Prepared for

Loudon County Solid Waste Disposal Commission
Loudon County, Tennessee

ASSESSMENT REPORT

ROOT CAUSE OF THE 3 NOVEMBER 2010 WASTE SLOPE FAILURE AND REHABILITATION RECOMMENDATIONS

MATLOCK BEND LANDFILL, LOUDON COUNTY, TENNESSEE

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EXECUTIVE SUMMARY

A waste slope failure (failure) occurred on 3 November 2010 in Module G of the Matlock Bend Landfill (MBL), Loudon County, Tennessee. The MBL is a Class I municipal solid waste (MSW) landfill permitted to the Loudon County Solid Waste Disposal Commission (LCSWDC) by the Tennessee Department of Environment and Conservation (TDEC). The active areas within the MBL were designed, constructed, and is currently operated by Santek Environmental, Inc. (Santek) under contract to the LCSWDC. As a result of the failure, TDEC issued a Director's Order (Order) to LCSWDC and Santek. The order identified specific requirements, including the preparation of a root cause assessment report that included both short- and long-term recommendations regarding the stabilization of the MBL. Geosyntec Consultants (Geosyntec) was retained by the LCSWDC to provide an independent third-party investigation of the failure and to prepare this Assessment Report (Report) to comply with the Order.

As part of its assignment, Geosyntec met with Santek and TDEC to review project files, obtain photographs of the site, secure site inspection records, obtain grading and as-built drawings, and operating results. These results allowed Geosyntec to develop a preliminary assessment regarding the cause of the failure, which then led to specific investigation and analysis approaches regarding the cause and extent of the instability. With regards to the root cause assessment, Geosyntec believes that the compilation of the site records support the conclusion that the root cause of the failure was due primarily to increased liquid levels in the landfill that were not being effectively conveyed to the LCS. These liquids are believed to be in part a result of the relatively large amount of sludge that was being placed, mixed, and compacted at the MBL. The sludge-mixed waste was likely wetter and weaker than waste placed in other portions of the landfill and weaker than waste that is typically expected at MSW landfills. Once the waste in the failure area started to creep downhill due to the ongoing waste placement activities, Geosyntec believes that the sludge-rich zones started to "smear" along localized planes. This had the effect of further reducing the ability of vertical percolation of the liquids to the LCS and tended to result is local zones of weakened waste. As more movement occurred the problem was exacerbated, resulting in an accumulation of more liquids and the "enlargement" of the weakened sludge-rich zone. This continued movement likely facilitated the release of the liquids, which contributed

to the "flow slide" on 3 November 2010. Importantly, the failed material slowly flowed downhill over the existing waste and essentially buried the existing toe of the Module G slope and the anchor trench. Geosyntec does not believe that the existing anchor trench or the liner integrity were compromised as a result of the failure, as confirmed by post-failure survey measurements.

Geosyntec identified both short- and long-term rehabilitation strategies for Module G that will help provide TDEC, the LCSWDC, and Santek with a measurable assurance that adequate short- and long-term stability can be achieved in the failure area. Specifically, Geosyntec developed specific short- and long term recommendations regarding the installation of a permanent dewatering trench, the construction of a stability berm beyond the Module G anchor trench to act a stabilizing buttress, the grading of waste within the buttressed Module G, and monitoring of surface movements and liquid levels. Geosyntec has also reviewed a Sludge Management Plan developed by Santek (and included in this Report) that will allow site-specific blending and mixing protocols for the sludge and waste at the MBL. By following these recommendations, Geosyntec believes that the long-term stability of the MBL can be achieved.

Geosyntec prepared this Report to comply with the TDEC Order. Specific schedule and timelines regarding the implementation of these recommended measures are proposed to be developed upon review of this Report by TDEC and approval of specific stabilization strategies. Geosyntec believes that implementation of many of these strategies can be nearly immediate, while others may take a few weeks to fully develop and implement. After meeting with TDEC, Geosyntec will work with LCSWDC and Santek to develop a site-specific implementation strategy and will follow-up on target objectives and deliverables.

Geosyntec consultants

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1.0 INTRODUCTION AND ORGANIZATION

1.1 Terms of Reference

This Assessment Report (Report) was prepared by Geosyntec Consultants (Geosyntec) at the request of the Loudon County Solid Waste Disposal Commission (LCSWDC) to comply with the requirements identified in the 12 January 2011 *Director's Order, Tennessee Department of Environment and Conservation, Case No. SWM10-0009, SNL 53-0203 (Matlock Bend Landfill)* (Order). In the Order, the Tennessee Department of Environment and Conservation (TDEC) made specific demands of the LCSWDC and Santek Environmental, Inc. (Santek). Santek operates the Matlock Bend Landfill (MBL or Landfill) under contract to the LCSWDC. The demands identified in the Order relate to a 3 November 2010 waste slope failure (failure) at the MBL. The Order requires that an independent third party be retained to prepare an assessment report for submittal to TDEC that addresses: (i) the root cause of the failure; (ii) short-term recommendations; and (iii) long-term recommendations.

1.2 Background

As mentioned previously, the MBL is currently operated by Santek under contract to the LCSWDC. In addition to being responsible for operations at the MBL, Santek has been under contract to the LCSWDC for the design, permitting, and construction of the portions of the MBL that are constructed to the modern "Subtitle D" landfill requirements. Since August 1997, the MBL has been permitted as a Class I landfill by TDEC. By permit, the MBL accepts solid waste from residential, commercial, and industrial customers. Dominantly, these customers are from Loudon County, including the City of Loudon and Lenoir City. At the time of the 3 November 2010 failure, waste was being placed into Module G of the MBL. Portions of Module G were first constructed and lined in 2009, commencing in the eastern portion of the permitted cell. Since that time period, most of the incoming waste to the MBL was placed into this portion of Module G. The adjacent western section of Module G was recently lined and was being prepared to accept waste.

Over this two-year operational time period, the incoming waste stream into Module G consisted of approximately 40 percent sludge from industrial clients. Santek has historically managed the sludge component of the incoming waste stream by mixing with the other commercial, industrial, and residential waste streams. In February 2010,

TDEC acknowledged the relatively high amount of incoming sludge and noted several leachate breakouts at the site. Santek responded by repairing the leachate breakouts and made changes to improve operations in Module G, including more aggressive procedures for mixing the sludge and MSW waste. In July 2009, there was a small waste slope failure in Module G and since that time TDEC noted additional leachate breakouts within the area. Santek revised operational procedures and made modifications to the leachate collection system in Module G at that time to address the TDEC concerns and to better manage leachate at the site. On 3 November 2010, a waste slope failure occurred, estimated by Santek and TDEC to involve approximately 100,000 yd^3 of waste . As noted by TDEC, a portion of the head scarp of the slide was located at the approximate location of the July 2010 failure. Additionally, TDEC noted that the toe of the slide was located in areas where leachate breakouts previously occurred. Some of the waste involved in the failure was deposited on an unlined portion of the site.

In response to the failure, Santek took the following immediate actions:

- notified TDEC and LCSWDC on 3 November of the failure and the immediate remedial actions proposed by Santek;
- constructed a berm on 3 November at the toe of the failed area to contain all the waste involved in the failure;
- constructed stormwater diversion berms around the failed area on 3 and 4 November to minimize stormwater run-on into the failed area;
- installed pumps on 4 November within the contained area to pump collected liquids to pipes in the leachate collection system;
- completed excavation activities on 11 November to investigate the potential impacts to the anchor trench and liner system within Module G; and
- initiated efforts to safely regrade the waste (including the highwall at the head scarp) and place soil cover over the exposed waste.

Santek addressed each of these tasks aggressively and the last of the rehabilitation activities (i.e., soil cover over exposed waste) was completed by approximately 20

November. Since that time, Santek has worked in collaboration with TDEC, LCSWDC, and Geosyntec to: (i) assist in assessing the cause of the failure; (ii) implement short-term excavation activities to control and manage leachate; (iii) maintain the integrity of the soil cover that was placed in the failed area; and (iv) install and survey surface monitoring points used to assess areas of ongoing slope movements.

Geosyntec visited the site on 9 November 2010 and met with representatives of Santek and with Mr. Steve Field of the LCSWDC. Geosyntec met with the entire LCSWDC on the evening of 9 November 2010 at its regularly scheduled monthly meeting. In an 18 November 2010 letter to Geosyntec, the LCSWDC reported that TDEC requested that an independent investigation of the failure be performed and that the assessment encompass and address the following five points: (i) root cause investigation and assessment of the MSW slope failure; (ii) subsequent plan on how to fix and stabilize the cell; (iii) information about operational/design elements or waste handling practice changes; (iv) confirmation of liner integrity and functionality of the leachate collection system within the affected area; and (v) an interim report for delivery to TDEC. Geosyntec met with the LCSWDC on 23 November 2010 to make a presentation titled *Preliminary Assessment, Landfill Slope Failure, Matlock Bend Landfill, Loudon County, Tennessee*. Since this meeting, Geosyntec has had numerous contacts with TDEC and with Santek. As requested by TDEC, Geosyntec prepared and submitted a 4 January 2011 report titled *Interim Status Report, Slope Failure at the Matlock Bend Landfill* (Interim Status Report). Geosyntec augmented the Interim Status Report and prepared this current Report to meet the requirements identified in TDEC's Order, and is specifically intended to: (i) assess the root cause of the failure; (ii) identify short-term recommendations; and (iii) provide long-term recommendations.

1.3 Report Organization

Following this introductory section, the remainder of this Report is organized to provide the information required by TDEC in the Order. Specifically, the remaining sections are organized as follows.

- Section 2 - Initial Compilation of Information and Preliminary Assessment: This section presents a compilation of information from Santek's operating records that may facilitate assessing the cause of the failure, including

construction records, operational records, TDEC inspection reports, and several post-failure observations.

- Section 3 - Assessment of Root Cause: Building on information from Section 2, this section presents the results of slope stability analyses and the results of a slope monitoring program that were instituted after the failure. These results were used to develop and support an assessment of the root cause of the failure.

- Section 4 - Short-term Recommendations: With a knowledge of the likely cause of failure, it was possible to identify activities that could be implemented by Santek in the short-term to improve stability in the failure area, while supplemental long-term stabilization alternatives could be developed and assessed. Section 4 was prepared to identify these short-term rehabilitation activities.

- Section 5 – Long-term Recommendations: This section identifies specific long-term rehabilitation measures that could be implemented to improve the long-term stabilization of the area and to minimize the likelihood of another slope failure. Both design and operational recommendations are identified.

- Section 6 – Summary and Conclusions: This final section provides a brief summary of the project and concluding comments regarding the failure and the stabilization measures that have either occurred or that are proposed.

Appendices to this Report present several of the documents referenced in the text of the Report and include the following:

- Appendix A: Waste Receipt Records;

- Appendix B: TDEC Site Inspection Reports;

- Appendix C: Anchor Trench Survey Results;

- Appendix D: Leachate Generation and Precipitation Records;

- Appendix E: Slope Monitoring Point Records;

- Appendix F: Slope Stability Calculation Results; and

- Appendix G: *Proposed Sludge Management Procedures for the Matlock Bend Landfill* (after Santek, 2011).

2.0 COMPILATION OF INFORMATION AND PRELIMINARY ASSESSMENT

2.1 History of Activities in the Area

As part of the background investigation, Geosyntec obtained records from Santek and other sources regarding the development of Module G, waste characterization and acceptance since 2009, recent seismic activity, and any noted pre-failure observations that may be relevant to this assessment. A summary of the compiled information follows.

Development of Module G: As mentioned previously, the MBL was permitted in August 1997 to operate as a Class I landfill by TDEC. However, Module G was not constructed until 2009, and even then only a portion of Module G was lined to accept waste. A plan view of the site, showing the delineation of the modules is presented in Figure 1. This figure also delineates the approximate boundaries of the failure area. Figure 2 presents an enlarged plan view to show the waste slope failure area. A section line (i.e., Section 2+00) is also delineated on this figure. Figure 3 provides a cross-section along Section 2+00. This figure also shows: (i) liner base grades in Modules B and G along the section line; (ii) waste grades from the 29 September 2009 annual aerial survey; (iii) grades from a 1 October 2010 annual aerial survey; (iv) post-failure location of the initial containment/stabilization berm and the approximate post-failure topography; and (v) post-failure surface topography from the 27 November 2010 aerial survey. It is noted that the post-failure aerial topography was obtained after construction of the initial containment/stabilization berm and after much of the immediate-action remedial grading was initiated. Furthermore, it is noted that the pre-failure (i.e., working) interim slopes within Module G were being constructed at approximately a 4.5 horizontal to 1 vertical (4.5H:1V) slope or flatter. This slope is significantly flatter than the approximately 3H:1V slopes observed elsewhere at the site.

Waste Characterization and Acceptance Since 2009: Santek provided information to Geosyntec regarding the types and amounts of waste received at the MBL since 2009. This information is provided in Appendix A. It appears that over the approximately two-year time period that waste was placed into Module G, that the ratio of "MSW and Other Special Waste" to "Sludge" is approximately 60/40. Santek reported that upon receipt at the MBL, the sludge waste was mixed in-place with MSW and other special

waste before it was placed and compacted. Santek reported that at times, the frequency of sludge receipts would exceed those of MSW. During these time periods, Santek reported that it was often difficult to have sufficient quantities of materials to mix with the sludge, although they would eventually get the materials mixed so that they could be adequately compacted. The relatively flat interim slopes previously referenced likely relate to operational practices that were implemented in consideration of the high sludge content of the incoming waste.

Potential Seismic Activity: The Eastern Tennessee Seismic Zone (ETSZ) is known to produce small but measureable earthquakes in the Knoxville, TN area. It is acknowledged that local earthquakes could serve as a "trigger" for slope instability. Geosyntec reviewed several local and national websites that report local seismic activity, including http://www.ceri.memphis.edu/index.shtml and did not find any reports of seismic activity in the area prior to the failure.

Pre-failure Observations: In discussions with Santek on-site personnel, it was reported that they had had problems with leachate breakouts for several months before the failure. This information is consistent with information presented in the TDEC Inspection Reports (to be discussed subsequently). Santek also reported that they had observed some small cracking of the ground surface that they would have to track in periodically to re-seal the surface. Importantly, Santek reported that on the day before the failure (i.e., 2 November 2010), they had observed some significant local bulging and leachate breakouts at the "bench" located at approximate elevation 955 (see Figure 3), despite the relatively flat 4.5H:1V interim slopes. Attempts were made to locally regrade this waste during the day, but it was noted as being relatively wet and difficult to compact. The failure occurred in the area of the local bulge and leachate breakout early the following morning (i.e., 3 November 2010).

2.2 Correspondence from TDEC

Santek provided to Geosyntec copies of the TDEC inspection reports for the MBL for the time period of 7 January 2008 through 3 November 2010. These reports are attached in Appendix B. These records indicate that leachate breakouts were noticed on several different inspection visits, but also that Santek had taken steps to address the problems each time the breakouts occurred. TDEC also acknowledged the relatively

high percentages of sludge and that mixing was being achieved, but that the mixing was difficult.

2.3 Leachate Collection System Rehabilitation

Santek provided Geosyntec with a copy of the September 2010 report prepared by Atlantic Coast Consulting, Inc. (ACC) titled *Final Certification Report, Construction Quality Assurance Services, Matlock Bend Landfill, Module G Leachate Drainage Modification, Loudon County, Tennessee* (CQA Report). This report identifies the modifications that were made to the leachate collection system (LCS) in the lower reaches of Module G, near the Module G/B intersection. ACC monitored the repairs to the LCS and confirmed that the LCS was performing properly at the end of the modification. TDEC was provided a copy of this CQA Report on 30 September 2010, so it is not included in this Report.

2.4 Photographs and Post-slide Observations

Santek and TDEC provided CDs that contained photographs of the site at and around the time of the failure. Most of the photographs are dated to show when the photo was obtained. As TDEC has photographic documentation of the failure and access to the Santek photographs, the photographs were not reproduced as part of this Report. CDs of the photographs (or reprinted hardcopies) will be provided upon request. These photographs document the overall shape of the failure mass and the consistency of the waste. The following significant observations are noted on Geosyntec's initial site visit on 9 November 2010:

- The slope of the surface of the waste within the failure area was very flat. It was difficult to measure the slop, but in general, it appeared to be on the order of five degrees.

- There were pockets of standing leachate within the failed waste mass and the waste at the toe of the failed area was noticeably wet.

- Concentrated zones of sludge could be observed near the bottom of the excavated waste mass, but in general the waste appeared to reasonably well homogenized in the failure area.

- Waste at the toe of the failed area was being excavated and relocated to other recently lined areas on the northern side of Module G. The excavated waste slope at the toe of the failed area was temporarily cut to a relatively steep 2 horizontal to 1 vertical (2H:1V) slope. This excavated slope generally appeared to be relatively stable, in that it did not give the appearance of actively moving.

2.5 Investigation of Anchor Trench

One of the initial significant concerns regarding the failure was whether the liner system in Module G had been impacted as a result of the failure. Santek worked aggressively to assess the location and condition of the anchor trench. After the failure, Santek worked to relocate the waste that had been deposited off of the lined area to the newly lined northern side of Module G. As the excavation approached the location of the Module G anchor trench, the alignment of the as-built location of the anchor trench was flagged and operators were careful in excavating waste from this area. The operators were able to carefully excavate the waste and "daylight" the anchor trench on 11 November 2010. The current alignment of the anchor trench was located by field survey. Santek plotted these survey locations on the previously surveyed as-built alignment of the Module G anchor trench. Review of these results indicates that the Module G anchor trench is in the same location as when it was originally constructed. The Santek comparison survey results are presented in Appendix C. These data confirm that the failure did not adversely impact the anchor trench. Geosyntec interprets the fact that the anchor trench was not impacted as direct evidence that there is similarly no adverse impact to the liner system.

2.6 Assessment of Leachate Generation Rate

Geosyntec requested that Santek provide records regarding the leachate generation rates over the recent past. Leachate generation and precipitation records from the MBL dating from January 2008 through October 2010 were provided. A summary of these records and related time trend plots are provided in Appendix D. Review of this information provides the following observations:

- There is a strong correlation between the incremental precipitation and leachate generation. In other words, for months when there is a significant amount of rain, there is a similar significant amount of leachate generated.

- The cumulative time trend plot indicates that the leachate generation quantity increases at a slightly reduced rate compared to the precipitation. This trend is to be expected as the thickness of waste increases.

- There does not seem to be any marked reduction in the leachate generation trend that would be indicative that the LCS is not functioning.

2.7 Preliminary Assessment

In consideration of the information presented in this section, Geosyntec previously indicated to TDEC in the Interim Status Report that: (i) the waste slope failure was likely caused by the coupled effects of infiltrating precipitation and high percentages of sludge, resulting in a flow slide; and (ii) the waste slope failure did not adversely impact the liner or the operation of the LCS. The more thorough review of information identified in this section does not change this preliminary assessment. In fact, as will be seen in the following section, Geosyntec believes that the preliminary assessment is completely consistent with the data that have been collected and provided to date. Furthermore, the combination of liquids and sludge will be shown to be important contributors to the root cause assessment.

3.0 ASSESSMENT OF ROOT CAUSE

3.1 Initial Slope Stability Analyses

Initial slope stability analyses were performed that considered the pre-failure slope geometry within Module G, as well as the post-failure geometry of the slide mass. The focus of these initial analyses was to assess the relative sensitivity of the calculated factor of safety (FS) to assumed waste properties of unfailed waste and the waste within the failure area. These analyses also assessed the relative impact of the assumed level of liquids (i.e., water/leachate) in the waste. The initial results indicate the following significant observations regarding the likely failure mechanism and the role of liquids on the failure:

- *Likely Failure Mechanism*: The initial slope stability analysis results indicate that the most likely potential failure surface is not the result of a deep-seated failure mechanism that would impact the liner and anchor trench. Rather, calculation results indicate that the most critical potential failure surface likely exists approximately 20 to 25 feet above the elevation of the anchor trench. The significance of these results is that the toe of the pre-slide waste slope in Module G may not have been impacted by the waste slope failure. Rather, these results indicate that failure mass may have simply slid over the top of this waste slope, essentially burying the existing waste slope and the anchor trench in the process of sliding off of the lined area. These initial observations are consistent with the previously reported findings that the anchor trench was not impacted by the failure.

- *Role of Liquids*: Liquids in the waste include precipitation and moisture that might be released from the sludge upon compaction. Regardless of the source of the liquids, they have the ability to adversely impact slope performance in that they reduce the effective stresses in the waste and can potentially reduce the waste strength. As noted previously, leachate breakouts were a persistent problem in Module G and the post-failure observations included wet waste and pockets of essentially "free liquids" that were not being effectively conveyed to the LCS. The slope stability calculation results considered relatively high levels of liquid in the waste. Two important observations regarding these liquids are noted: (i) the resulting approximately five percent slope of the post-failure

surface of the waste in the failure area is indicative of a "flow type" slide that is driven by the release of liquid and not an inherently "low strength" material; and (ii) the resulting relatively steep post-slide excavated slope at the toe of the failed area indicates that these liquids have now (at least temporarily) drained, thus allowing the strength of waste to effectively buttress the upper reaches of the failure area.

The subsequently reported slope monitoring program and initial dewatering trenches were specifically planned to confirm these calculation results, which form the initial basis for the root cause assessment of failure. All slope stability calculation results (including these initial results) are referenced subsequently and provided in appendices.

3.2 Slope Monitoring System

Shortly after the failure, the entire failure area was regraded, including the waste highwall that formed the head scarp of the slide. Soil cover was then placed to help control leachate and to minimize problems related to odors and vectors. To help identify the limits of the failed area and to observe the potential for ongoing movements in the underlying waste, a surface slope monitoring program was developed by Geosyntec. The locations of surface monitoring points were provided to Santek, at which point they were installed and monitored by the independent site surveyor. Results were provided to Santek who compiled the readings and provided the survey results to Geosyntec for assessment. The locations of the survey points are shown in Figure 4. The survey records are tabulated and time history presentations of the individual and group survey points are presented in Appendix E. These results confirm the lateral limits of the failure and are generally consistent with the previously identified failure mechanism, which concluded that the flow slide occurred above the elevation of the anchor trench. The waste in the lower reaches of the failed area show little indication of ongoing movement or creep. While most of the surface monuments show very little indication of ongoing creep movement, the surface monuments located in the center of the slide area indicate relatively small, but measureable, amounts of downhill creep. These survey results have been monitored carefully and the slopes in the vicinity of these monuments have not shown any indication of another impending waste slope failure. The pattern of the ongoing slope movements were used to help assess the root cause of failure.

