'	SE	QTs, Qt	---	Favorable bedding; grossly stable	None
CS-21	1.2	2:1	85'/85'	W	QTs	---	Favorable bedding; grossly stable	None
CS-22	1.2	2:1	100'/100'	SSE	QTs	---	Favorable bedding; grossly stable	None
CS-23	1.1	2:1	85'/0	ENE to E	Tp, QTs	---	Favorable bedding; grossly stable	None
CS-24	1.2	2-1/2:1	235'/60'	E to N	QTs, afs	---	Bedding dipping steeper than slope gradient; grossly stable	Remove "afs" and reconstruct as engineered fill slope
CS-25	1.1	2:1	35'/35'	SE	Tp	---	Bedding dipping steeper than slope gradient; grossly stable	None
CS-26	1.2	2:1	85'/85'	SW	QTs	---	Favorable bedding; grossly stable	None
CS-27	1.2	2:1	75'/75'	SW	QTs	---	Favorable bedding; grossly stable	None

EXPLANATION

GEOLOGIC CONTACT; QUERIED WHERE UNCERTAIN OR INFERRED; DOTTED WHERE CONCEALED
GRADATIONAL GEOLOGIC CONTACT
ANTICLINAL FOLD; APPROXIMATELY LOCATED, QUERIED WHERE UNCERTAIN, DOTTED WHERE CONCEALED
SYNCLINAL FOLD; APPROXIMATELY LOCATED QUERIED WHERE UNCERTAIN, DOTTED WHERE CONCEALED
STRIKE AND DIP OF BEDDING
STRIKE AND DIP OF CONCEALED BEDDING
STRIKE AND DIP OF SLIDE PLANE
STRIKE AND DIP OF JOINT
SILTSTONE BED
SANDSTONE BED
FOSSIL BED
RIDGE-FORMING COQUINA
SURFICIAL FAILURE

af	ARTIFICIAL FILL
afr	ARTIFICIAL FILL, REFUSE - FILLED AND COMPACTED SOLID WASTE
afs	ARTIFICIAL FILL STOCKPILE
cef	CERTIFIED ENGINEERED FILL
Qal	ALLUVIUM
Qd	DEBRIS FLOW
Qls	LANDSLIDE DEBRIS
Qols	OLDER LANDSLIDE DEBRIS
Qoa	OLDER ALLUVIUM
QT	TERRACE DEPOSITS
QTs	SAUGUS FORMATION
Tp	PICO FORMATION

B-2-10	EXPLORATORY BORING
DW-24/PZ-3	GROUNDWATER MONITORING WELL
SW-1	VADOSE ZONE MONITORING WELL
GP-14	VADOSE GAS PROBE
LP-2	VACUUM PRESSURE LYSIMETER
A — A'	GEOLOGIC SECTION LINE
CR	COMPLETE REMOVAL OF Qls
PR	PARTIAL REMOVAL OF Qls
R=8'-12'	RECOMMENDED REMOVAL DEPTH PRIOR TO PLACING FILL

Geotechnical Map

PREPARED FOR
Chiquita Canyon Landfill

Project Location: North and East Canyon Excavation Area
Master Plan Revision
Castaic, California

SCALE	DRAWN BY	CHECKED BY
1"=100'	JH	TPL/TMC
DATE 5-23-2014	Figure 1.1	JOB NO. 2002-036-004

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(Canyon A)
(Canyon D)
(Primary Canyon)
EXISTING LANDFILL GAS TO ENERGY PLANT
PROPOSED ALTERNATIVE 1 FACILITIES LOCATION
PROPOSED ALTERNATIVE 2 FACILITIES LOCATION
EXISTING LANDFILL GAS BLOWER/FLARE STATION
LEACHATE STORAGE/ TREATMENT/ LOADOUT FACILITY
NEW SCALES & GATEHOUSES
NEW ENTRANCE FACILITIES AREA
ADMINISTRATION BLDG.
RETAINING WALL
SCREENING BERM
POTENTIAL BORROW AREA
FUTURE POTENTIAL CONVERSION TECHNOLOGY SET-ASIDE AREA
HENRY MAYO DRIVE
FRANKLIN PARKWAY
WOLCOTT WAY
S22
S22'
S23
S23'
S27
S27'
S28
S28'
See Explanation on Figure 1.1