3.3 Excavation of Water Control Trenches

The investigation of the potential failure mechanism using a conventional geotechnical drill rig and/or gas well rig was considered, but was somewhat complicated by the soft character of the ground surface caused by the amount of liquids in the waste. This would likely limit the size of equipment that could be mobilized to conduct the investigation. In addition, the quantity of liquids in the waste was anticipated to impact the stability of the borehole/trench used to facilitate a deep investigation through the failure area. An alternative exploration program was developed that capitalized on the geometry of the potential failure zone. Specifically, slope stability analysis results previously referenced indicated a relatively shallow flow-type failure mechanism. Utilizing this geometry, two trenches were located in the central portion of the failure area where the depth from the current regraded ground surface to the bottom of the failure surface was estimated to be less than ten feet. It was anticipated that the waste in this 10-ft thick zone would be very wet and likely have some free liquids, as the bottom of the sliding surface may currently consist of "smeared" sludge and waste that would impede the vertical flow of liquids to the LCS. To help control the liquids within the waste mass and to investigate the potential failure mechanism, Santek excavated a northeast-southwest trending trench through the waste during the week of 20 December. The trench was backfilled using limestone wrapped in a geotextile separator to facilitate drainage and gas vents were installed and extended to the ground surface at several locations. A second exploratory trench was advanced on 5 January 2011. TDEC was onsite to meet with Santek and Geosyntec and to witness part of the excavation. Upon completion, this trench was backfilled using a geotextile-wrapped limestone and a few gas vents were again installed. The location of the two trenches is shown on Figure 5. Based on first-hand observations during the excavation of the second trench, Geosyntec made the following observations:

- Commencing from the western side of the failed area, the trench was easily excavated and the waste was relatively dry. As the trench proceeded to the east, the waste became wetter and the depth of the wet waste increased. Free liquids were observed to flow into the trench, which impeded the placement of the geotextile and limestone.

- Despite the difficulty in rock placement, free liquids were observed to flow from the exposed end of the geotextile-wrapped limestone. There were noticeable

zones of sludge near the bottom of the trench and the liquids seemed to be flowing into the trench on top of the sludge layer in many locations. In some cases the sludge was soft and thick enough to be "extruded" into the trench.

- The large amount of free liquids and the soft waste limited the depth of the excavation. It was anticipated that this trench could be advanced to a sufficient depth to "breech" the failure surface and facilitate the vertical conveyance of some of the free liquids into the LCS. Rather, it seems that the trench will serve a function to allow lateral transmission of the liquids in the rock and the subsequent conveyance of the liquids to the leachate collection sump.

3.4 Final Slope Stability Calculation Results

The initial slope stability calculation results referenced previously provided significant insight into the potential failure mechanism. The subsequent slope monitoring results and the observations from the dewatering trench excavation tended to confirm the hypotheses from the original slope stability assessment. A comprehensive evaluation of the global slope stability within Module G was performed as part of this Report. Results are presented in Appendix F and summarized as follows:

- Analyses were performed along Section 2+00, which was aligned along the long (i.e., northwest-southeast trending) axis of the failure area. The analysis cross-section included the constructed liner grades and anchor trench, as well as the waste grades from the 2009 and 2010 aerials. It was possible to develop an analysis cross-section in the area immediately prior to 3 November 2010 slide.

- Calculation were performed to assess sensitivity to liquid levels, location and orientation of weak interface, and waste/sludge strength. Results indicate that the most likely failure surface coincides with a relatively shallow failure surface within the waste mass and that the resulting calculated FS is very sensitive to liquid levels within the waste.

- It appears that the most likely failure surface would have daylighted at the crest of the small bench at approximate elevation 955. However, as there was an approximately 4.5H:1V existing slope below this bench, the waste tended to flow over this crest towards to northwest until it could develop a self-supporting toe that would buttress the remainder of the waste in the failed area.

- As the failure was likely caused by an increase in liquid level, the failure likely dissipated much of these liquids, resulting in a short-term increase in strength of the waste mass (at least until the liquid levels build up once again.

Geosyntec notes that the very flat post-failure grades in the waste support the opinion that this was dominantly a flow failure, indicating that liquids accumulating in this portion of Module G were not effectively being conveyed to the LCS. It s likely that the base of the flow slide involved zones of sludge that are now "smeared" along the failure surface, thus further restricting the vertical percolation of liquids into the LCS.

With a knowledge of the causal mechanism, the approximate location of liquids, and the condition of the waste in the failure area, it was possible to perform slope stability analyses to assess potential rehabilitation strategies. These results are also presented in Appendix F. These results indicate that a stable slope within the failure area can be achieved if the liquid levels are effectively controlled and if an intact buttress is constructed at the toe of the failure area. Subsequent short- and long-term recommendations for rehabilitation present alternative strategies for providing adequate stability in this area, as well as contingency strategies should additional problems be encountered.

3.5 Assessment of Root Cause of Failure

The observations made by TDEC prior to the failure, the local stability problem encountered on 2 November 2010, and the results of the post-failure observations and analyses all support an understanding of the root cause of the 3 November 2010 failure of the MBL. The root cause assessment includes the following:

- The root cause of the failure was due primarily to increased liquid levels in the Landfill that were not being effectively conveyed to the LCS. It is anticipated that these liquids were in part a result of the large amount of sludge that was being placed, mixed, and compacted at the MBL.

- The sludge-mixed waste was likely wetter and weaker than waste placed in other portions of the landfill and weaker than waste that is typically expected at MSW landfills. This provides a likely explanation of the flatter-than-expected working slopes in Module G, as well as a reason why the "conventional"

techniques for managing liquids and leachate breakouts were not as effective as anticipated in the months prior to the failure.

- Once the waste in the failure area started to creep downhill due to the ongoing waste placement activities, it is likely that the sludge-rich zones started to "smear" along localized planes. This had the effect of further reducing the ability of the liquids to vertically percolate into the LCS and tended to result in local zones of weakened waste. As more movement occurred the problem was exacerbated, resulting in an accumulation of more liquids and the "enlargement" of the weakened sludge-rich zone.

- This continued movement likely facilitated the release of the liquids, which contributed to the "flow slide" on 3 November 2010. As the material slowly flowed downhill over the elevation 955 crest, the high liquid levels in the upper reaches of Module G tended to dissipate, which then contributed to a short-term increase in strength. The liquids tended to migrate downhill and accumulated in the failed waste mass. Because the resulting flow surface was so flat, it only required a small buttressing resistance to temporarily increase the stability of the failure waste. The dissipation of the liquid levels in the failed waste also explains why the sludge-rich waste is currently "stable" and able to stand on much steeper (i.e., 2.5H:1V) slopes at the toe of the failure area.

Geosyntec believes that the observations and data that have been compiled are completely consistent with this assessment of the root cause. Importantly, this root cause also provides significant insight regarding the potential rehabilitation strategies for Module G that will help provide TDEC, the LCSWDC, and Santek with a measurable assurance that adequate short- and long-term stability can be achieved in the failure area

4. SHORT-TERM RECOMMENDATIONS

4.1 Excavation of Permanent Dewatering Trench

As summarized in the previous section, the accumulation of liquids is believed to be at the heart of the failure. Therefore, the effective control of these liquids is believed to be a major component of the solution. One part of the solution is to minimize the accumulation of the liquids, which can be achieved by stormwater run-on control and the effective use of interim cover, tarps, etc. These are largely operational factors under the direct control of Santek. A complementary concept to minimizing the future migration of liquids into the module regards dewatering the existing waste. To effectively dewater the waste in Module G, two potential solutions are recommended.

- *Permanent Dewatering Trench*: The installation of the two temporary trenches in Module G facilitated the conveyance of liquid from the failure area to the leachate collection sump. To provide even better control of liquids, it is recommended that a permanent dewatering trench be installed between the two previously installed trenches. This trench would be wider and deeper, specifically deep enough to extend below the failure surface and allow liquids within Module G to be conveyed to the LCS. Effectively, this dewatering trench would serve as a passive drain for the accumulated liquids in the failure area. The operation of the trench would require no maintenance once installed. The trench would be constructed to breach the failure surface and replace the excavated waste with a geotextile-wrapped, free-draining rock. The trench would be excavated across the entire width of the failure area.

- *Vertical Gas Wells*: An alternative solution for conveying liquids to the LCS is to use large-diameter gas wells to breach the failure surface. This technique is expected to be successful, but the number of wells is at present not known. Furthermore, because these wells will "attract" liquids, they would likely have to be developed as dual (i.e., liquid and gas) extraction wells. This implies that as the area is filled, the wells will need to remain "active" and have to be extended vertically as additional waste is placed in Module G.

One of the biggest advantages of either of these techniques is that piezometers, observation wells, observation trenches, etc. can be used to verify that liquids are being effectively managed and controlled. Geosyntec recommends that some form of liquid-

level observation be included with either of these selected alternatives. Over time, it is anticipated that the liquid levels will reduce in the failure area. If they do not, than additional actions will need to be taken to assure that liquid control measures are functional.

4.2 Stabilization Options

Liquid level control is perhaps the most important stabilization option, as this effectively "stabilizes" the waste. Short of removing all of the waste within the failure area (an option not favored by Geosyntec), there are other options that should be considered. The best of these options is the use of a stability berm at the toe of Module G. The stability berm serves the following two important functions:

- *Toe Buttress*: A stability berm at the toe of Module G effectively provides a buttress at the toe of the failure area. This buttress can be constructed of either soil or waste to achieve a strong "block" at the toe of the slide. Subsequent potential failure surfaces (should they develop) would have to shear through this buttress before another waste slope failure could occur. Recall that one of the immediate actions after the failure was the rapid construction of a toe buttress at the toe of the failed waste to help contain the waste. Calculation results regarding slope stability confirm that the toe buttress is effective at improving the short- and long-term stability without excavating additional waste in the failure area (see Appendix F).

- *Flat Waste Slopes over the Failure Area*: One of the benefits of the toe buttress, is that it then allows waste to be placed against the buttress and over the existing waste in the failure area, effectively reducing the slope of the waste surface while increasing the vertical stress. These two factors work to increase stability. With comparison to a non-buttressed slope, the flatter slope effectively reduces the driving forces, while the additional mass increases the vertical stress, which increases the shear strength of the frictional waste materials. This increased vertical stress also tends to consolidate the waste, thus reducing the moisture content of the waste. This beneficial effect is realized throughout the waste column, including across the zone that was smeared during the failure.

4.3 Stabilization Berm Considerations

For the rehabilitation of Module G, several stabilization berm options were considered. Stability analyses were performed to assess the impact of the strength of the berm, the height of the berm, and the location of the berm. The primary options that were considered as primary options include: (i) waste berm within Module G; (ii) soil berm outside of the limits of Module G; and (iii) waste berm outside of the limits of Module G. Each of these options has distinct advantages and disadvantages from the perspective of construction, airspace utilization, and permitting, as will be discussed briefly.

- *Waste Berm within Module G*: The advantage of this option is that no airspace would be lost and that construction could proceed quickly within an existing permitted area. Additionally, since well-compacted waste can be stronger than soil, the benefits of the stronger waste can be realized. The primary disadvantage of this option is that construction would be occurring directly adjacent to the toe of the excavated failed waste, which complicates construction and requires a larger berm for a given increase in stability compared to the option where a berm is constructed outside of the limits of the existing cell.

- *Soil Berm outside the Limits of Module G*: This option has the advantage of requiring a lower height for a given increase in the calculated FS, compared to an in-cell option. This also has the advantage of being able to be implemented quickly and without the need for additional permitting. The disadvantages of this option include the loss of airspace and the need to line the inside edge of the berm and provide leachate collection at the base of the inside edge of the berm.

- *Waste Berm outside the Limits of Module G*: This option includes the advantages of the soil berm option and has an added advantage that it would be possible to utilize higher strengths if a select waste (i.e., non-sludge) is used to construct the berm. The problem regarding lining of the inside face of the berm is eliminated and replaced by the need to install/extend a liner at the base of the failure area to facilitate leachate collection. Because the construction of the waste berm is beyond the limits of Module G, it will be possible to locally remove waste from Module G to inspect the integrity of the LCS in Module G. Because the LCS will require modification to implement this alternative, it will

be convenient (and necessary) to make this inspection and assessment. As the areas outside of Module G (i.e., Modules H and I) are currently permitted, but as yet unlined, a permit modification to allow installation of the base liner in a small section of existing Module H is required.

Geosyntec believes that the option of a waste berm outside of the limits of Module G represents the best short- and long-term solution regarding stabilization of Module G. Stability calculations indicate that an approximately 30-ft high waste berm provides a sufficient buttress. Additionally, these results indicate that 4H:1V waste slopes that are tied into the buttress and which include 10-ft wide benches at 30-ft vertical intervals can provide an acceptable long-term calculated FS for Module G. This recommendation is predicated with the acknowledgment that a permit modification is necessary and that well-compacted, MSW that does not contain sludge is available for construction of the berm. Geosyntec understands that Santek has submitted a Minor Permit Modification Application to TDEC to accommodate this recommendation, recognizing that the alignment and labeling of Modules H and I are included in this application. .

4.4 Investigation and Rehabilitation of Leachate Collection System

As previously noted, a review of the records from the LCS at the MBL indicate that the historical and recent pre-slide leachate generation rates are completely consistent with the rates anticipated for a landfill in a similar stage of operation. Leachate generation is strongly consistent with precipitation events. Therefore, there is not an indication of a "wholesale failure" of the LCS. Nevertheless, the root cause premise indicates that locally, the liquids within Module G are not being effectively conveyed to the LCS within Module G. Based on observations from the site, Geosyntec believes that this is due to the adverse impacts of the sludge within the module and not to a failure of the LCS. The recommended construction of the dewatering trenches and the monitoring of liquid levels in the landfill are anticipated to provide verification of the role of the sludge in affecting liquids management. Geosyntec acknowledges that the LCS design for the MBL includes a "cascading" series of leachate collection pies and trenches. There is little redundancy in the current LCS at the facility. Furthermore, Geosyntec recognizes that the LCS for Module G was recently modified to improve performance. The root cause assessment indicates that the liner was not adversely impacted, but Geosyntec recognizes that the leachate collection piping network may have been impacted by the waste that flowed over the top of riser pipes. Therefore, Geosyntec

recommends that waste at the base of Module G be excavated to allow inspection and confirmation of the integrity of the LCS. This activity would be conducted once a final decision regarding the stability berm is made by TDEC, so that the leachate system modification required by the toe buttress construction can be made at the completion of the inspection. The inspection will focus of the integrity of the LCS pipes, the amount of gravel around the pipes, and the confirmation of liquid conveyance in the LCS at the inspection location. The failure to physically observe leachate flowing on the LCS would necessitate further investigation of the LCS. It is imperative to the long-term stabilization that the LCS in Module G is confirmed to be fully functional.

4.5 Grading and Interim Cover

Currently, soil cover has been placed in the failed area to help minimize odor and vector impacts. As part of these short-term rehabilitation measures, it will be necessary to excavate waste and to then place waste into the buttressed cell. The stability calculations specifically considered grades of 4H:1V with 10-ft wide benches incorporated at 30-ft high vertical intervals. In addition, to provide somewhat of a redundant increase in stability, Geosyntec has recommended that sludge not be mixed with waste within the outer 50 feet of a landfill permanent slope and that newly placed waste be "keyed" into existing waste. Additional discussion regarding these recommendations is presented in the section regarding the Sludge Management Plan and long-term grading recommendations.

4.6 Monitoring System

As discussed previously, a series of surface monuments have been monitored regularly since the failure. It is recommended that a similar slope monitoring system be developed as part of the rehabilitation measures. The details of this system will be finalized when the findings, results, and recommendations presented in this Report are discussed with TDEC, as it is anticipated that TDEC may have specific requirements after its review of this Report. The concept of the slope monitoring system will be to install monuments in strategic areas that will not be adversely impacted by waste placement operations. This will likely mean that some points will be installed to monitor performance in advance of waste placement to confirm the impacts of these stabilization efforts and then new survey monuments established after waste placement to continue the stabilization monitoring activities. Survey monuments will also be

installed on the stability berm itself. The frequency of the readings will be established depending on the location and the time-history of movements in specific areas, but will likely include at least one reading for each two-week time period. In addition to the slope monitoring program, liquid levels will also be monitored, as previously discussed. These results will be incorporated into the final stabilization and performance monitoring program.

5. LONG-TERM RECOMMENDATIONS

5.1 Sludge Management Plan

As described in the root cause assessment, liquids appear to have had the biggest impact on the stability of Module G. The fact that these liquids also occurred in a module that accepted large amounts of sludge was viewed to also represent a major factor in the instability. Measures were previously identified to control the liquids. To help control (and minimize) the potential adverse impacts of sludge that is received at the MBL, Geosyntec recommended that Santek develop a site-specific and waste-specific sludge management plan for the MBL. Santek has prepared a document titled *Proposed Sludge Management Procedures for the Matlock Bend Landfill* (Sludge Management Plan). This document is provided in Appendix G. Geosyntec has reviewed this document and believes that the proposed approach is appropriate for the management of sludge at the MBL. The Sludge Management Plan includes specific measures for quantifying the amount of sludge that will be placed in the landfill and requires that waste-specific mixing protocols be developed. At this stage, it is premature to identify specific procedures, however, upon approval by TDEC of the identified strategy, Geosyntec will work with Santek to develop the recommended sludge mixing and placement protocols. The Sludge Management Plan also identifies the 50-ft wide offset distance from the outer permanent slopes for sludge placement, as this is anticipated to minimize the impacts of leachate breakouts and future instability.

5.2 Staging of Waste and Sludge Placement

The slope stability calculation package included in Appendix F provides results for the stability berm and the interim waste slopes that are used to improve the stability of Module G. The Sludge Management Plan in Appendix G describes specific recommendations for mixing and staging waste placement. As these topics were previously described, they will not be repeated herein. Suffice to say that if these guidelines are followed, Geosyntec believes that long-term stability is provided and that the likelihood of additional stability problems at the MBL is minimized.

5.3 Stabilization Berm Requirements

Options for the stability berm have been identified in Section 4. It is anticipated that TDEC will provide approval of at least one of these options. Construction requirements

will be identified prior to implementation. Specific points that will be addressed include the selection of materials for the berm and compaction requirements for the construction materials. As described previously, Geosyntec believes that a well-compacted, 30-ft high stabilization berm comprising sludge-free MSW is the best option considering the relative advantages and disadvantages of the various options. This option was selected to provide what is believed to be the optimal short- and long-term options regarding slope stability.

5.4 Stormwater Run-on Control

As stormwater management is of paramount importance at any landfill site, it should go without saying that appropriate measures are required to control surface water run-on. With regards to the stabilization of Module G, Geosyntec recommends that the existing stormwater run-on control systems be revisited and that the integrity of these systems be aggressively maintained. As described in the root cause assessment, liquids played a critical role in the failure, whether these liquids were directly, indirectly, or not related to surface water run-on. It is imperative that liquids be diverted to the maximum extent possible from the failure areas in Module G, as the failure has likely caused a local impediment to the vertical infiltration of liquids into the LCS.

5.5 Leachate Collection System Modification

Geosyntec understand that Santek has submitted a Minor Permit Modification Application (Minor Mod) for the construction of Module I-A located outside and contiguous to Module G. This modification will facilitate the construction of the stability berm. The activities identified in the Minor Mod will also require that the LCS for Module G be modified to accommodate the modified grading plans. As described previously, Geosyntec recommends that the existing operation of the LCS in Module G be confirmed prior to (or simultaneously with) implementation of the Minor Mod activities. In addition, Geosyntec recommends that future modules at MBL be designed to accommodate sideslope risers in the LCS design and/or redundant features in the event of the inadvertent compromise of the “cascading” LCS currently in place at the MBL.

5.6 Modifications to Modules G and B

As mentioned in the previous section, Geosyntec understands that Santek has requested a Minor Mod for Module G and Module I-A. This modification will accommodate the construction of a 30-ft high stability berm on a newly lined area in Module I-A and the placement of waste in Module G that engages the stability berm. Waste would be placed on a 4H:1V interim (or final) sideslope, incorporating 10-ft wide benches at 30-ft vertical intervals. The proposed grading plans discussed between Geosyntec and Santek would result in placing waste over the entire failure area to increase the normal stress and enhance stability. In addition, this grading will also extend above the elevation of the failure area to the current crest of Module G and Module B, resulting in the supplemental "buttressing" of areas in the upper reaches of these slopes that currently show potentially adverse indications of sludge placement (i.e., local bulging). Buttressing these areas as part of the Module G stabilization activities is a component of the overall site strategy. Finally, Geosyntec understands that Santek is considering a potential modification of the subsequent cells at the MBL and has submitted a Major Permit Modification (Major Mod) request to TDEC (currently in suspended review). Santek provided proposed grading plans for the MBL in the Major Mod. As these proposed future grading plans provide even more buttress to the failure area, Geosyntec concurs that the long-term development of the MBL as proposed by Santek in the Major Mod does not present any adverse impacts to the failure area, nor does the failure area adversely affect the proposed long-term development plans, provided (of course) that the other short- and long-term recommendations are followed.

5.7 Monitoring System

As described in Section 4, short-term monitoring of slope movement and liquid levels are recommended. Until the slope movements are confirmed to have stopped and the water levels drop below the elevation of the failure surface, Geosyntec recommends that performance monitoring of the slopes and the water levels be included at the MBL. Details of these plans will be provided after discussion with TDEC regarding the short- and long-term approved plans for the site.

6. SUMMARY AND CONCLUSIONS

6.1 Summary

This report was prepared to provide an assessment of the root cause of the 3 November 2010 waste slope failure at the MBL. Data were provided by TDEC, Santek, and Geosyntec as part of this assessment. Importantly, TDEC noted chronic problems in the recent past within Module G regarding leachate breakouts and a recent local instability. TDEC also recognized that the MBL has relatively high percentages of sludge in the incoming waste streams. The data were consistent and proved invaluable in assessing the root cause. In summary, the root cause assessment was presented in Section 3.5 of this Report. Specifically, Geosyntec believes that the root cause of the failure was due primarily to increased liquid levels in the landfill that were not being effectively conveyed to the LCS. It is anticipated that these liquids were a result of the large amount of sludge that was being placed, mixed, and compacted at the MBL. The sludge-mixed waste was likely wetter and weaker than waste placed in other portions of the landfill and weaker than waste that is typically expected at MSW landfills. Once the waste in the failure area started to creep downhill due to the ongoing waste placement activities, it is likely that the sludge-rich zones started to "smear" along localized planes. This had the effect of further reducing the ability of liquids to vertically percolate to the LCS and tended to result in local zones of weakened waste. As more movement occurred the problem was exacerbated, resulting in an accumulation of more liquids and the "enlargement" of the weakened sludge-rich zones. This continued movement likely facilitated the release of the liquids, which contributed to the "flow slide" on 3 November 2010. Importantly, the failed material slowly flowed downhill over the existing waste and essentially buried the existing toe of the Module G slope and the anchor trench. Geosyntec does not believe that the existing anchor trench or the liner integrity was compromised as a result of the failure, as confirmed by post-failure survey measurements.

6.2 Conclusions

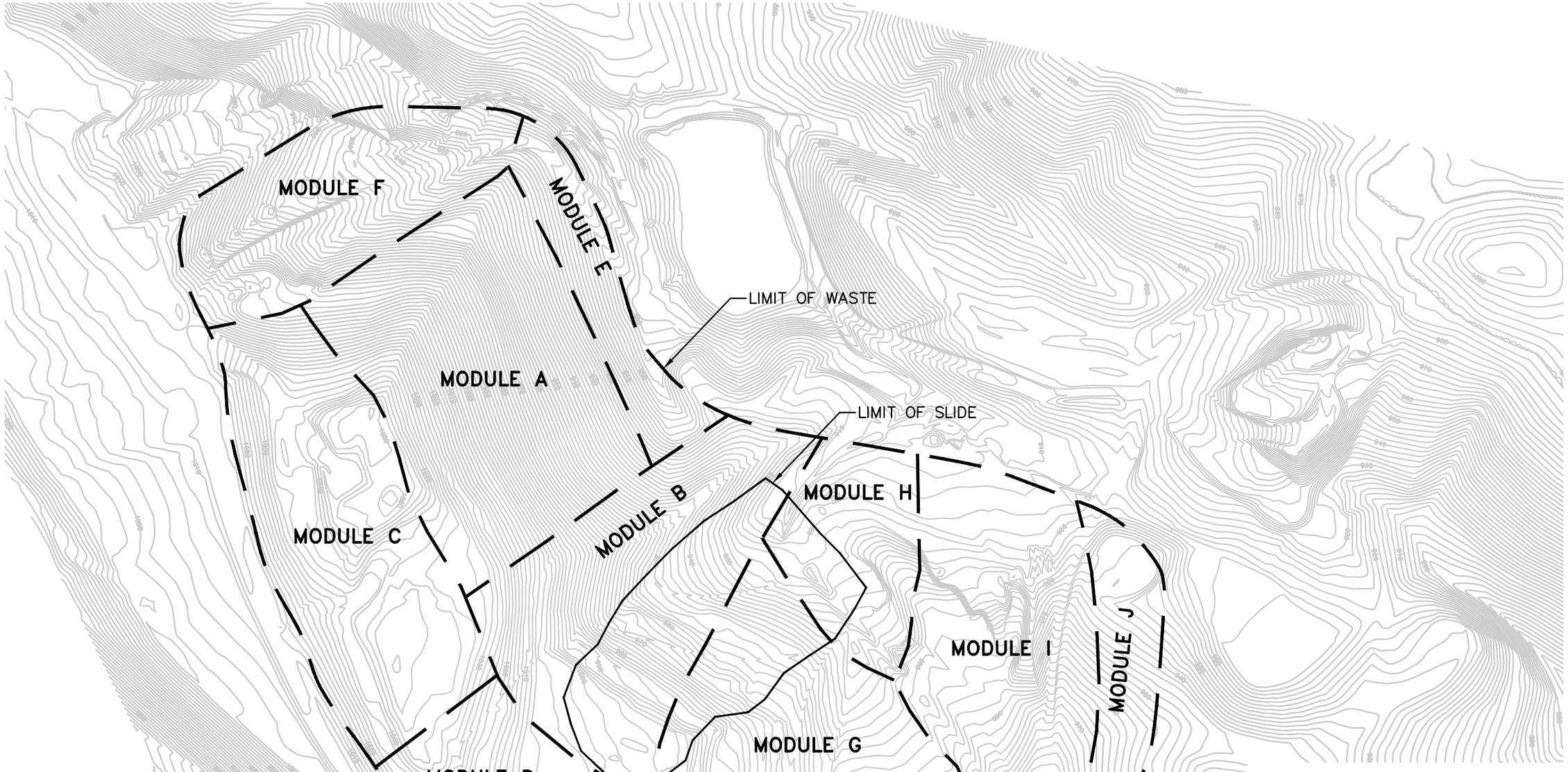
Geosyntec believes that the observations and data that have been compiled are completely consistent with the assessment of the root cause. Importantly, this root cause also provides significant insight regarding the potential rehabilitation strategies for Module G that will help provide TDEC, LCSWDC, and Santek with a measurable

assurance that adequate short- and long-term stability can be achieved in the failure area. Specifically, Geosyntec has provided specific short- and long-term recommendations regarding the installation of a permanent dewatering trench, the construction of a stability berm beyond the Module G anchor trench, the grading of waste within the buttressed Module G, and monitoring of surface movements and liquid levels. Geosyntec has also reviewed a Sludge Management Plan developed by Santek (and included in this Report) that will allow site-specific blending and mixing protocols for the sludge and waste at the MBL. By following these recommendations, Geosyntec believes that the long-term stability of the MBL can be achieved.

Geosyntec has prepared this Report to comply with the TDEC Order. Specific schedule and timelines regarding the implementation of these recommended measures will be developed upon review of this Report by TDEC and approval of specific stabilization strategies. Geosyntec believes that implementation of many of these strategies can be nearly immediate, while others may take a few weeks to fully develop and implement. After meeting with TDEC, LCSWDC, and Santek Geosyntec will work to develop a site-specific implementation strategy and will follow-up on target objectives and deliverables.

Figures

FIGURE 1
MATLOCK BEND LANDFILL - SITE PLAN



Geosyntec consultants

KENNESAW, GA

DATE:	Feb–11	SCALE:	1"=200'
PROJECT NO.	GG4773	FILE NO.	4773F001
DOCUMENT NO.	–	FIGURE NO.	1

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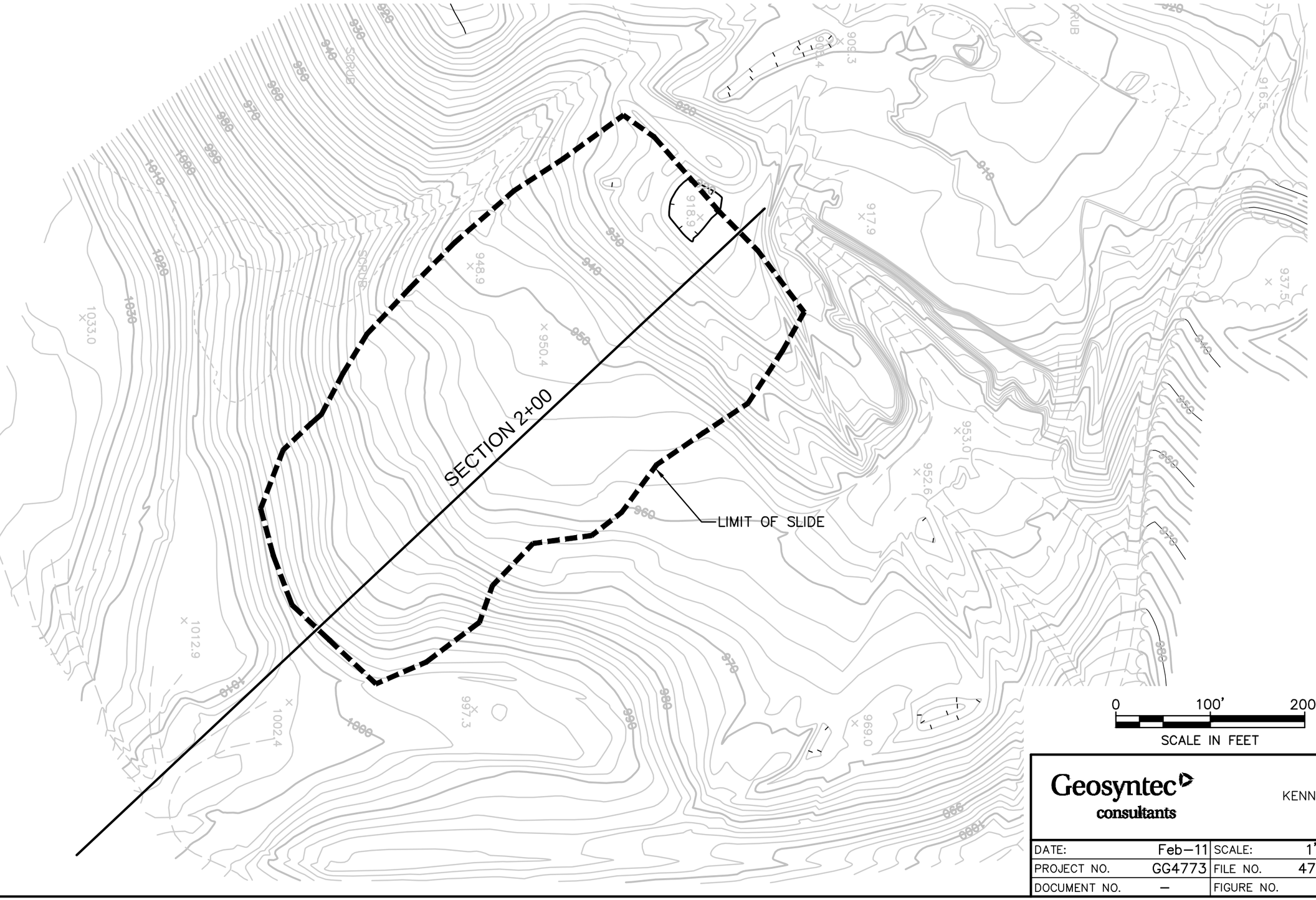
FIGURE 2
MATLOCK BEND LANDFILL - FAILURE AREA



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DATE:	Feb–11	SCALE:	1"=100'
PROJECT NO.	GG4773	FILE NO.	4773F002
DOCUMENT NO.	–	FIGURE NO.	2

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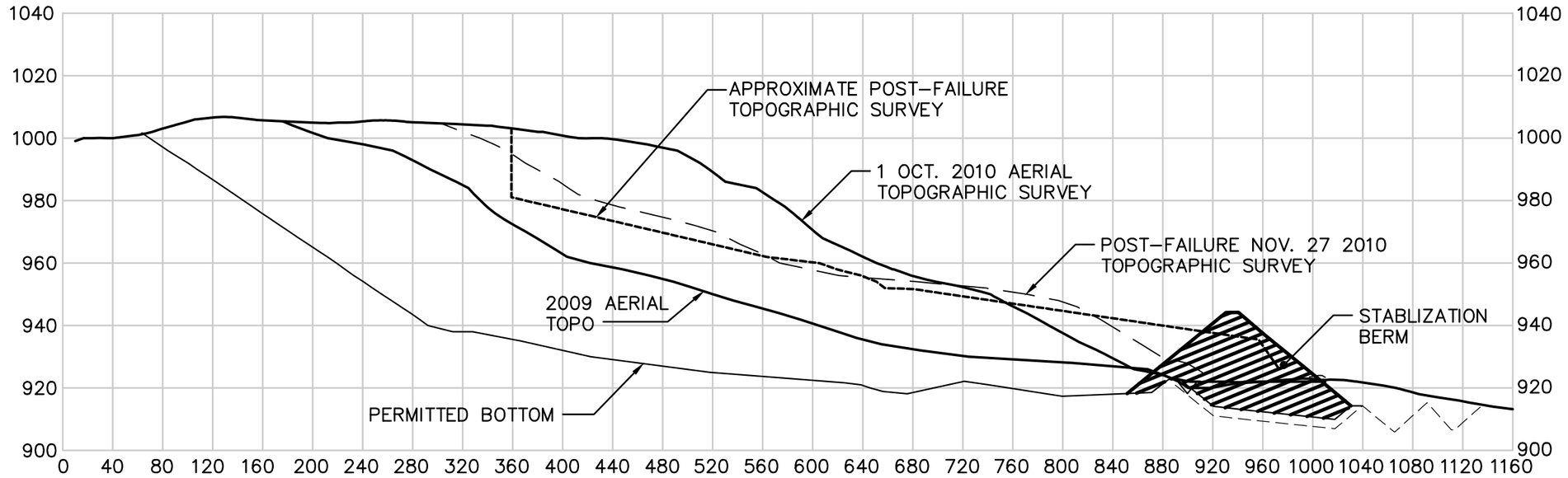
FIGURE 3
MATLOCK BEND LANDFILL -
CROSS SECTION ALONG SECTION 2+00



SECTION 2+00

0 100' 200'
SCALE IN FEET
(HORIZONTAL)

0 40' 80'
SCALE IN FEET
(VERTICAL)

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PROJECT NO.	GG4773	FILE NO.	4773F003
DOCUMENT NO.	–	FIGURE NO.	3

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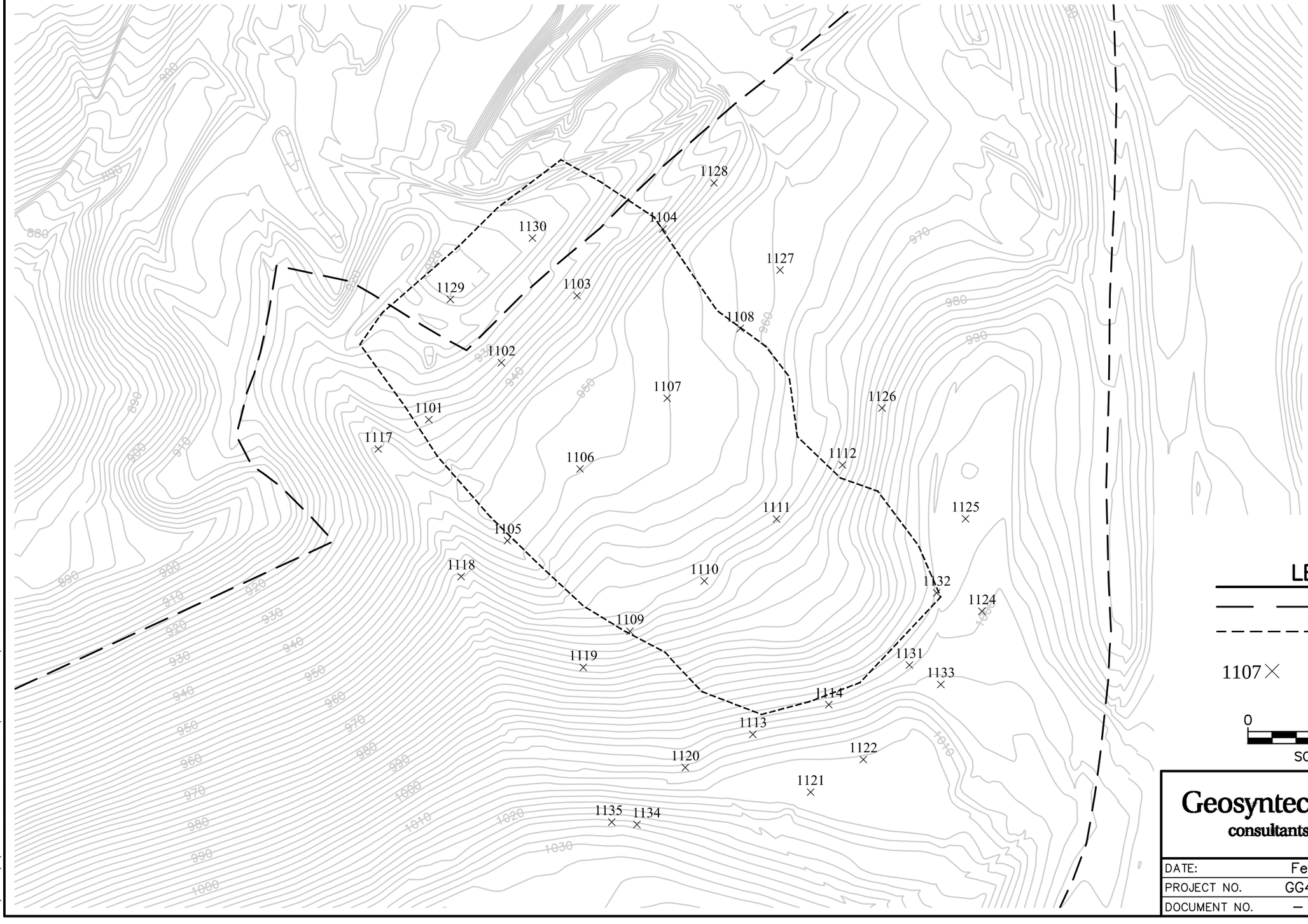
FIGURE 4
MATLOCK BEND LANDFILL - SURVEY MONITORING POINTS



N

LEGEND

- ANCHOR TRENCH
- SLIDE LIMITS
- 1107 SLIDE MOVEMENT POINTS

0 100' 200'

SCALE IN FEET

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DATE:	Feb-11	SCALE:	1"=100'
PROJECT NO.	GG4773	FILE NO.	4773F004
DOCUMENT NO.	-	FIGURE NO.	4

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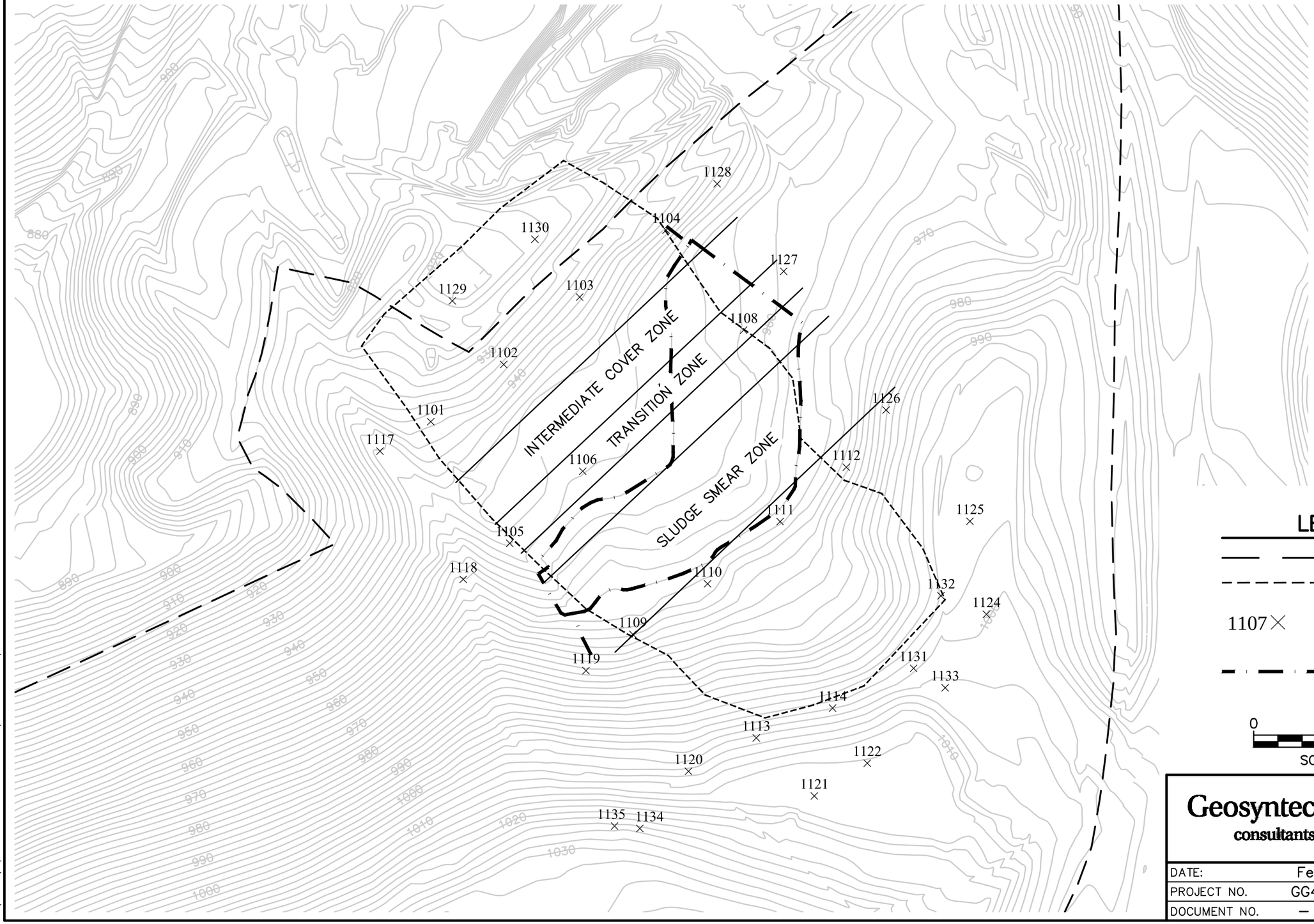
FIGURE 5
MATLOCK BEND LANDFILL - TEMPORARY DEWATERING TRENCHES



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PROJECT NO.	GG4773	FILE NO.	4773F005
DOCUMENT NO.	–	FIGURE NO.	5

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Appendix A

Waste Receipt Records

Tables

Loudon County Landfill Waste Tons & Percentages for the Last Twelve (12) Months; 11-09 thru 10-10

Waste Type	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	12 Month Average
MSW	6,078	4,511	3,692	3,872	4,157	4,025	4,039	3,943	4,323	4,421	4,621	4,016	4,308
Other	167	151	138	205	167	185	130	317	155	199	219	192	185
C&D	128	207	102	219	587	764	684	783	599	699	556	390	477
MSW & C&D Total	6,373	4,869	3,932	4,296	4,911	4,975	4,853	5,043	5,077	5,320	5,395	4,598	4,970
Special Waste													
SPW; Hubble	113	72	80	87	61	82	67	89	81	91	64	111	83
W/S	900	794	117	0	0	0	0	0	0	0	0	0	151
Ash													
W/S	0	0	16	0	12	26	2	0	0	0	670	2,214	245
W/S; Viskase	117	160	139	135	179	151	140	133	123	144	141	143	142
Tate & Lyle	0	0	0	0	0	0	0	0	0	0	164	183	29
Kimberly Clark	0	0	0	0	0	0	0	5,056	1,013	705	0	0	565
Auto Fluff	0	0	0	0	0	0	0	0	596	1,235	768	376	248
Other Special Waste	1,129	1,027	351	222	251	259	209	5,279	1,813	2,175	1,809	3,027	1,463
Sludge													
W/S; Tate & Lyle	2,842	2,486	2,296	2,501	2,412	2,588	2,625	3,128	2,409	2,465	1,797	2,104	2,471
Kimberly Clark	1,432	1,309	1,461	1,078	458	1,392	3,699	20	30	1,892	2,405	3,452	1,552
Viskase WWT	82	74	56	75	79	71	84	71	84	87	85	73	77
Sludge Total	4,357	3,870	3,812	3,654	2,949	4,052	6,408	3,220	2,523	4,444	4,287	5,629	4,100
Total Special Waste	5,486	4,896	4,163	3,876	3,200	4,311	6,618	8,498	4,336	6,619	6,095	8,656	5,563
Total Tons	**11,859**	**9,766**	**8,096**	**8,172**	**8,112**	**9,286**	**11,470**	**13,541**	**9,414**	**11,939**	**11,491**	**13,254**	**10,533**
Waste Percentages													
MSW %	54%	50%	49%	53%	61%	54%	42%	37%	54%	45%	47%	35%	47%
Other Special Waste %	10%	11%	4%	3%	3%	3%	2%	39%	19%	18%	16%	23%	14%
Sludge %	37%	40%	47%	45%	36%	44%	56%	24%	27%	37%	37%	42%	39%
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Loudon County Landfill Waste Tons & Percentages for the Twelve (12) Months; 01-09 thru 12-09