Geotechnical Map

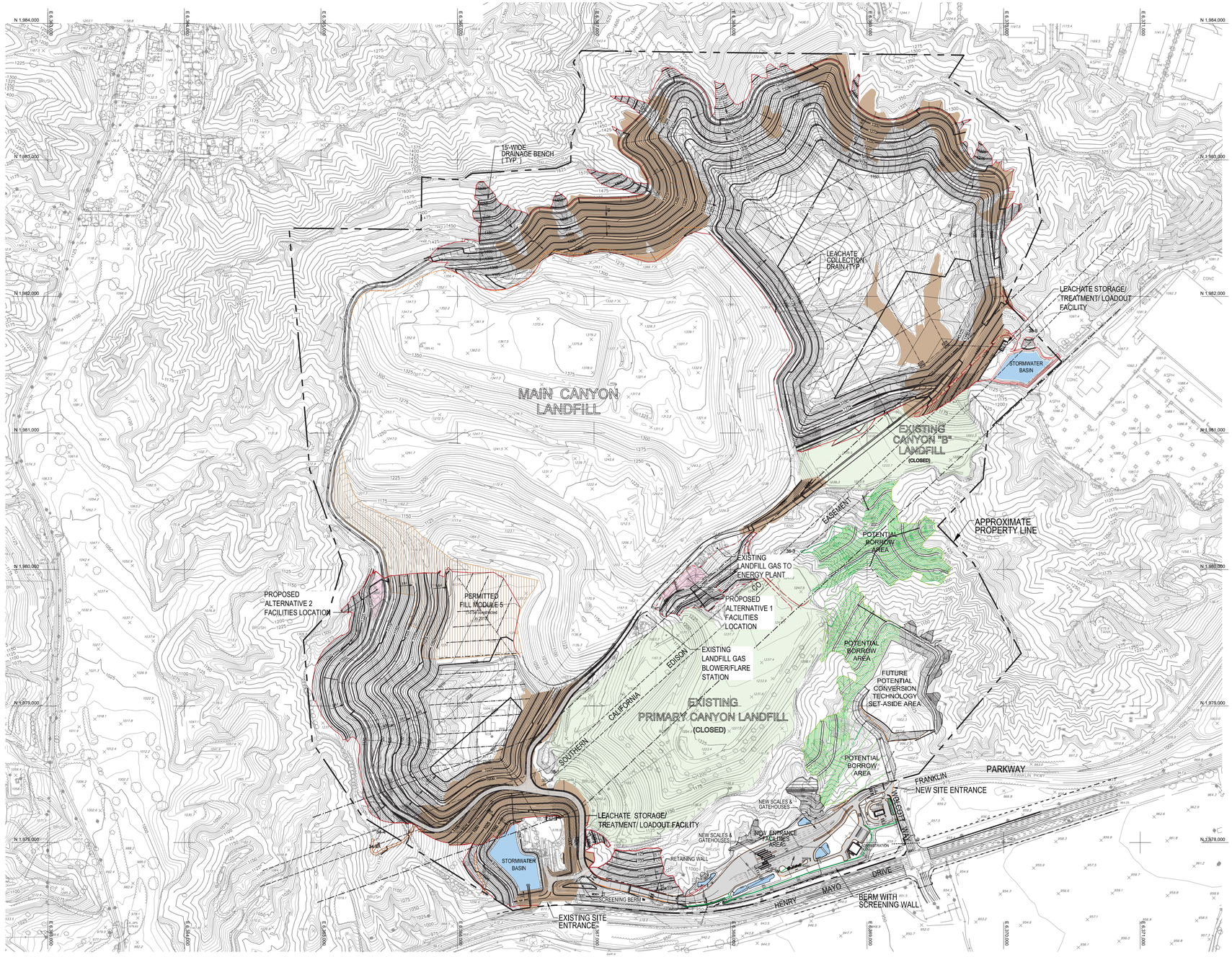
PREPARED FOR
Chiquita Canyon Landfill

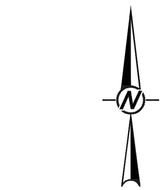
Project Location
South Main Canyon and Entrance Road
Master Plan Revision
Castaic, California

SCALE	DRAWN BY	CHECKED BY
1"=100'	JH	TPL/TMC

DATE		JOB NO.
5-23-2014	Figure 1.2	2002-036-004

1329 SCOTT ROAD
BURBANK, CA, 91504
TEL: (818) 531-1501
FAX: (818) 531-1511
www.rtfrankian.com
RT F&A
GEOTECHNICAL ENGINEERING & ENGINEERING GEOLOGY





0 400 800 1200
FEET

LEGEND

- EXISTING LIMIT OF LANDFILL
- CLOSED PERMITTED LANDFILL AREA
- POTENTIAL BORROW AREA
- EARTHFILL
- ALTERNATIVE EQUIPMENT/MAINTENANCE AREA

NOTES

1. BASE COMPILED BY PHOTOGRAMMETRIC METHODS BY DON READ CORPORATION, BREA, CA. DATE OF PHOTOGRAPHY: OCTOBER 17, 2012

CLIENT
WASTE CONNECTIONS INC.