Waste Type	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	12 Month Average
MSW	3,577	3,503	4,279	4,094	4,757	6,307	7,029	6,639	6,431	6,224	6,078	4,511	5,286
Other	106	47	146	191	218	286	284	236	289	272	167	151	199
C&D	87	146	44	31	78	97	78	65	125	90	128	207	98
MSW & C&D Total	3,770	3,696	4,469	4,316	5,053	6,691	7,391	6,940	6,846	6,586	6,373	4,869	5,583
Special Waste													
SPW; Hubble	100	82	97	80	76	106	108	52	96	111	113	72	91
W/S - W/C	11	36	12	0	0	0	0	0	388	1,180	900	794	277
Ash													
W/S	942	1,239	707	614	331	431	190	197	56	11	0	0	393
W/S; Viskase	180	180	164	154	136	123	158	152	145	140	117	160	151
Tate & Lyle	4,399	1,473	202	1,484	1,708	1,945	2,025	2,465	230	0	0	0	1,328
Kimberly Clark	0	0	0	0	0	0	0	0	0	0	0	0	0
Auto Fluff	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Special Waste	5,632	3,010	1,183	2,332	2,250	2,606	2,482	2,866	916	1,442	1,130	1,026	2,240
Sludge													
W/S; Tate & Lyle	3,984	5,003	2,924	3,237	2,685	2,009	2,061	1,895	2,171	2,290	2,842	2,486	2,799
Kimberly Clark	2,723	1,958	2,064	2,003	3,026	2,865	3,633	5,192	2,448	9	1,432	1,309	2,388
Viskase WWT	78	61	69	75	81	93	80	76	85	73	82	74	77
Sludge Total	6,785	7,022	5,057	5,315	5,792	4,967	5,774	7,163	4,704	2,372	4,356	3,869	5,265
Total Special Waste	12,417	10,032	6,240	7,647	8,043	7,573	8,256	10,029	5,620	3,814	5,486	4,895	7,504
Total Tons	**16,187**	**13,728**	**10,708**	**11,963**	**13,096**	**14,264**	**15,648**	**16,969**	**12,465**	**10,401**	**11,859**	**9,764**	**13,088**
Waste Percentages													
MSW %	23%	27%	42%	36%	39%	47%	47%	41%	55%	63%	54%	50%	43%
Other Special Waste %	35%	22%	11%	19%	17%	18%	16%	17%	7%	14%	10%	11%	17%
Sludge %	42%	51%	47%	44%	44%	35%	37%	42%	38%	23%	37%	40%	40%
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

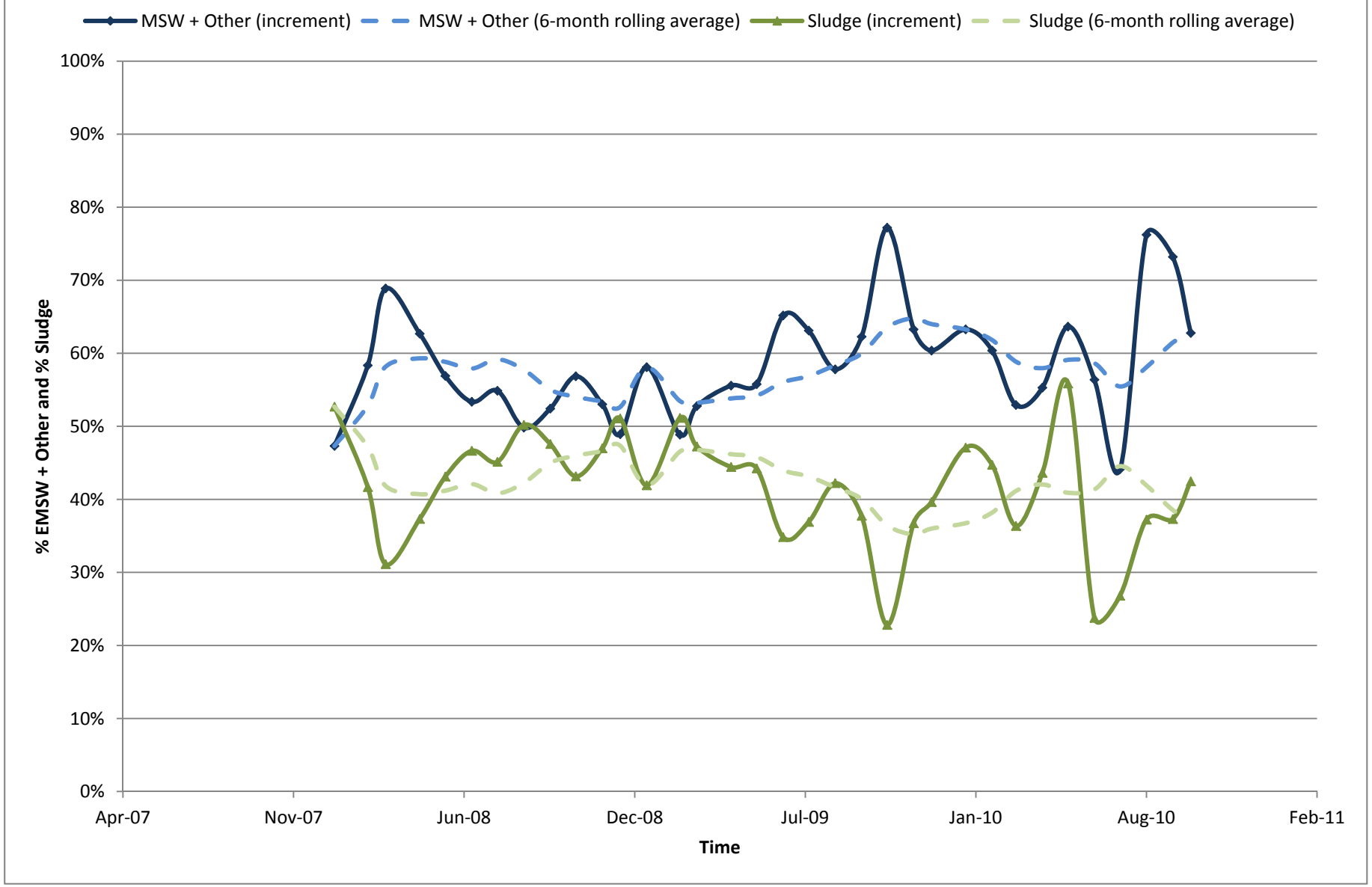
Loudon County Landfill Waste Tons & Percentages for the Twelve (12) Months; 01-08 thru 12-08

Waste Type	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08	12 Month Average
MSW	4,288	3,527	4,345	5,222	4,781	5,431	4,955	5,872	4,978	3,958	3,472	3,926	4,563
Other	120	41	55	51	91	201	123	160	194	151	111	124	118
C&D	3	2	3	1	5	3	2	42	22	6	18	15	10
MSW & C&D Total	4,411	3,569	4,404	5,274	4,877	5,635	5,081	6,074	5,194	4,116	3,602	4,065	4,692
Special Waste													
SPW; Hubble	134	106	100	127	127	113	105	94	126	130	102	74	111
W/S - W/C	10	9	25	28	19	29	812	1,075	295	22	0	78	200
Ash													
W/S	691	809	745	729	1,228	1,043	738	1,324	449	1,618	1,003	1,287	972
W/S; Viskase	159	175	179	154	136	131	120	128	141	182	163	184	154
Tate & Lyle	0	1,521	1,541	1,329	1,745	1,410	1,725	923	1,678	1,867	1,636	1,932	1,442
Kimberly Clark	0	0	0	0	0	0	52	0	0	0	0	0	4
Auto Fluff	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Special Waste	993	2,620	2,590	2,367	3,255	2,725	3,553	3,544	2,688	3,818	2,904	3,556	2,884
Sludge													
W/S; Tate & Lyle	283	186	351	263	23	232	22	4,052	6,512	5,409	4,405	4,768	2,209
Kimberly Clark	5,660	4,131	2,720	4,200	6,048	6,973	6,969	5,555	551	518	1,288	3,110	3,977
Viskase WWT	73	104	90	87	92	103	110	84	92	94	72	81	90
Sludge Total	6,016	4,421	3,161	4,551	6,162	7,308	7,101	9,691	7,155	6,021	5,765	7,959	6,276
Total Special Waste	7,010	7,041	5,752	6,918	9,417	10,032	10,653	13,236	9,842	9,839	8,668	11,515	9,160
Total Tons	**11,420**	**10,610**	**10,155**	**12,192**	**14,294**	**15,667**	**15,734**	**19,309**	**15,037**	**13,955**	**12,270**	**15,580**	**13,852**
Waste Percentages													
MSW %	39%	34%	43%	43%	34%	36%	32%	31%	35%	29%	29%	26%	34%
Other Special Waste %	9%	25%	26%	19%	23%	17%	23%	18%	18%	27%	24%	23%	21%
Sludge %	53%	42%	31%	37%	43%	47%	45%	50%	48%	43%	47%	51%	45%
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Figures

Waste and Sludge Volume Analysis

Matlock Bend Landfill



Appendix B

TDEC Site Inspection Reports

2008

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE	REGISTRATION NUMBER	DATE
Loudon County Landfill	SNL 53-0203	January 9 2008
LOCATION (physical) Off Hwy 72 west of Loudon	**PURPOSE** (X) Complete ( ) Follow-up ( ) Complaint ( ) Other	
OWNER/OPERATOR Owner: Loudon County S. W. Commission Operator: Sanifill	**TYPE OF FACILITY** (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV	

		V1	V2			V1	V2
Inadequate vector control	8010			Leachate improperly managed	8330		
Access not limited to operating hours	8020			Inadequate leachate collection system	8340		
Inadequate artificial or natural barrier	8030			Leachate observed at the site	8350		
Inadequate information signs	8040			Leachate entering runoff	8360		
Unsatisfactory access road(s)/parking area(s)	8050			Leachate entering a water course	8370		
Certified personnel not present during operating hours	8060			Inadequate gas migration control system	8380		
Unapproved salvaging of waste	8070			Inadequate maintenance of gas migration control system	8390		
Evidence of open burning	8080			Potential for explosions or uncontrolled fires	8420		
Inadequate fire protection	8090			Waste not confined to a manageable area	8430		
Unsatisfactory litter control	8110			Improper spreading of waste	8440		
Inadequate employee facilities	8120			Improper compacting of waste	8450		
No communication devices	8130			Unsatisfactory initial cover	8460		
Inadequate operating equipment	8140			Unsatisfactory intermediate cover	8470		
Unavailability of backup equipment	8150			Unsatisfactory final cover	8480		
Unavailability of cover material	8160			Excessive pooling of water	8490		
Inadequate maintenance of runon/runoff system(s)	8170			Unsatisfactory stabilization of cover	8510		
Inadequate erosion control	8180			Dumping of waste into water	8520		
Inadequate dust control	8190			Unsatisfactory records or reports	8530		
Unauthorized waste accepted	8210			Groundwater monitoring system improperly maintained	8540		
Unapproved special waste accepted	8220			Operation does not correspond with engineering plans	8570		
Tires improperly handled	8230			Operation does not correspond with permit condition(s)	8580		
Medical waste improperly handled	8240			Permit, plans, operating manual not available	8590		
Dead animals improperly handled	8250			No operating scales	8610		
Washout of solid waste	8270						
No permanent benchmark	8280						
Inadequate random inspection program	8290						
Mishandling of special waste	8300						
Buffer zone standard violated	8310						
Inadequate maintenance of leachate management system	8320						

COMMENTS: Site is satisfactory considering the time of year. A large portion of the waste is sludge from Kimberly Clark's industrial waste from Staley. They are handling cover dirt and say everything will be covered by the end of the day.

PERSON INTERVIEWED (Signature)	Pat E Thomas	INSPECTED BY (Signature)	Rick Nunn
TITLE	Mgr	TITLE	Environmental Engineer
TIME OF DAY	1:30-2:15	WEATHER CONDITIONS	Sunny 50's
		COMPLIANCE DATE	

Distribution: Facility - White Field Office - Canary Central Office - XC

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE	REGISTRATION NUMBER	DATE
Loudon County Landfill	SNL 53-0203	February 2008
LOCATION (physical) Off Hwy 72 west of Loudon	PURPOSE (X) Complete ( ) Follow-up ( ) Complaint ( ) Other	
OWNER/OPERATOR Owner: Loudon County S.W. Commission Operator: Santek/Paul Thomas	TYPE OF FACILITY (X) CLASS 1 ( ) CLASS II ( ) CLASS III ( ) CLASS IV	

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		

		V1	V2
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: A lot of waste uncovered today but they are hauling dirt and say they will have it all covered by the end of the day. Edges where waste is sticking out need to be completely covered when it is dry enough. There are some washed out ditches and slope erosion that needs to be repaired. Should begin spring seeding of bare slopes in the next month.

PERSON INTERVIEWED (Signature) Paul E Thomas	INSPECTED BY (Signature) Rick Brown
TITLE Mgr	TITLE Environmental Engineer
TIME OF DAY 1:00-2:30 PM	WEATHER CONDITIONS Cloudy, 50s
	COMPLIANCE DATE

Distribution: Facility - White Field Office - Canary Central Office - XC

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE	REGISTRATION NUMBER	DATE
Loudon County Landfill	SNL 53-0203	April 8 2008

LOCATION (physical): Off Hwy 72 west of Loudon

PURPOSE: (X) Complete ( ) Follow-up ( ) Complaint ( ) Other

OWNER/OPERATOR: Owner: Loudon G.S.W. Commission Operator: Sanitek/Paul Thomas

TYPE OF FACILITY: (X) CLASS 1 ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		

		V1	V2
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: They are putting all of the waste together in one area now. working face is smaller. One area filled on very rainy days doesn't have enough cover. They have brought dirt here today to put more over it. Try to do gas work and seed bare slopes this spring before it gets too hot.

PERSON INTERVIEWED (Signature): Paul G Thomas

TITLE: Mng

INSPECTED BY (Signature): Rick Brown

TITLE: Environmental Engineer

TIME OF DAY: 10:30-11:00 am

WEATHER CONDITIONS: Cloudy, 60s

COMPLIANCE DATE:

Distribution: Facility - White Field Office - Canary Central Office - XC

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE	REGISTRATION NUMBER	DATE
Loudon County Landfill	SNL 53-0203	April 16 2009

LOCATION (physical): Off Hwy 72 west of Loudon

PURPOSE: (X) Complete ( ) Follow-up ( ) Complaint ( ) Other

OWNER/OPERATOR: Owner: Loudon Co. S.W. Commission Operator: Sanders/Paul Thomas

TYPE OF FACILITY: ( ) CLASS I (X) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		

		V1	V2
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: Daily operation is satisfactory. Some slopes have a little washed showing + need better cover, also need to work on erosion + seeding on the back side. Grass is up from spring seeding in several places.

PERSON INTERVIEWED (Signature): Paul Thomas

TITLE: Mang

INSPECTED BY (Signature): Rick Brown

TITLE: Environmental Engineer

TIME OF DAY: 2:00-2:30

WEATHER CONDITIONS: Sunny, ≈ 60°

COMPLIANCE DATE:

Distribution: Facility - White Field Office - Canary Central Office - XC

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE	REGISTRATION NUMBER	DATE
Loudon County Landfill	SNL 53-0203	May 16 2018
LOCATION (physical)	**PURPOSE** (X) Complete ( ) Follow-up ( ) Complaint ( ) Other	
Off Hwy 72 west of Loudon		
OWNER/OPERATOR	**TYPE OF FACILITY** (X) CLASS 1 ( ) CLASS II ( ) CLASS III ( ) CLASS IV	
Owner: Loudon Co. S.W. Commission Operator: Sanitek/Paul Thomas		

		V1	V2			V1	V2
Inadequate vector control	8010			Leachate improperly managed	8330		
Access not limited to operating hours	8020			Inadequate leachate collection system	8340		
Inadequate artificial or natural barrier	8030			Leachate observed at the site	8350		
Inadequate information signs	8040			Leachate entering runoff	8360		
Unsatisfactory access road(s)/parking area(s)	8050			Leachate entering a water course	8370		
Certified personnel not present during operating hours	8060			Inadequate gas migration control system	8380		
Unapproved salvaging of waste	8070			Inadequate maintenance of gas migration control system	8390		
Evidence of open burning	8080			Potential for explosions or uncontrolled fires	8420		
Inadequate fire protection	8090			Waste not confined to a manageable area	8430		
Unsatisfactory litter control	8110			Improper spreading of waste	8440		
Inadequate employee facilities	8120			Improper compacting of waste	8450		
No communication devices	8130			Unsatisfactory initial cover	8460		
Inadequate operating equipment	8140			Unsatisfactory intermediate cover	8470		
Unavailability of backup equipment	8150			Unsatisfactory final cover	8480		
Unavailability of cover material	8160			Excessive pooling of water	8490		
Inadequate maintenance of runon/runoff system(s)	8170			Unsatisfactory stabilization of cover	8510		
Inadequate erosion control	8180			Dumping of waste into water	8520		
Inadequate dust control	8190			Unsatisfactory records or reports	8530		
Unauthorized waste accepted	8210			Groundwater monitoring system improperly maintained	8540		
Unapproved special waste accepted	8220			Operation does not correspond with engineering plans	8570		
Tires improperly handled	8230			Operation does not correspond with permit condition(s)	8580		
Medical waste improperly handled	8240			Permit, plans, operating manual not available	8590		
Dead animals improperly handled	8250			No operating scales	8610		
Washout of solid waste	8270						
No permanent benchmark	8280						
Inadequate random inspection program	8290						
Mishandling of special waste	8300						
Buffer zone standard violated	8310						
Inadequate maintenance of leachate management system	8320						

COMMENTS: Landfill operation is satisfactory, no problems observed. They have done some seeding since last time and now grass is up. Also started regrading side drainage ditch along the road. Need to finish this project + stabilize the ditch.

PERSON INTERVIEWED (Signature)	Paul Thomas	INSPECTED BY (Signature)	Rick Bjorn
TITLE	Mng	TITLE	Environmental Engineer
TIME OF DAY	11:30-2:00 PM	WEATHER CONDITIONS	Cloudy, 60s
		COMPLIANCE DATE	

Distribution: Facility - White Field Office - Canary Central Office - XC

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE	REGISTRATION NUMBER	DATE
Loudon County Landfill	SNL 53-0203	June 24 2008

LOCATION (physical): off Hwy 72 west of Loudon

PURPOSE: (X) Complete ( ) Complaint ( ) Follow-up ( ) Other

OWNER/OPERATOR: Owner: Loudon County S.W. Commission Operator: Santek / Paul Thomas

TYPE OF FACILITY: (X) CLASS 1 ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
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Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
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Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: Landfill operation is satisfactory. all waste streams are being mixed together for disposal in a fairly tight working area. All areas outside the working face have been graded and covered.

PERSON INTERVIEWED (Signature): Paul E Thomas

TITLE: Mang

INSPECTED BY (Signature): Rick Brown

TITLE:

TIME OF DAY: 10:00-10:30 AM

WEATHER CONDITIONS: Sunny, 80's

COMPLIANCE DATE:

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98)

RDAs 2202 and 2499

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: Loudon County Landfill
REGISTRATION NUMBER: SNL 53-0203
DATE: July 23 2008
LOCATION (physical): On Hwy 72 west of Loudon
PURPOSE: (X) Complete ( ) Follow-up ( ) Complaint ( ) Other
OWNER/OPERATOR: Owner: Loudon Co. Solid Waste Commission Operator: Sanford Paul Thomas
TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
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Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: Landfill operation is satisfactory. Some erosion occurred on bare areas around the landfill during recent rains. These places need to be repaired. They have succeeded putting wood chips on the bare areas for erosion control, but remainder of this

PERSON INTERVIEWED (Signature): Paul Thomas
TITLE: Mgr
INSPECTED BY (Signature): Rick Graves
TITLE: Environmental Engineer
TIME OF DAY: 11:00-1:30PM
WEATHER CONDITIONS: Cloudy, 80s
COMPLIANCE DATE:

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98)

RDAs 2202 and 2499

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE	REGISTRATION NUMBER	DATE
Loudon County Landfill	SNL 53-0203	August 13 2018
LOCATION (physical)	PURPOSE (X) Complete ( ) Follow-up ( ) Complaint ( ) Other	
411 Hwy 72 west of Loudon		
OWNER/OPERATOR	TYPE OF FACILITY (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV	
Owner: Loudon Co. S. Wk. Commission Operator: Sanitek/Paul Thomas		

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		

		V1	V2
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: They have received a lot of sludge from Kimberly Clark and Tate + Lyle, a big area isn't covered. They plan to trench this next to make sure that all of it is targeted or covered at the end of the day.

PERSON INTERVIEWED (Signature)	Paul Thomas	INSPECTED BY (Signature)	
TITLE	Mgr	TITLE	Environmental Engineer
TIME OF DAY	1:45-2:15 PM	WEATHER CONDITIONS	Sunny 80s
		COMPLIANCE DATE	/

Distribution: Facility - White Field Office - Canary Central Office - XC

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: Loudon County Landfill

LOCATION (physical): [illegible] Hwy 72 [illegible] of Loudon

OWNER/OPERATOR: Owner: Loudon Co. S.W. Commission Operator: [illegible]

REGISTRATION NUMBER: SNL 53-0203

DATE: September 12 2008

PURPOSE: (X) Complete ( ) Follow-up ( ) Complaint ( ) Other

TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		

		V1	V2
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: They are [illegible] [illegible] [illegible] in a [illegible] area, it hasn't been graded. [illegible] They say they [illegible] it at night. Need to at least grade [illegible] the waste into as small an area as possible with a smooth surface at the end of every day. They won't cover it with dirt until there is enough garbage to [illegible] it up. They have seeded some slope areas and are [illegible] it [illegible], plan [illegible] with more seeding.

PERSON INTERVIEWED (Signature): [illegible signature]

TITLE: [illegible]

INSPECTED BY (Signature): [illegible signature]

TITLE: Environmental Engineer

TIME OF DAY: 9:00-12:00 [illegible]

WEATHER CONDITIONS: Partly cloudy [illegible]

COMPLIANCE DATE: /

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98)

RDAs 2202 and 2499

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: Loudon County Landfill

REGISTRATION NUMBER: SNL 53-0203

DATE: October 15 2018

LOCATION (physical): Off Hwy 72 west of Loudon

PURPOSE: (X) Complete ( ) Follow-up ( ) Complaint ( ) Other

OWNER/OPERATOR: Owner: Loudon Co. S. W. Commission Operator: Santek / Ron Thomas

TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		

		V1	V2
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

C

COMMENTS: Daily operation is satisfactory. Observed a waste stream from Kimberly Clark, looks like shredded plastic, for which there is no approval. Kimberly Clark must submit information for this waste stream. They have seeded some slopes and bare spots on previously seeded areas. Need to place check dams in side drainage channels and erosion-prone slopes.

PERSON INTERVIEWED (Signature): [signature]

TITLE: Mgr

INSPECTED BY (Signature): Rick Brown

TITLE: Environmental Engineer

TIME OF DAY: 1:00-1:30 pm

WEATHER CONDITIONS: Sunny ~ 80°

COMPLIANCE DATE: /

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98)

RDAs 2292 and 2454

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE	REGISTRATION NUMBER	DATE
Loudon County Landfill	SNL 53-0203	November 02

LOCATION (physical): Off Hwy 72 west of Loudon

PURPOSE: (X) Complete ( ) Follow-up ( ) Complaint ( ) Other

OWNER/OPERATOR: Owner: Loudon Co. Silo. Commission Operator: Sanifill/Paul Thomas

TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		

		V1	V2
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	6590		
No operating scales	8610		

COMMENTS: Operation is satisfactory, but a lot of sludge was received today, need to make sure all of this is covered. Also need to put more sediment controls in side ditches and new dirt construction areas.

PERSON INTERVIEWED (Signature): Paul Thomas	INSPECTED BY (Signature): Rick Brown
TITLE: mgr	TITLE: Environmental Engineer
TIME OF DAY: 1:00-1:30 PM	WEATHER CONDITIONS: Sunny, 50s
	COMPLIANCE DATE:

Distribution: Facility - White Field Office - Canary Central Office - XC

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE	REGISTRATION NUMBER	DATE
Loudon County Landfill	SNL 53-0203	December 5, 2008

LOCATION (physical): 04 Hwy 72 west of Loudon

PURPOSE: (X) Complete ( ) Follow-up ( ) Complaint ( ) Other

OWNER/OPERATOR: Owner: Loudon Co. S.W. Commission Operator: Sanifill/Paul Thomas

TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2			V1	V2
Inadequate vector control	8010			Leachate improperly managed	8330		
Access not limited to operating hours	8020			Inadequate leachate collection system	8340		
Inadequate artificial or natural barrier	8030			Leachate observed at the site	8350		
Inadequate information signs	8040			Leachate entering runoff	8360		
Unsatisfactory access road(s)/parking area(s)	8050			Leachate entering a water course	8370		
Certified personnel not present during operating hours	8060			Inadequate gas migration control system	8380		
Unapproved salvaging of waste	8070			Inadequate maintenance of gas migration control system	8390		
Evidence of open burning	8080			Potential for explosions or uncontrolled fires	8420		
Inadequate fire protection	8090			Waste not confined to a manageable area	8430		
Unsatisfactory litter control	8110			Improper spreading of waste	8440		
Inadequate employee facilities	8120			Improper compacting of waste	8450		
No communication devices	8130			Unsatisfactory initial cover	8460		
Inadequate operating equipment	8140			Unsatisfactory intermediate cover	8470		
Unavailability of backup equipment	8150			Unsatisfactory final cover	8480		
Unavailability of cover material	8160			Excessive pooling of water	8490		
Inadequate maintenance of runon/runoff system(s)	8170			Unsatisfactory stabilization of cover	8510		
Inadequate erosion control	8180			Dumping of waste into water	8520		
Inadequate dust control	8190			Unsatisfactory records or reports	8530		
Unauthorized waste accepted	8210			Groundwater monitoring system improperly maintained	8540		
Unapproved special waste accepted	8220			Operation does not correspond with engineering plans	8570		
Tires improperly handled	8230			Operation does not correspond with permit condition(s)	8580		
Medical waste improperly handled	8240			Permit, plans, operating manual not available	8590		
Dead animals improperly handled	8250			No operating scales	8610		
Washout of solid waste	8270						
No permanent benchmark	8280						
Inadequate random inspection program	8290						
Mishandling of special waste	8300						
Buffer zone standard violated	8310						
Inadequate maintenance of leachate management system	8320						

COMMENTS: Waste is spread out over a wide area, should keep it in a smaller area & it will be easier to cover. They say they will get everything covered by the end of the day. Need more gravel near the active working face and on some of the roads.

PERSON INTERVIEWED (Signature)	Paul G Thomas	INSPECTED BY (Signature)	Rick Brown
TITLE	Mgr	TITLE	Environmental Engineer
TIME OF DAY	1:56-2:20 PM	WEATHER CONDITIONS	Partly cloudy 40's
		COMPLIANCE DATE	

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98) RDAs 2202 and 2499

2009

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: Loudon County Landfill

REGISTRATION NUMBER: SNL 53-0203

DATE: January 29 20[illegible]

LOCATION (physical): Off Hwy 72 west of Loudon

PURPOSE: (X) Complete ( ) Follow-up ( ) Complaint ( ) Other

OWNER/OPERATOR: Owner: Loudon County SW Commission Operator: Santek/Paul Thomas

TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		

		V1	V2
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430	X	
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460	X	
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: Waste has been put in too many places without properly covering them. It is difficult to cover well because of muddy conditions but should keep waste in as small an area as possible to minimize the area that needs to be covered. Need to get good soil cover over everything and smooth it out as soon as it dries up enough. Would be good to chip brush and spread on bare slopes to minimize erosion.

PERSON INTERVIEWED (Signature): Paul G Thomas

TITLE: Mgr

INSPECTED BY (Signature): Rick Brown

TITLE: Environmental Engineer

TIME OF DAY: 1:50-2:20

WEATHER CONDITIONS: Clear, 40's

COMPLIANCE DATE: February 12 200[illegible]

Distribution: Facility - White   Field Office - Canary   Central Office - XC

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE	REGISTRATION NUMBER	DATE
Loudon County Landfill	SNL 53-0203	February 1

LOCATION (physical): Off Hwy 72 West of Loudon

PURPOSE: ( ) Complete (X) Follow-up ( ) Complaint ( ) Other

OWNER/OPERATOR: Owner: Loudon Co. E.W. Commission Operator: Sanders/Paul Thomas

TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: Site looks a lot better. Waste is organized into one working face, and surrounding areas have been covered or covered better. Some work needs to be done on older slopes when it dries up more.

PERSON INTERVIEWED (Signature)	INSPECTED BY (Signature) Rick Groom
TITLE	TITLE Environmental Engineer

TIME OF DAY 1:45	WEATHER CONDITIONS Sunny ≈ 70°	COMPLIANCE DATE

Distribution: Facility - White Field Office - Canary Central Office - XC

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: Loudon County Landfill	REGISTRATION NUMBER: SNL 53-0203	DATE: March 17 2009
LOCATION (physical): Off Hwy 72 west of Loudon	PURPOSE: (X) Complete ( ) Complaint ( ) Follow-up ( ) Other	
OWNER/OPERATOR: Owner: Loudon Co. S.W. Commission Operator: Santek/Paul Thomas	TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV	

Item	Code	V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: Site is very muddy, working face is as good as can be expected considering the conditions, but need to put more gravel on all roads so trucks can go to where they should dump, and put some dried dirt in very muddy area at the bottom of the working face. No serious erosion from the heavy rains, need to grade some areas that were fixed last ~~year~~ and don't have much grass.

PERSON INTERVIEWED (Signature): Paul [illegible]	INSPECTED BY (Signature): [illegible signature] [illegible]
TITLE: Mng.	TITLE: Environmental Engineer
TIME OF DAY: 1:45-2:15	WEATHER CONDITIONS: Sunny ≈ 70°
COMPLIANCE DATE:	

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98)

RDAs 2202 and 2499

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE	REGISTRATION NUMBER	DATE
Loudon County Landfill	SNL 53-0203	5/11/2004

LOCATION (physical): Off Hwy 72 west of Loudon

PURPOSE: (X) Complete ( ) Follow-up ( ) Complaint ( ) Other

OWNER/OPERATOR: Owner: Loudon Co. S.W. Commission Operator: Sanifill/Carl Thomas

TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: There is a leachate outbreak on the slope above the new cell. Right now the leachate is going into a trap in the old liner and being collected. The seep will need to be fixed before they tie the new liner into the old. Otherwise everything else looks good.

PERSON INTERVIEWED (Signature): Carl Thomas

TITLE: MMS

INSPECTED BY (Signature): Rick Graves

TITLE: Environmental Engineer

TIME OF DAY: 2:11-2:50PM

WEATHER CONDITIONS: Cloudy, 60s

COMPLIANCE DATE:

Distribution: Facility - White Field Office - Canary Central Office - XC

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: Loudon County Landfill

REGISTRATION NUMBER: SNL 53-0203

DATE: June 8 2009

LOCATION (physical): Off Hwy 72 west of Loudon

PURPOSE: (X) Complete ( ) Complaint ( ) Follow-up ( ) Other

OWNER/OPERATOR: Owner: Loudon Co. S.W. Commission Operator: Santek/Paul Thomas

TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		

		V1	V2
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350	X	
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: There is still some leachate coming out of seeps on the side above the new cell, although most of it is coming out of open garbage at the edge of the liner. Need to fix the seeps on the slopes and cover the open waste at the edge as soon as the finished liner is accepted (with piping, drainage layer, etc.) Leachate is now ponding just below the edge of the new cell. Need to pump this out and pump or haul it to a leachate tank.

PERSON INTERVIEWED (Signature): Paul G Thomas

INSPECTED BY (Signature): Rick Brown

TITLE: Mgr

TITLE: Environmental Engineer

TIME OF DAY: 11:45-11:30AM

WEATHER CONDITIONS: Partly cloudy, 80s

COMPLIANCE DATE: June 23 2009

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98)

RDAs 2202 and 2499

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: Loudon County Landfill
REGISTRATION NUMBER: SNL 53-0203
DATE: June 25 2009
LOCATION (physical): Off Hwy 72 west of Loudon
PURPOSE: (X) Complete (X) Follow-up ( ) Complaint ( ) Other
OWNER/OPERATOR: Owner: Loudon Co. E.D. Commission Operator: [redacted]/Sanifek Land Application
TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350	X	
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430	X	
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: The leachate seeps above the new cell are still flowing but it has probably been too wet to do anything about them since the last inspection. They tried to work on the slopes but it was too wet. They have waste in several places - they had operational reasons to put this but need to consolidate all the waste into one place and make sure all of the waste in all areas is covered at the end of the day today. Also need to work on erosion around the [redacted] area of the site.

PERSON INTERVIEWED (Signature): L. Hyde
TITLE:
INSPECTED BY (Signature): Rick Brown
TITLE: Environmental Engineer
TIME OF DAY: 10:30 AM
WEATHER CONDITIONS: Sunny, 80s
COMPLIANCE DATE: July 9 2009

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98)

RDAs 2207 and 2400

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: Loudon Comm'y landfill

REGISTRATION NUMBER: SNL 53-0283

DATE: July 9 2019

LOCATION (physical): Hwy 72 west of Loudon

PURPOSE: ( ) Complete (X) Follow-up ( ) Complaint ( ) Other

OWNER/OPERATOR: City of Loudon C.S.W. Commission / Operator: Sanitek / Justin Givens

TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270	X	
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		

		V1	V2
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350	X	
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430	X	
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: A slope failure has occurred on the slope above the new cell where leachate has been breaking out - soil and waste has slid downhope. They dug a big hole above it and are pumping leachate out, but leachate is still breaking out uncontrolled now. Need to try to pick up the material that slid and landfill it or top and patch up the slope. They are still starting to fill different places instead finishing the first one. Need to keep all the waste in one place. Since the sludge needs to be at the bottom need to schedule sludge the first thing in the morning.

PERSON INTERVIEWED (Signature)

TITLE

INSPECTED BY (Signature) Becky Brown

TITLE Environmental Engineer

TIME OF DAY 2:00-2:30 pm

WEATHER CONDITIONS Sunny ≈ 90°

COMPLIANCE DATE July 23 2019

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98)

RDAs 2202 and 2499

MATT DILLARD

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE	REGISTRATION NUMBER	DATE
Loudon County Landfill	SNL 53-0203	July 28 2009
LOCATION (physical): Off Hwy 72 west of Loudon	PURPOSE: ( ) Complete (X) Follow-up ( ) Complaint ( ) Other	
OWNER/OPERATOR: Owner: Loudon C.S.W. Commission Operator: Sanifill	TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV	

		V1	V2			V1	V2
Inadequate vector control	8010			Leachate improperly managed	8330		
Access not limited to operating hours	8020			Inadequate leachate collection system	8340		
Inadequate artificial or natural barrier	8030			Leachate observed at the site	8350		
Inadequate information signs	8040			Leachate entering runoff	8360		
Unsatisfactory access road(s)/parking area(s)	8050			Leachate entering a water course	8370		
Certified personnel not present during operating hours	8060			Inadequate gas migration control system	8380		
Unapproved salvaging of waste	8070			Inadequate maintenance of gas migration control system	8390		
Evidence of open burning	8080			Potential for explosions or uncontrolled fires	8420		
Inadequate fire protection	8090			Waste not confined to a manageable area	8430		
Unsatisfactory litter control	8110			Improper spreading of waste	8440		
Inadequate employee facilities	8120			Improper compacting of waste	8450		
No communication devices	8130			Unsatisfactory initial cover	8460		
Inadequate operating equipment	8140			Unsatisfactory intermediate cover	8470		
Unavailability of backup equipment	8150			Unsatisfactory final cover	8480		
Unavailability of cover material	8160			Excessive pooling of water	8490		
Inadequate maintenance of runon/runoff system(s)	8170			Unsatisfactory stabilization of cover	8510		
Inadequate erosion control	8180			Dumping of waste into water	8520		
Inadequate dust control	8190			Unsatisfactory records or reports	8530		
Unauthorized waste accepted	8210			Groundwater monitoring system improperly maintained	8540		
Unapproved special waste accepted	8220			Operation does not correspond with engineering plans	8570		
Tires improperly handled	8230			Operation does not correspond with permit condition(s)	8580		
Medical waste improperly handled	8240			Permit, plans, operating manual not available	8590		
Dead animals improperly handled	8250			No operating scales	8610		
Washout of solid waste	8270						
No permanent benchmark	8280						
Inadequate random inspection program	8290						
Mishandling of special waste	8300						
Buffer zone standard violated	8310						
Inadequate maintenance of leachate management system	8320						

COMMENTS: They have cleaned up the slope failure area, put the waste on top and graded the area with some soil cover. Not enough cover everywhere, some waste is showing but need to wait till it dries up more to cover it better because the slope is very steep there. The leachate has almost stopped, a few dump spots but are flowing. They put in some leachate gas lines on the slopes down to the new cell. The working face is smaller now, all in the new cell except for a little waste on top that they don't want in

PERSON INTERVIEWED (Signature)	INSPECTED BY (Signature) Rick Brown the first lawyer.
TITLE	TITLE Environmental Engineer
TIME OF DAY 2:15-3:00 pm	WEATHER CONDITIONS Partly c. Cindy 80s
	COMPLIANCE DATE

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98)

RDAs 2202 and 2499

0000908

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: Loudon County Landfill

LOCATION (physical): Off Hwy 72 west of Loudon

REGISTRATION NUMBER: SNL 53-0203

DATE: August 26 2009

OWNER/OPERATOR: Owner: Loudon Co. S.W. Commission Operator: Santek Environmental

PURPOSE: (X) Complete ( ) Follow-up ( ) Complaint ( ) Other

TYPE OF FACILITY: (X) CLASS 1 ( ) CLASS II ( ) CLASS III ( ) CLASS IV

Item	Code	V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460	X	
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: Large area of waste was not covered yesterday and it had been tarped. They say this was waste due to always be covered with soil, use tarps only the face. Large/flat areas of garbage exposed will refill with soil. They have dug out some leachate seeps and will need to put the company (generators) for all special wastes. Need to install pipes. In random inspection work on side barrow wheels that have been having erosion problems for a long time. Try to do a lot of seeding ... month.

PERSON INTERVIEWED (Signature): [illegible]

INSPECTED BY (Signature): Rick Brown

TITLE: Environmental Engineer

DAY 10:15-11:00 AM

WEATHER CONDITIONS: Sunny ≈ 80°

COMPLIANCE DATE: September 9 2009

Distribution: Facility - White Field Office - Canary Central Office - XC

Rev. 7-98)

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: Loudon County Landfill
REGISTRATION NUMBER: SNL 53-0203
DATE: September 4, 200
LOCATION (physical): Old Hwy 11 West of Loudon
PURPOSE: (X) Complete ( ) Complaint (X) Follow-up ( ) Other
OWNER/OPERATOR: Owner: Loudon Co. C.W. Commission Operator: Sentek / Austin Grieve
TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: Active area is adequately covered, everything is covered except for today's waste. Some work areas have been seeded and check dams were placed in eroded areas or the side. Need some smaller rock for the check dams. An area on the slope above the new cell is damp, looks like leachate is about to break out need to watch this and fix it if necessary

PERSON INTERVIEWED (Signature): Just Do
TITLE:
INSPECTED BY (Signature): Rick Gorm
TITLE: Environmental Engineer
TIME OF DAY: 1:00-2:30
WEATHER CONDITIONS: Cloudy 70s
COMPLIANCE DATE:

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98)

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: Loudon County Landfill

REGISTRATION NUMBER: SNL 53-0203

DATE: October 5 2009

LOCATION (physical): Off Hwy 72 west of Loudon

PURPOSE: (X) Complete ( ) Follow-up ( ) Complaint ( ) Other

OWNER/OPERATOR: Owner: Loudon County S.W. Commission Operator: Santek/Dustin Givens

TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		

		V1	V2
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: The active working area has a good shape and they are using the rain flap effectively. However, the access road over the fill surface needs a lot of gravel. It is passable but very muddy and trucks are stopping short of the daily cell to unload and waste is being pushed to the desired location. This is not good practice. The road needs to be well graveled all the way to the daily cell. This is especially important going into the winter season. Operation will be acceptable today if everything is covered at the end of the day, but pushing garbage scatters it and creates more surface to cover.

PERSON INTERVIEWED (Signature): [signature]

TITLE:

INSPECTED BY (Signature): Dick Brown

TITLE: Environmental Engineer

TIME OF DAY: [illegible] - 11:15 AM

WEATHER CONDITIONS: Cloudy, 60s, wet & muddy

COMPLIANCE DATE:

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98) RDAs 2202 and 2499

They have made check dams along the side drainage ditch and borrow area. These need smaller rocks behind the big rocks, also need to

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

...E: ...n County Landfill	REGISTRATION NUMBER: SNL 53-0203	DATE: November 5 2009
...N (physical): Hwy 72 West of Loudon	PURPOSE: (X) Complete ( ) Complaint ( ) Follow-up ( ) Other	
...ER/OPERATOR: ...Loudon Co. S W Commission Operator: Santek/Jashe Givens	TYPE OF FACILITY: (X) CLASS 1 ( ) CLASS II ( ) CLASS III ( ) CLASS IV	

Item	Code	V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350	X	
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: There are leachate seeps on the slope above the active area at in the vicinity where there have been problems before. Need to try to fix these while we have good weather.

PERSON INTERVIEWED (Signature) Jashe Givens	INSPECTED BY (Signature) Rick Brown
TITLE	TITLE Environmental Engineer
TIME OF DAY 12:45-1:20pm WEATHER CONDITIONS Sunny, ≈60°	COMPLIANCE DATE November 19 2009

Distribution: Facility - White Field Office - Canary Central Office - XC

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: Loudon County Landfill

REGISTRATION NUMBER: SNL 53-0203

DATE: December 1 2

LOCATION (physical): Off Hwy 72 west of Loudon

PURPOSE: (X) Complete ( ) Follow-up ( ) Complaint ( ) Other

OWNER/OPERATOR: Owner: Loudon County / City Commission Operator: Santek / Justin Greer

TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

Item	Code	V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150	X	
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430	X	
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460	X	
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: Large area of waste is not covered. They say they have problems mixing sludge with soil & compacting it, will need to limit the amount of sludge per day. Also with wet conditions they are unable to haul enough cover soil with a pan, but could with a loader & truck which they do not have. Need to rent this equipment if they cannot obtain it quickly enough to meet the daily operational requirements.

PERSON INTERVIEWED - (Signature): Just. Greer

TITLE:

INSPECTED BY (Signature): Rick Brown

TITLE: Environmental Engineer

TIME OF DAY: 1:30-2:30 PM

WEATHER CONDITIONS: Partly cloudy, 30s

COMPLIANCE DATE: December 28 2009

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98)

2010

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: MATLOCK Bend Loudon County Class I	REGISTRATION NUMBER: SNL 53-0203	DATE: 1-15-10
LOCATION (physical): OFF Hwy 72 N/ Loudon County	PURPOSE: (X) Complete ( ) Follow-up ( ) Complaint ( ) Other	
OWNER/OPERATOR: County / Santek - Operator	TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV	

Item	Code	V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: Install Litter Fencing up Top back of Active cell. Gasket Front leachate Tank slow dripping needs new gasket or tightening. Cover Leachate/Trench repair area w/ soils.

PERSON INTERVIEWED (Signature) [signature]	INSPECTED BY (Signature) [signature]
TITLE	TITLE ETS 3

TIME OF DAY 1:00pm	WEATHER CONDITIONS 50°F Sunny	COMPLIANCE DATE N/A

Distribution: Facility - White Field Office - Canary Central Office - XC

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: Loudon County Class I Matlock Bend

REGISTRATION NUMBER: SNL53-0203

DATE: 2/22/10

LOCATION (physical): Hwy 72 Loudon N of I-40

PURPOSE: (X) Complete ( ) Follow-up ( ) Complaint ( ) Other

OWNER/OPERATOR: Loudon County / Santek

TYPE OF FACILITY: (X) CLASS 1 ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		

		V1	V2
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		✓
Leachate entering runoff	8360		✓
Leachate entering a water course	8370	?	SAMPLE Request
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: Leachate prevalent front new cell, trenches dug general - NO pumps or collection efforts observed, leachate free flowing into ditch system - Inspector walked down could not get (trail) to pond to observed if impact all way to Pond. Requesting sample: ph, BOD, COD, solids + organics + section L to show Pond water condition. Cover soils needed general. Liquids in trenches must be pumped + sent WWTP Keep records of Loads

PERSON INTERVIEWED (Signature):

TITLE: Junior Russell

INSPECTED BY (Signature): Paul Plant

TITLE: FIS 3

TIME OF DAY: 1:20 pm

WEATHER CONDITIONS: 40°F overcast

COMPLIANCE DATE: CRM Letter will be sent

heavy rain event overnight

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98)

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE	REGISTRATION NUMBER	DATE
Loudon Matlock Bend Class I	SNL 53-0203	3-9-10

LOCATION (physical): Hwy 70 W of I-75

PURPOSE: ( ) Complete (X) Follow-up ( ) Complaint ( ) Other

OWNER/OPERATOR: Loudon / Sanitec

TYPE OF FACILITY: (X) CLASS 1 ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		
Leachate improperly managed	8330		
Inadequate leachate collection system	8340	✓	
Leachate observed at the site	8350	✓	
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: V. 8350 lowered to V, - Some areas of leachate still occuring upon slope, Progress made, trenches covered + clean soil observed over the lower area, Valley to have more cover + compacted. Ditch looks better V. 8360 Lifted, Pond to be cleaned + Compliance Agreement Letter to come - Progress observed today.

PERSON INTERVIEWED (Signature)	INSPECTED BY (Signature)
TITLE	TITLE EPS3

TIME OF DAY	WEATHER CONDITIONS	COMPLIANCE DATE
2 pm	Cloudy 55°F	14 days

Distribution: Facility - White Field Office - Canary Central Office - XC

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE	REGISTRATION NUMBER	DATE
Loudon County Matlock Bend	SNL 53-0203	3-25-10

LOCATION (physical): Hwy 72 N

PURPOSE: ( ) Complete (X) Follow-up ( ) Complaint ( ) Other

OWNER/OPERATOR: Loudon County // Santek

TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

Item	Code	V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		

Item	Code	V1	V2
Leachate improperly managed	8330		
Inadequate leachate collection system	8340	Lifted Today *	
Leachate observed at the site	(8350)		
Leachate entering runoff	(8360)		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: V 8350 Lifted today Area observed to be worked. Pond Cleaning begun - more to be done. Add filter socks

- C/M outstanding issues may apply see letter - drainage etc. Field observation for 8350 now closed.