PROJECT
CHIQUITA CANYON LANDFILL
LOS ANGELES COUNTY, CALIFORNIA

TITLE
PROPOSED PROJECT EXCAVATION PLAN

CONSULTANT
Golder Associates

YYYY-MM-DD	2014-04-30
PREPARED	KLT
DESIGN	SER
REVIEW	RDH
APPROVED	RDH

PROJECT No.
0939747303

Rev.

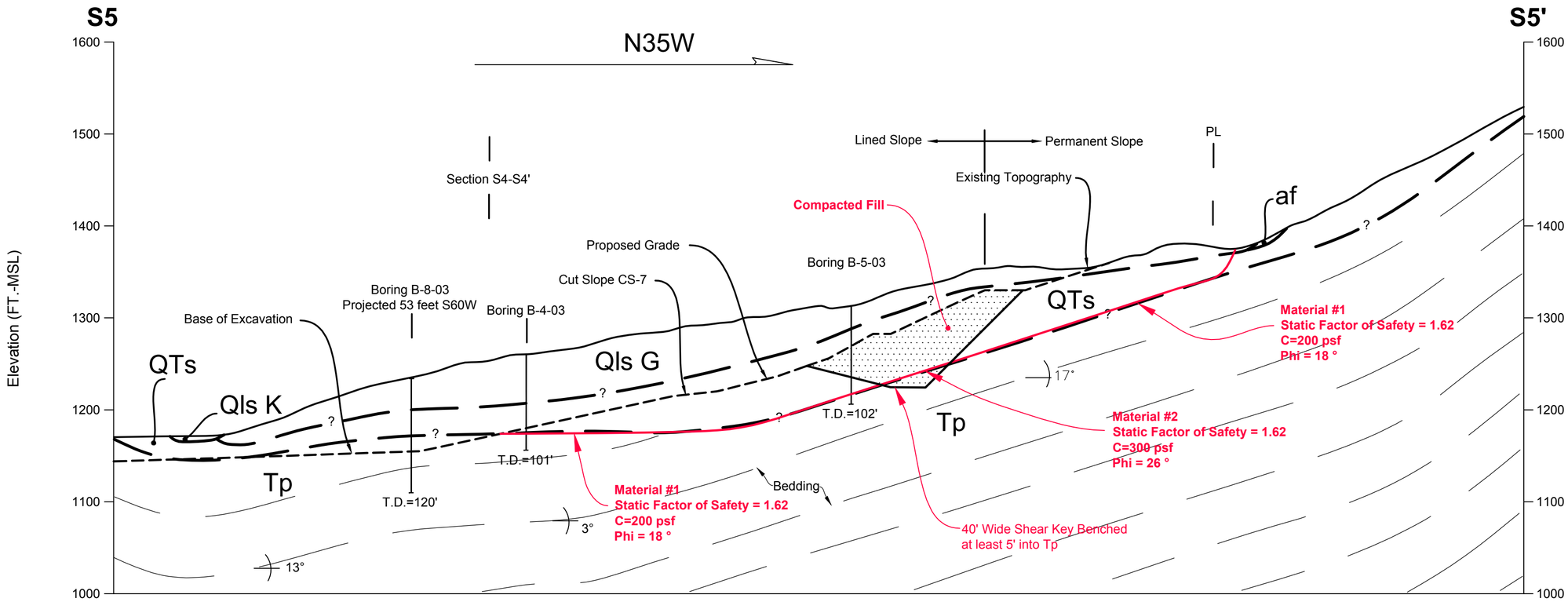
FIGURE
2-3

RTF&A JOB NO. 2002-036-004 REPORT DATED 5-23-2014

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

1 in
0

Path: G:\CADVAULT_CAD\Chiquita Canyon LF\99_PROJECTS\0939747303_ChiquitaCanyon\0101_MasterPlanRev\02_PRODUCTION\DWG\2014_04_29_EntranceUpdate | File Name: Optimized EXC-300_APR_2014.dwg



Geotechnical Section

PREPARED FOR

Chiquita Canyon Landfill

Project Location

Tract No. 53901-01
Valencia, California

SCALE	DRAWN BY	CHECKED BY
1" = 100'	JH	TPL/AWR
DATE		JOB NO.
5-23-2014	Figure 3	2002-036-004

1329 SCOTT ROAD
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Chiquita Canyon Landfill
May 23, 2014
2002-036-004

APPENDIX

STABILITY ANALYSES

GEOTECHNICAL ENGINEERING & ENGINEERING GEOLOGY

Title: Chiquita North Canyon
Comments: 2002-036-004
Name: S5 Static A1.gsz
Date: 3/12/2014Time: 11:33:44 AM
Material #: 1 Wt: 130 C: 350 Phi: 30
Material #: 2 Wt: 130 C: 200 Phi: 18

Method: Spencer
Slip Surface Option: FullySpecified
Horz Seismic Load: 0

36 1.62