PERSON INTERVIEWED (Signature)	[signature]	INSPECTED BY (Signature)	[signature]
TITLE	Manager/Site	TITLE	EDS 3
TIME OF DAY	11:16	WEATHER CONDITIONS	50°F Rain
		COMPLIANCE DATE	N/A

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98)

RDAs 2202 and 2499

200-1008

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: Loudon County Matlock Bend

REGISTRATION NUMBER: SNL 53-0203

DATE: 4-16-10

LOCATION (physical): Hwy 72 N of I-75 Loudon

PURPOSE: (X) Complete ( ) Complaint ( ) Follow-up ( ) Other

OWNER/OPERATOR: Santek, Levi Higdon

TYPE OF FACILITY: (X) CLASS 1 (X) CLASS III ( ) CLASS II ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
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Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: Leachate at site was being worked — hole open – vacuum + jet trucks/equipment on site, Bearsted plastic taped over surface area. Not citing V. as it was in process of fix. Pond is now cleaned, pipe in emergency spillway to be installed. No violations

PERSON INTERVIEWED (Signature): [signature]

TITLE:

INSPECTED BY (Signature): Paul Plant

TITLE: EPS 3

TIME OF DAY: 1:12 pm

WEATHER CONDITIONS: 80°F Clear

COMPLIANCE DATE: N/A

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98) RDAs 2202 and 2499

200-1008

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: LOUDON COUNTY MATLOCK Bend
REGISTRATION NUMBER: SNL 53-0203
DATE: 5-10-10
LOCATION (physical): 111 Hwy 72 N of I-75 Loudon, TN
PURPOSE: (X) Complete ( ) Follow-up ( ) Complaint ( ) Other
OWNER/OPERATOR: LOUDON COUNTY, Santek Levi Hinton
TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

Item	Code	V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350	✓	
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380	✓	
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: leachate little above last repair, gas at the highest leachate pop. Ditch needs work with acceptable base grade (no sudden drops) clean vegetation to be able to walk & see water to pond. plans show Rip Rap of uniform size. This is best to prevent erosion.

PERSON INTERVIEWED (Signature): [signature]
TITLE:
INSPECTED BY (Signature): [signature]
TITLE: EPS 3

TIME OF DAY: 2pm
WEATHER CONDITIONS: 70° cloudy
COMPLIANCE DATE: 7 days

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98)

RDAs 2202 and 2499

200-1008

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: Loudon County Matlock Bend

REGISTRATION NUMBER: SNL 53-0203

DATE: 5-14-10

LOCATION (physical): off Matlock Bend hy Hwy 72N off I-75

PURPOSE: ( ) Complete ( ) Complaint (X) Follow-up ( ) Other

OWNER/OPERATOR: Loudon County / Santek

TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

	Code	V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
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Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site *	8350			CK
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system *	8380			CK
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: New gas vents + fresh clean cover observed over leachate areas — Last action item Need dirt cover over Rock to prevent stormwater running in. Higher areas need culvert across road + vent runoff from older higher area needs to not be run-on for new active cell. 8350 + 8380 lifted today

PERSON INTERVIEWED (Signature):

TITLE:

INSPECTED BY (Signature): [signature]

TITLE: EPS 3

TIME OF DAY: 12:30pm

WEATHER CONDITIONS: 80°F Pt Cloudy

COMPLIANCE DATE: N/A

Distribution: Facility - White Field Office - Canary Central Office - XC

RDAs 2202 and 2499

CN-0761 (Rev. 7-98)

... Harrow stormwork in June.

200-1008

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE	REGISTRATION NUMBER	DATE
National Prod (Inst I	SNL 53-0203	6-14-10

LOCATION (physical): Hwy 72 N Hinton

PURPOSE: (X) Complete ( ) Follow-up ( ) Complaint ( ) Other

OWNER/OPERATOR: Jackson County Public

TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2			V1	V2
Inadequate vector control	8010			Leachate improperly managed	8330		
Access not limited to operating hours	8020			Inadequate leachate collection system	8340		
Inadequate artificial or natural barrier	8030			Leachate observed at the site	8350	✓	
Inadequate information signs	8040			Leachate entering runoff ?	8360		
Unsatisfactory access road(s)/parking area(s)	8050			Leachate entering a water course	8370		
Certified personnel not present during operating hours	8060			Inadequate gas migration control system	8380		
Unapproved salvaging of waste	8070			Inadequate maintenance of gas migration control system	8390		
Evidence of open burning	8080			Potential for explosions or uncontrolled fires	8420		
Inadequate fire protection	8090			Waste not confined to a manageable area	8430		
Unsatisfactory litter control	8110			Improper spreading of waste	8440		
Inadequate employee facilities	8120			Improper compacting of waste	8450		
No communication devices	8130			Unsatisfactory initial cover	8460		
Inadequate operating equipment	8140			Unsatisfactory intermediate cover	8470		
Unavailability of backup equipment	8150			Unsatisfactory final cover	8480		
Unavailability of cover material	8160			Excessive pooling of water	8490		
Inadequate maintenance of runon/runoff system(s)	8170			Unsatisfactory stabilization of cover	8510		
Inadequate erosion control	8180			Dumping of waste into water	8520		
Inadequate dust control	8190			Unsatisfactory records or reports	8530		
Unauthorized waste accepted	8210			Groundwater monitoring system improperly maintained	8540		
Unapproved special waste accepted	8220			Operation does not correspond with engineering plans	8570		
Tires improperly handled	8230			Operation does not correspond with permit condition(s)	8580		
Medical waste improperly handled	8240			Permit, plans, operating manual not available	8590		
Dead animals improperly handled	8250			No operating scales	8610		
Washout of solid waste	8270						
No permanent benchmark	8280						
Inadequate random inspection program	8290						
Mishandling of special waste	8300						
Buffer zone standard violated	8310						
Inadequate maintenance of leachate management system	8320						

COMMENTS: Leach to pods various spots. Smooth out to be like made for Run off. Run off from side Top AREA Need Culvert at Road into Cell + Needs to get to Runoff ditch. This has been adding water to waste new Cell. Ditch to Pond NOT YET Shaped. Fax 594-6105 Pond data. Ditch behind Tanks + next to has algae + wet investigate. Set aerator in pond.

PERSON INTERVIEWED (Signature)	INSPECTED BY (Signature) Paul Plut
TITLE	TITLE EPS3

TIME OF DAY 1:43pm	WEATHER CONDITIONS 90°F clear	COMPLIANCE DATE 7 days

Distribution: Facility - White Field Office - Canary Central Office - XC

200-1008

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE	REGISTRATION NUMBER	DATE
Matlock Bend Landfill	SNL 53-0203	6/21/10

LOCATION (physical): Hwy 72 N

PURPOSE: ( ) Complete (X) Follow-up ( ) Complaint ( ) Other

OWNER/OPERATOR: Loudon County / Santek

TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		

		V1	V2
Leachate improperly managed	8330		
Inadequate leachate collection system	8340	lifted today	
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: V, lifted today. Road dust reduced. Tested [illegible] [illegible] on site. Good operation BMP culvert (small) in place of road to cell. Suggest [illegible] grading to ensure water gets to [illegible]. Add cover some waste, need more.

PERSON INTERVIEWED (Signature): [signature]

TITLE:

INSPECTED BY (Signature): [signature]

TITLE: EPS 3

TIME OF DAY: 9:30am

WEATHER CONDITIONS: 90°F Clear

COMPLIANCE DATE: N/A

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98) [illegible] RDAs 2202 and 2499

200-1008

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: Matlock Bend Loudon Co Class I

REGISTRATION NUMBER: SNL 53-0203

DATE: 7/27/2[?]

LOCATION (physical): Hwy 72 N Loudon Co

PURPOSE: (X) Complete ( ) Complaint ( ) Follow-up ( ) Other

OWNER/OPERATOR: LC / Santek

TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

	Code	V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: One slope needs more [illegible]. New larger pipe in to hold run-on off of cell. One area being trenched + drainage media placed to help leachate move down. Ditch to pond now riprap[?] + rock placed. Armor around 90° bend shouldn't scour[?]. No violations observed today.

PERSON INTERVIEWED (Signature): [signature]

TITLE:

INSPECTED BY (Signature): [signature]

TITLE: EPS 3

TIME OF DAY: 1:50

WEATHER CONDITIONS: 93°F Clear

COMPLIANCE DATE: N/A

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98)

200-1008

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: Loudon County Matlock Bend

REGISTRATION NUMBER: SNL 53-0203

DATE: 8-25-10

LOCATION (physical): Hwy 72 N of I-75 Loudon

PURPOSE: ( ) Complete ( ) Complaint (X) Follow-up ( ) Other

OWNER/OPERATOR: Loudon County / Santek

TYPE OF FACILITY: (X) CLASS I ( ) CLASS II (X) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site *	8350	~~Aol~~ Dir	Check
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: Visit today followup V.8350 for Leachate
Progress made - slope above liner Rain flap side has been worked + covered. This looks good
still wet leachate spots above open pit construction area + couple upon older slope to be fixed.
V. Remains from drains Continue fixes + construction
Inspector will follow up the ... other areas

PERSON INTERVIEWED (Signature): [signature]

TITLE:

INSPECTED BY (Signature): [signature]

TITLE: EPS 3

COMPLIANCE DATE: Ongoing

TIME OF DAY: 10:45am

WEATHER CONDITIONS: Overcast

Distribution: Facility - White Field Office - Canary Central Office - XC

RDAs 2202 and 2499

CN-0761 (Rev. 7-98)

200-1008

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: Loudon County Matlock Bend
REGISTRATION NUMBER: SNL 53-0203
DATE: 9-2-10
LOCATION (physical): Hwy 72N Loudon off I-75
PURPOSE: ( ) Complete (X) Follow-up ( ) Complaint ( ) Other
OWNER/OPERATOR: Loudon County / Smith K
TYPE OF FACILITY: (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

Liftd ck

COMMENTS: Follow-up for 8350 Lifted 10 days

PERSON INTERVIEWED (Signature): [signature]
TITLE:
INSPECTED BY (Signature): Paul Flint
TITLE: EPS3
TIME OF DAY: 12:15pm
WEATHER CONDITIONS: 87°F Clear
COMPLIANCE DATE: N/A

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98)

RDAs 2202 and 2499

200-1008

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE	REGISTRATION NUMBER	DATE
Loudon County Mattress Bed	SNL 53-0203	9-2-10
LOCATION (physical) Hwy 72N Loudon off I-75	PURPOSE (X) Complete ( ) Follow-up ( ) Complaint ( ) Other	
OWNER/OPERATOR Loudon County / Smith C	TYPE OF FACILITY (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV	

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		

		V1	V2
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: No violations observed

PERSON INTERVIEWED (Signature)	INSPECTED BY (Signature) Paul Plant
TITLE	TITLE EPS3
TIME OF DAY 2:15pm	WEATHER CONDITIONS 87° Clear
	COMPLIANCE DATE N/A

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98)

RDAs 2202 and 2499

200-1006

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE: Loudon County/Matlock Bend

REGISTRATION NUMBER: SNL53-0003

DATE: 10-11-10

LOCATION (physical): Hwy 72 N off I-75 Loudon

PURPOSE (X) Complete ( ) Follow-up ( ) Complaint ( ) Other

OWNER/OPERATOR: Loudon Co Owner/Santek Operator

TYPE OF FACILITY (X) CLASS I ( ) CLASS II ( ) CLASS III ( ) CLASS IV

Item	Code	V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: Observed several leachate pools - operator had truck haul dirt to patch prior to inspector leaving - acceptable. Gave special waste receipt list to operator.

PERSON INTERVIEWED (Signature): [signature]

TITLE:

INSPECTED BY (Signature): [signature]

TITLE: EPS 3

TIME OF DAY: 1230pm

WEATHER CONDITIONS: 80°F Clear

COMPLIANCE DATE: N/A

Distribution: Facility - White Field Office - Canary Central Office - XC

200-1008

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF SOLID WASTE MANAGEMENT
SOLID WASTE DISPOSAL FACILITY EVALUATION

NAME OF SITE	REGISTRATION NUMBER	DATE
Matlock Bend Loudon County	SNL 53-0203	11-3-10

LOCATION (physical): Hwy 72 N Loudon off I-75

PURPOSE ( ) Complete ( ) Follow-up ( ) Complaint (X) Other Slide

OWNER/OPERATOR: Loudon Co / Santek operating

TYPE OF FACILITY (X) CLASS 1 ( ) CLASS II ( ) CLASS III ( ) CLASS IV

		V1	V2
Inadequate vector control	8010		
Access not limited to operating hours	8020		
Inadequate artificial or natural barrier	8030		
Inadequate information signs	8040		
Unsatisfactory access road(s)/parking area(s)	8050		
Certified personnel not present during operating hours	8060		
Unapproved salvaging of waste	8070		
Evidence of open burning	8080		
Inadequate fire protection	8090		
Unsatisfactory litter control	8110		
Inadequate employee facilities	8120		
No communication devices	8130		
Inadequate operating equipment	8140		
Unavailability of backup equipment	8150		
Unavailability of cover material	8160		
Inadequate maintenance of runon/runoff system(s)	8170		
Inadequate erosion control	8180		
Inadequate dust control	8190		
Unauthorized waste accepted	8210		
Unapproved special waste accepted	8220		
Tires improperly handled	8230		
Medical waste improperly handled	8240		
Dead animals improperly handled	8250		
Washout of solid waste	8270		✓
No permanent benchmark	8280		
Inadequate random inspection program	8290		
Mishandling of special waste	8300		
Buffer zone standard violated	8310		
Inadequate maintenance of leachate management system	8320		

		V1	V2
Leachate improperly managed	8330		
Inadequate leachate collection system	8340		
Leachate observed at the site	8350		
Leachate entering runoff	8360		
Leachate entering a water course	8370		
Inadequate gas migration control system	8380		
Inadequate maintenance of gas migration control system	8390		
Potential for explosions or uncontrolled fires	8420		
Waste not confined to a manageable area	8430		
Improper spreading of waste	8440		
Improper compacting of waste	8450		
Unsatisfactory initial cover	8460		
Unsatisfactory intermediate cover	8470		
Unsatisfactory final cover	8480		
Excessive pooling of water	8490		
Unsatisfactory stabilization of cover	8510		
Dumping of waste into water	8520		
Unsatisfactory records or reports	8530		
Groundwater monitoring system improperly maintained	8540		
Operation does not correspond with engineering plans	8570		
Operation does not correspond with permit condition(s)	8580		
Permit, plans, operating manual not available	8590		
No operating scales	8610		

COMMENTS: Self reported slide most recent area. Some of liner being pulled back into another lined area. Watch new cell 1st lift. Monitor + not damage plastic. Berm above ditch to pond. Placed pumps on site to direct liquids to leach to lines. Stability issues for what slide. Use caution men + machinery. Operator hauling / sludge customer to another landfill. Keep inspector informed.

[illegible handwritten line]

Lights + environmental controls in Arnold's Prg 24 hrs/day - well ok's

PERSON INTERVIEWED (Signature): Matt Dallas

INSPECTED BY (Signature): [signature]

TITLE:

TITLE: EPS 3

TIME OF DAY: 10:30am

WEATHER CONDITIONS: 60° Rain Expect

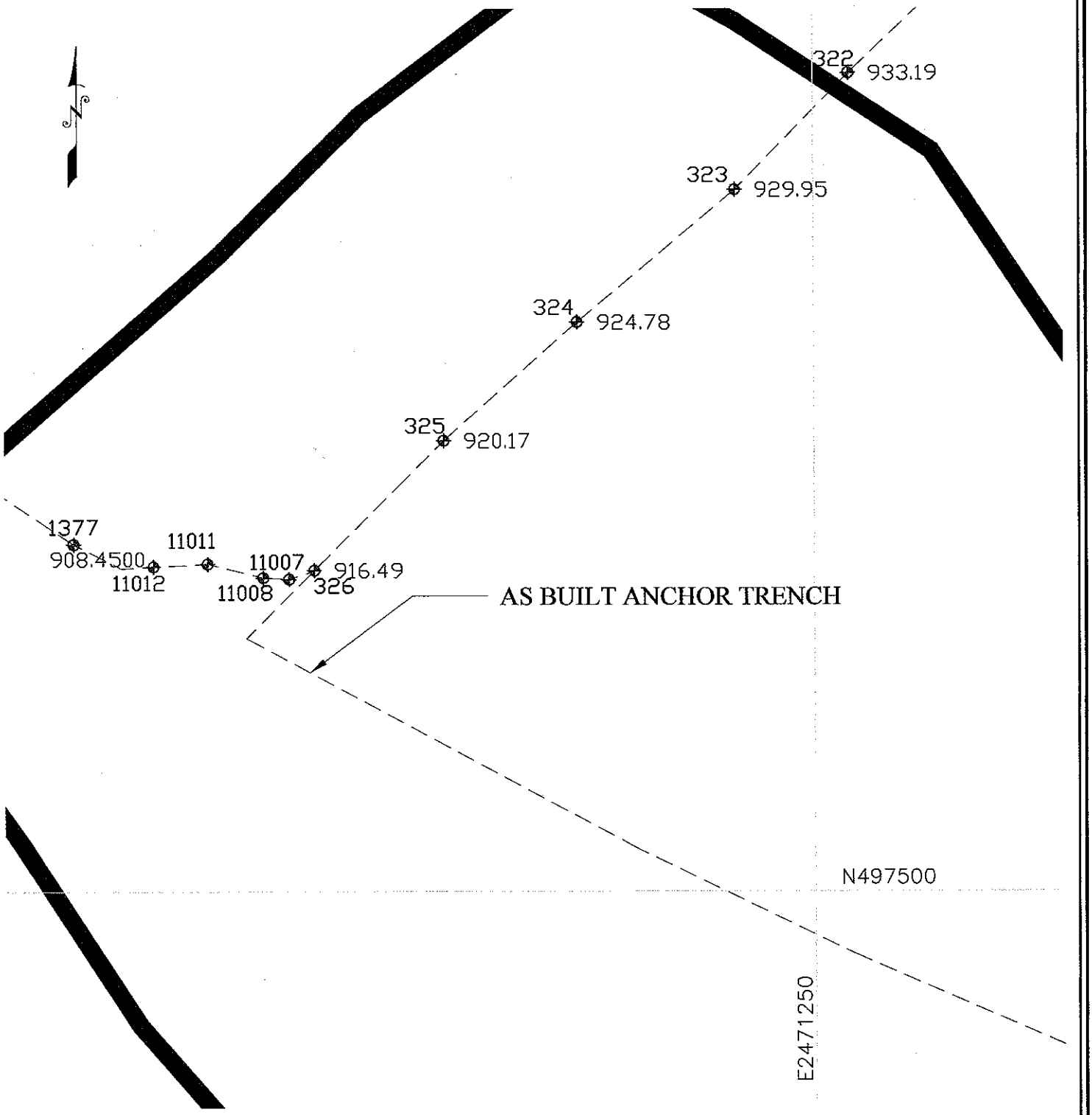
COMPLIANCE DATE: CRM to be held

Distribution: Facility - White Field Office - Canary Central Office - XC

CN-0761 (Rev. 7-98) RDAs 2202 and 2499

Appendix C

Anchor Trench Survey Results



ANCHOR TRENCH COMPARISION

DRAFT

MATLOCK BEND LANDFILL
LOUDON COUNTY, TENNESSEE

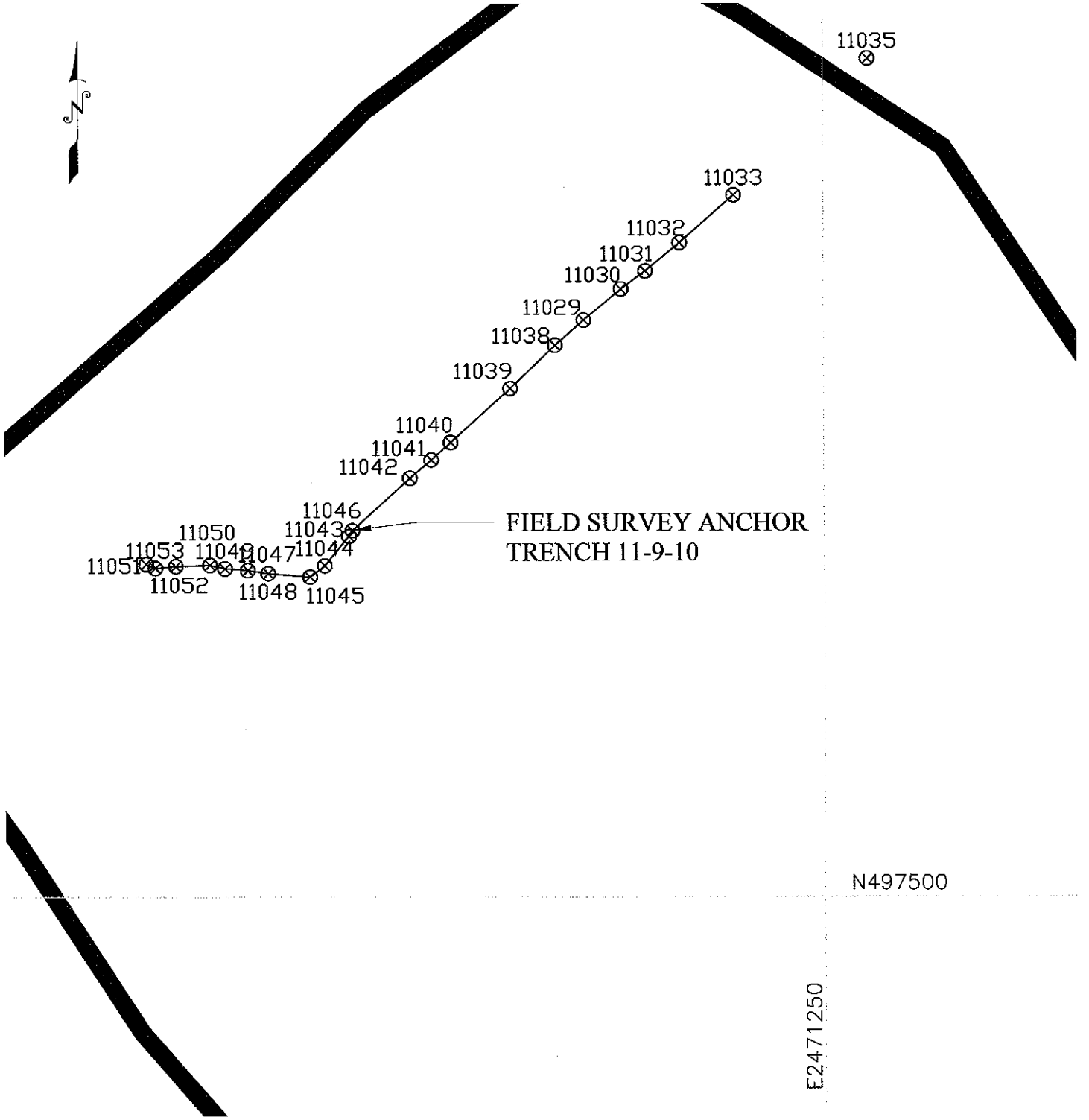
DRAWN BY: M.W.	SCALE: N.T.S.	DATE: 11/12/10
CHECKED BY: RV	APPROVED BY: RDB	

SANTEK ENVIRONMENTAL
650 25TH STREET NW
SUITE 100
CLEVELAND, TENNESSEE

LINER COMPARISON
file dwg. no.

1/3
drawing number

200-1024
job no.



ANCHOR TRENCH COMPARISION

DRAFT

MATLOCK BEND LANDFILL
LOUDON COUNTY, TENNESSEE

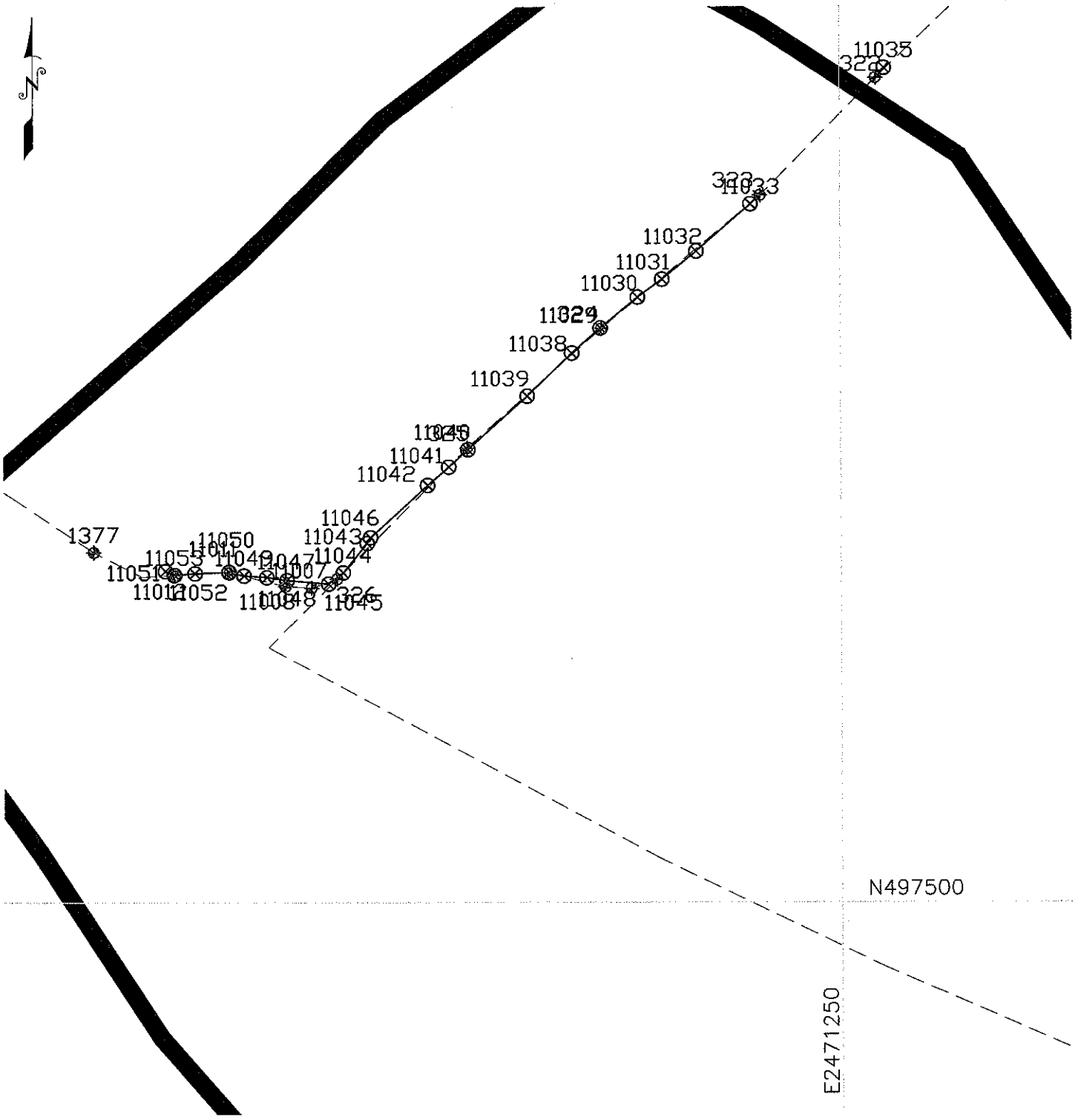
DRAWN BY: M.W.	SCALE: N.T.S.	DATE: 11/12/10
CHECKED BY: RV	APPROVED BY: RDB	

SANTEK ENVIRONMENTAL INC
650 25TH STREET NW
SUITE 100
CLEVELAND, TENNESSEE

LINER COMPARSION
file dwg. no.

2/3
drawing number

200-1024
job no.



⊗ 11-11-10 FIELD TOPO

⊗ AS BUILT ANCHOR TRENCH

ANCHOR TRENCH COMPARISION

DRAFT

MATLOCK BEND LANDFILL
LOUDON COUNTY, TENNESSEE

DRAWN BY: M.W.	SCALE: N.T.S.	DATE: 11/12/10
CHECKED BY: RV	APPROVED BY: RDB	

SANTEK ENVIRONMENTAL INC

650 25TH STREET NW
SUITE 100
CLEVELAND, TENNESSEE

LINER COMPARISON
file dwg. no.

3/3
drawing number

200-1024
job no.

G:\WORK\LOUDON\200-1024\LINER COMPARISON.dwg, 11/12/2010 11:17:30 AM

Appendix D

Leachate Generation and Precipitation Records

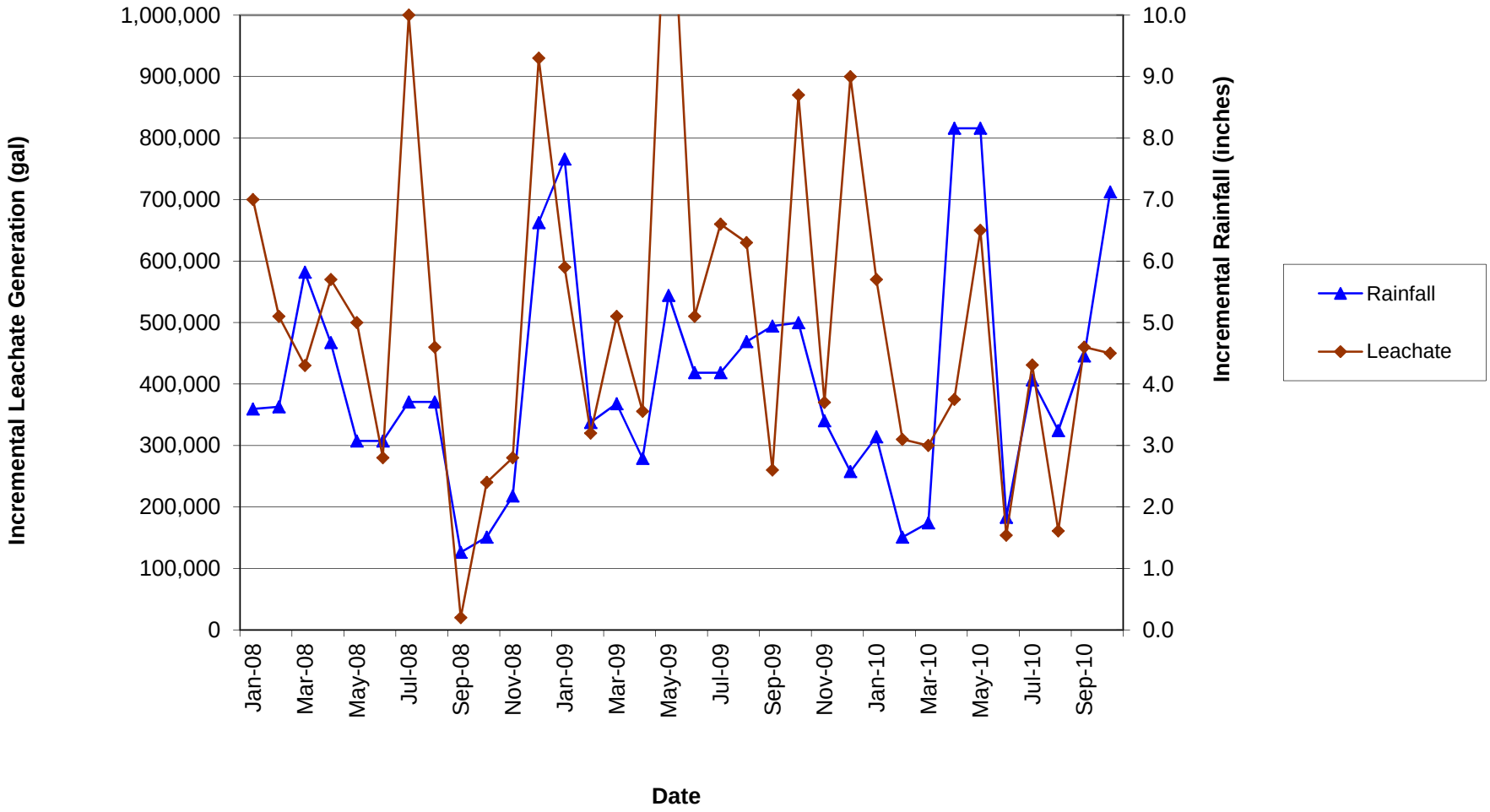
Tables

Matlock Bend Landfill
Leachate and Rainfall Summary

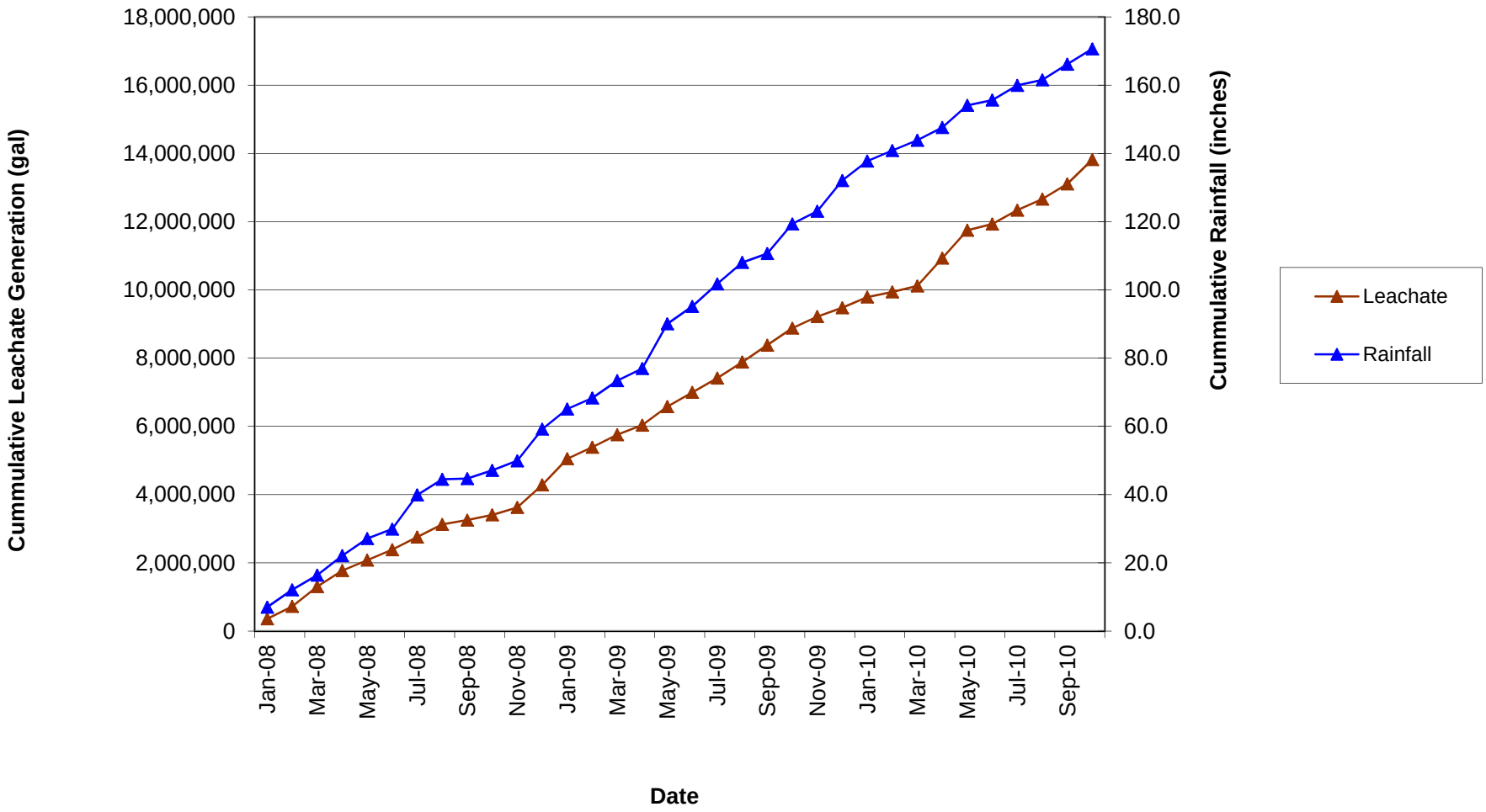
Date	Rainfall (gal)	Accum (gal)	Leachate (gal)	Accum (gal)
Jan-08	7.0	7.0	359,404	359,404
Feb-08	5.1	12.1	362,885	722,289
Mar-08	4.3	16.4	581,829	1,304,118
Apr-08	5.7	22.1	467,310	1,771,428
May-08	5.0	27.1	307,266	2,078,694
Jun-08	2.8	29.9	307,266	2,385,960
Jul-08	10.0	39.9	370,812	2,756,772
Aug-08	4.6	44.5	370,812	3,127,584
Sep-08	0.2	44.7	126,151	3,253,735
Oct-08	2.4	47.1	150,881	3,404,616
Nov-08	2.8	49.9	217,804	3,622,420
Dec-08	9.3	59.2	662,487	4,284,907
Jan-09	5.9	65.1	765,834	5,050,741
Feb-09	3.2	68.3	337,425	5,388,166
Mar-09	5.1	73.4	367,983	5,756,149
Apr-09	3.6	77.0	278,909	6,035,058
May-09	13.1	90.1	543,988	6,579,046
Jun-09	5.1	95.2	418,400	6,997,446
Jul-09	6.6	101.8	418,400	7,415,846
Aug-09	6.3	108.1	468,862	7,884,708
Sep-09	2.6	110.7	494,208	8,378,916
Oct-09	8.7	119.4	499,696	8,878,612
Nov-09	3.7	123.1	340,281	9,218,893
Dec-09	9.0	132.1	257,558	9,476,451
Jan-10	5.7	137.8	313,996	9,790,447
Feb-10	3.1	140.9	150,798	9,941,245
Mar-10	3.0	143.9	174,165	10,115,410
Apr-10	3.8	147.6	816,001	10,931,411
May-10	6.5	154.1	816,001	11,747,412
Jun-10	1.5	155.6	183,224	11,930,636
Jul-10	4.3	160.0	406,479	12,337,115
Aug-10	1.6	161.6	324,250	12,661,365
Sep-10	4.6	166.2	445,695	13,107,060
Oct-10	4.5	170.7	712,429	13,819,489

Figures

Matlock Bend Landfill
Rainfall and Leachate Generation



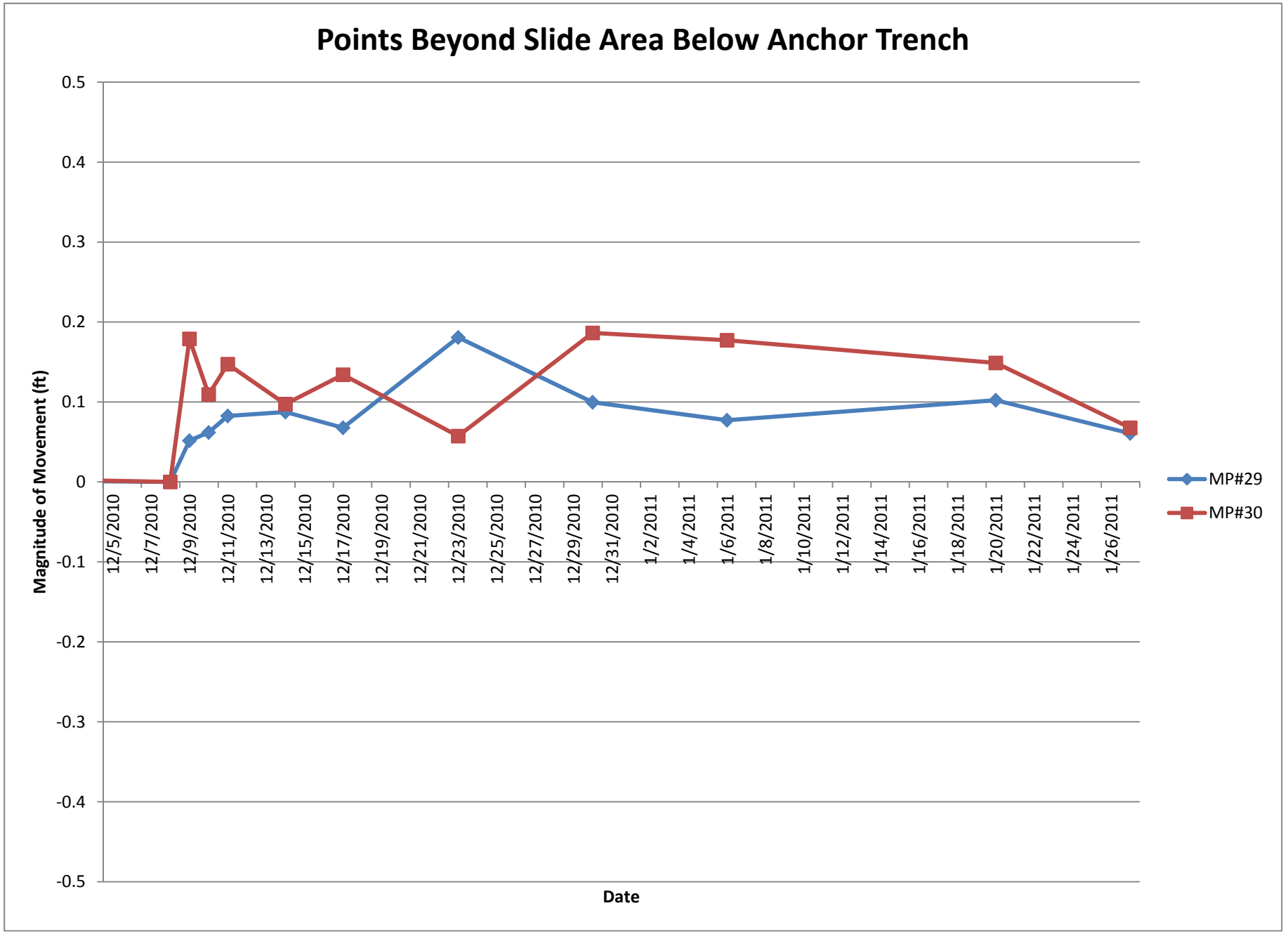
Matlock Bend Landfill
Rainfall and Leachate Generation



Appendix E

Slope Monitoring Point Records

Figures


Points Beyond Slide Area Below Anchor Trench
Magnitude of Movement (ft)
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
12/5/2010
12/7/2010
12/9/2010
12/11/2010
12/13/2010
12/15/2010
12/17/2010
12/19/2010
12/21/2010
12/23/2010
12/25/2010
12/27/2010
12/29/2010
12/31/2010
1/2/2011
1/4/2011
1/6/2011
1/8/2011
1/10/2011
1/12/2011
1/14/2011
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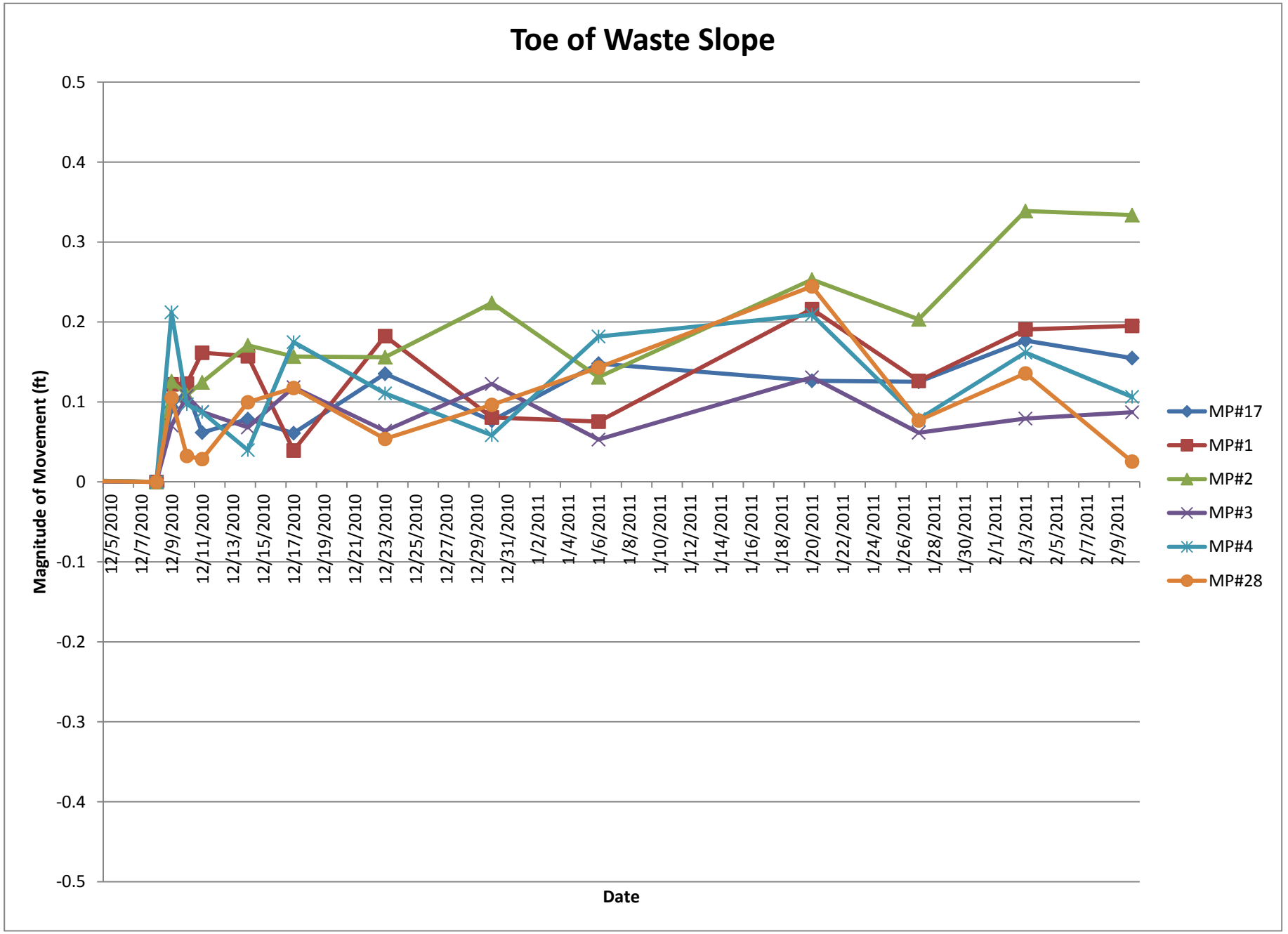
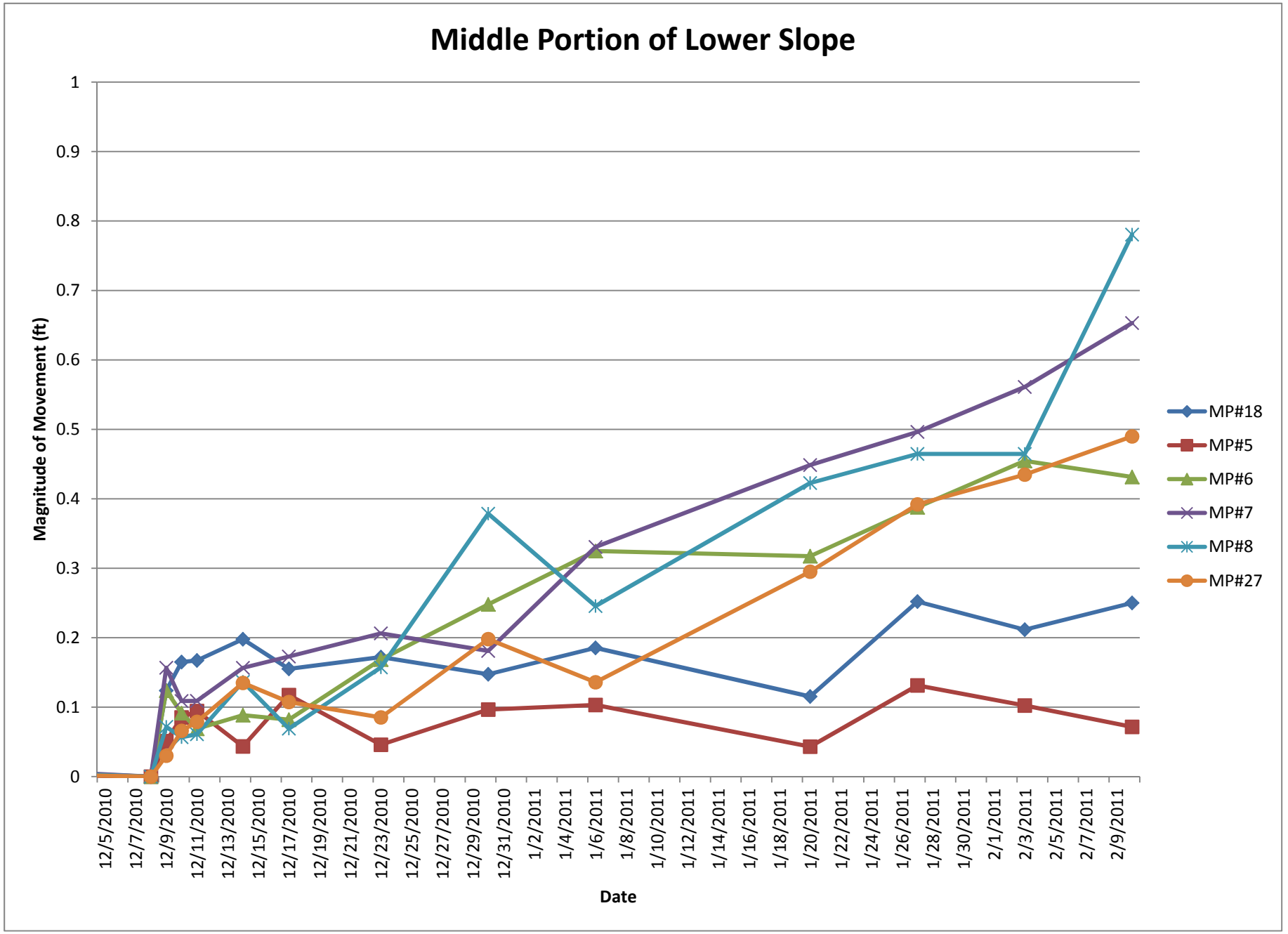
1/24/2011
1/26/2011
Date
MP#29
MP#30


Toe of Waste Slope
Magnitude of Movement (ft)
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
12/5/2010
12/7/2010
12/9/2010
12/11/2010
12/13/2010
12/15/2010
12/17/2010
12/19/2010
12/21/2010
12/23/2010
12/25/2010
12/27/2010
12/29/2010
12/31/2010
1/2/2011
1/4/2011
1/6/2011
1/8/2011
1/10/2011
1/12/2011
1/14/2011
1/16/2011
1/18/2011
1/20/2011
1/22/2011
1/24/2011
1/26/2011
1/28/2011
1/30/2011
2/1/2011
2/3/2011
2/5/2011
2/7/2011
2/9/2011
Date
MP#17
MP#1
MP#2
MP#3
MP#4
MP#28


Middle Portion of Lower Slope
Magnitude of Movement (ft)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
12/5/2010
12/7/2010
12/9/2010
12/11/2010
12/13/2010
12/15/2010
12/17/2010
12/19/2010
12/21/2010
12/23/2010
12/25/2010
12/27/2010
12/29/2010
12/31/2010
1/2/2011
1/4/2011
1/6/2011
1/8/2011
1/10/2011
1/12/2011
1/14/2011
1/16/2011
1/18/2011
1/20/2011
1/22/2011
1/24/2011
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1/30/2011
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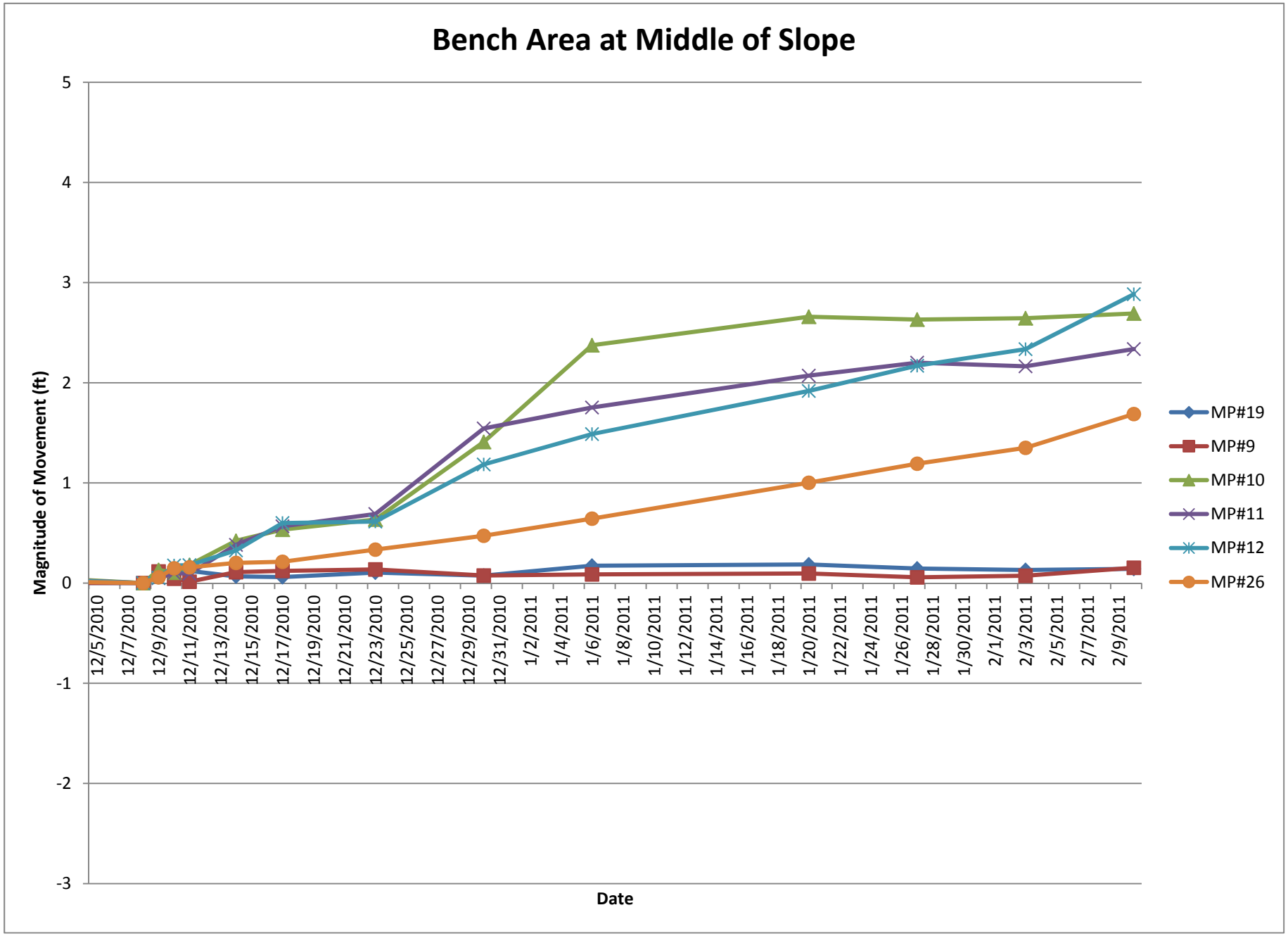
MP#18
MP#5
MP#6
MP#7
MP#8
MP#27


Bench Area at Middle of Slope
Magnitude of Movement (ft)
5
4
3
2
1
0
-1
-2
-3
12/5/2010
12/7/2010
12/9/2010
12/11/2010
12/13/2010
12/15/2010
12/17/2010
12/19/2010
12/21/2010
12/23/2010
12/25/2010
12/27/2010
12/29/2010
12/31/2010
1/2/2011
1/4/2011
1/6/2011
1/8/2011
1/10/2011
1/12/2011
1/14/2011
1/16/2011
1/18/2011
1/20/2011
1/22/2011
1/24/2011
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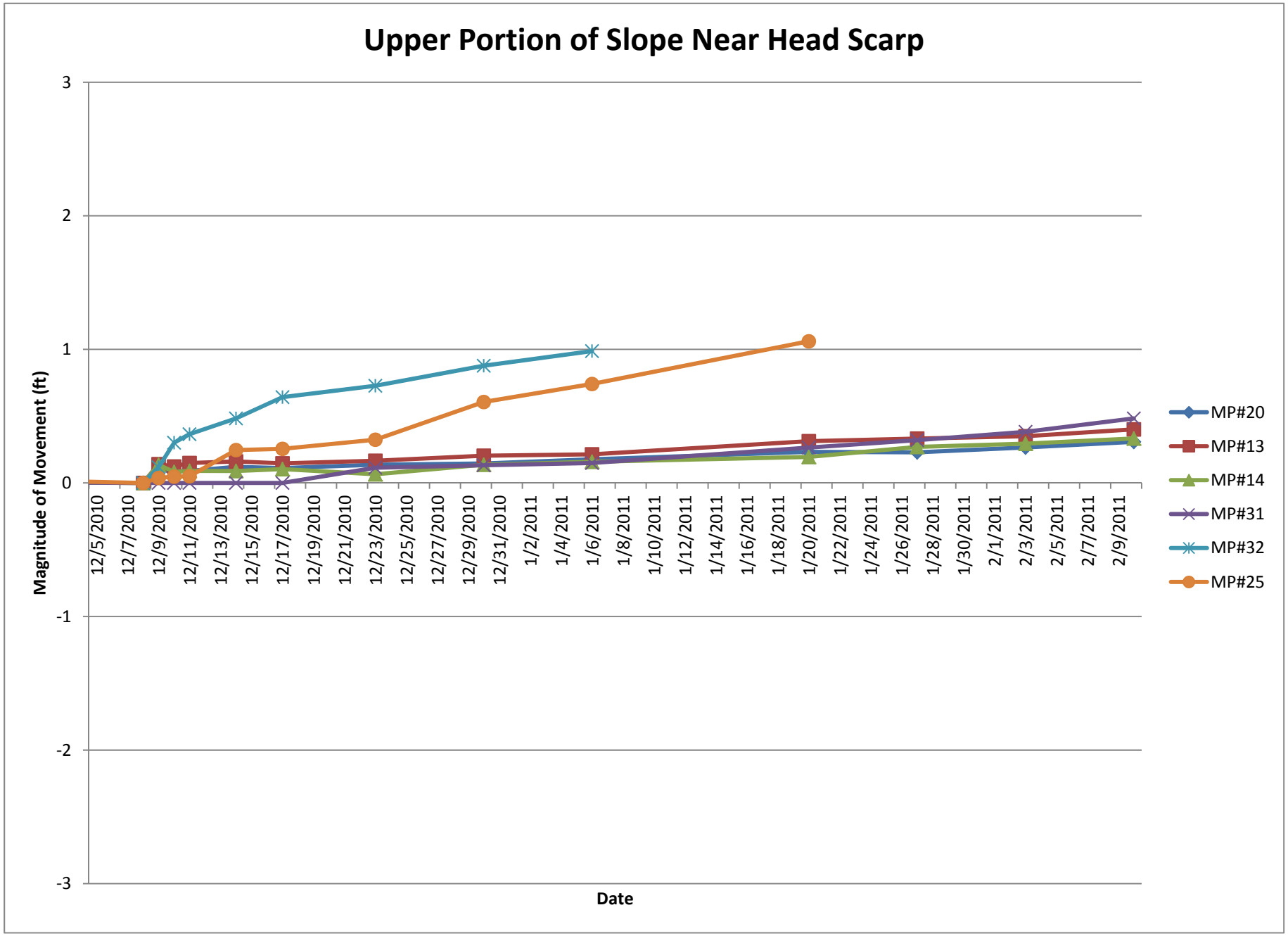
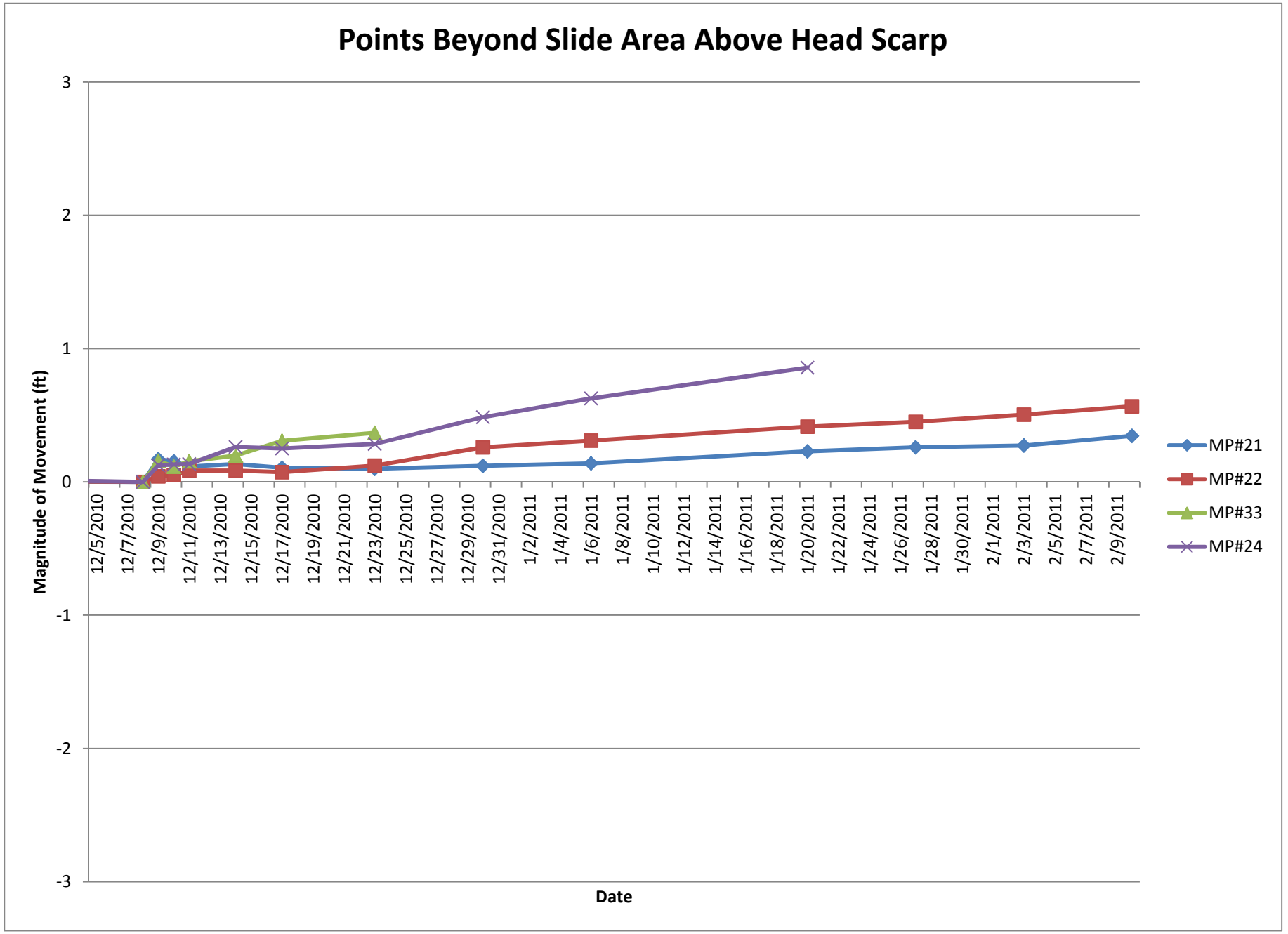
MP#19
MP#9
MP#10
MP#11
MP#12
MP#26


Upper Portion of Slope Near Head Scarp
Magnitude of Movement (ft)
3
2
1
0
-1
-2
-3
12/5/2010
12/7/2010
12/9/2010
12/11/2010
12/13/2010
12/15/2010
12/17/2010
12/19/2010
12/21/2010
12/23/2010
12/25/2010
12/27/2010
12/29/2010
12/31/2010
1/2/2011
1/4/2011
1/6/2011
1/8/2011
1/10/2011
1/12/2011
1/14/2011
1/16/2011
1/18/2011
1/20/2011
1/22/2011
1/24/2011
1/26/2011
1/28/2011
1/30/2011
2/1/2011
2/3/2011
2/5/2011
2/7/2011
2/9/2011
Date
MP#20
MP#13
MP#14
MP#31
MP#32
MP#25


Points Beyond Slide Area Above Head Scarp
Magnitude of Movement (ft)
3
2
1
0
-1
-2
-3
12/5/2010
12/7/2010
12/9/2010
12/11/2010
12/13/2010
12/15/2010
12/17/2010
12/19/2010
12/21/2010
12/23/2010
12/25/2010
12/27/2010
12/29/2010
12/31/2010
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1/4/2011
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1/16/2011
1/18/2011
1/20/2011
1/22/2011
1/24/2011
1/26/2011
1/28/2011
1/30/2011
2/1/2011
2/3/2011
2/5/2011
2/7/2011
2/9/2011
Date
MP#21
MP#22
MP#33
MP#24

Appendix F

Slope Stability Calculation Results

Geosyntec
consultants

COMPUTATION COVER SHEET

Client: **LCSWDC** Project: **Matlock Bend Landfill Waste Failure**
Loudon County, TN

Project/ Proposal No.: **GG4773**
Task No. **01**

Title of Computations: **Slope Stability Analyses**

Computations by:	Signature		Feb. 11, 2011
	Printed Name	Rodolfo Sancio	Date
	Title	Senior Engineer	
Assumptions and Procedures Checked by: (peer reviewer)	Signature		Feb. 14, 2011
	Printed Name	Jill Simons	Date
	Title	Project Engineer	
Computations Checked by:	Signature		Feb. 15, 2011
	Printed Name	Dimitrios Lekkakis	Date
	Title	Staff Engineer	
Computations backchecked by: (originator)	Signature		Feb. 16, 2011
	Printed Name	Rodolfo Sancio	Date
	Title	Senior Engineer	
Approved by: (pm or designate)	Signature		Feb. 16, 2011
	Printed Name	Robert Bachus	Date
	Title	Principal	

Approval notes:

Revisions (number and initial all revisions)

No.	Sheet	Date	By	Checked by	Approval

BACKGROUND

A waste slope failure (failure) occurred at the Matlock Bend Landfill (MBL or Landfill) in Loudon County, TN (site) on 3 November 2010. The MBL is permitted as a Class I landfill by the Tennessee Department of Environment and Conservation (TDEC) to the Loudon County Solid Waste Disposal Commission (LCSWDC). The MBL is operated by Santek Environmental (Santek) of Cleveland, TN under contract to LCSWDC. Geosyntec Consultants (Geosyntec) was retained by LCSWDC to assess the root cause of the failure and to make short-and long-term recommendations regarding stabilization of failure area.

The failure affected portions of Module B, G, and H of the Landfill. As shown on the photos on Figure 1 and Figure 2 that were taken on 3 November 2010, the failure mass (mass) developed a crescent-shaped head scarp and exhibited a relatively flat (i.e., five percent slope) and hummocky topography between the scarp and the toe.

Santek noted the presence of free water within the slide mass after the failure. Additionally, the consistency of portions of the slide mass was too soft to even allow foot traffic over portions of the waste given the high liquids content of the waste.

Figure 1. View of the Failure Area Near the Toe on 3 November 2010

Figure 3 shows the toe of the slope on 3 November 2010, where "blocks" of waste can be observed. As shown by these three photographs, the waste mass appeared to "flow" down the slope. This observation, coupled with the relatively flat slopes in the failure area, is indicative of translational sliding over a weak plane and not a deep-seated rotational movement.

The material within the failure area consisted of municipal solid waste (MSW) and sludges that had been placed over an approximate two-year time period since Module G was constructed, lined, and placed into service. A portion of the mass slid beyond the limits of the lined Module G and onto unlined ground. Santek immediately constructed a compacted soil berm exhibiting approximately 2 horizontal to 1 vertical (2H:1V) sideslopes to contain the toe of the waste. After the containment berm was constructed, Santek excavated waste from the unlined areas and relocated the excavated waste to a recently lined portion of Module G adjacent to the failure area. When the conditions allowed equipment over the intervening days following the failure, Santek regraded the waste within the failure area (including the head scarp) to achieve a gentle and relatively uniform slope within the failure area. Soil cover was placed over the regraded waste surface.

Figure 2. View of the Failure Area from the Toe on 3 November 2010

Figure 3. View of the Failed Material at the Toe on 3 November 2010

PURPOSE

The purpose of this calculation package is to present the results of slope stability analyses that were conducted to gain insight into the possible failure mechanisms and the root cause of the 3 November 2010 waste slope failure at the MBL. This calculation package also includes the back analysis results that were conducted to develop strength parameters for use to support recommendations for stabilization of Module G and for future waste placement.

SLOPE GEOMETRY

Figure 4 presents a cross-section through the failure area that shows the approximate geometry of the ground surface of the landfill in October 2010 (i.e., about one month prior to the failure). This cross-section also shows the liner grade and the elevation of the waste in 2009. Figure 5 shows an approximate cross-section through the failure

area on 3 November 2010. This surface was developed by combining topographic survey data with visual estimates, as the failure area was too irregular and wet to accommodate a field survey. Figure 6 shows the same cross-section after Santek had regraded the failure area. Figure 6 includes the containment berm that was constructed at the toe of the failure area immediately after the slide.

Written by:	R. Sancio	Date:	Feb 11, 2011	Reviewed by:	J. Simons	Date:	Feb 14, 2011
Client:	LCSWDC	Project	Matlock Bend Landfill Waste Failure	Project/ Proposal No.:	GG4773	Task No.:	01

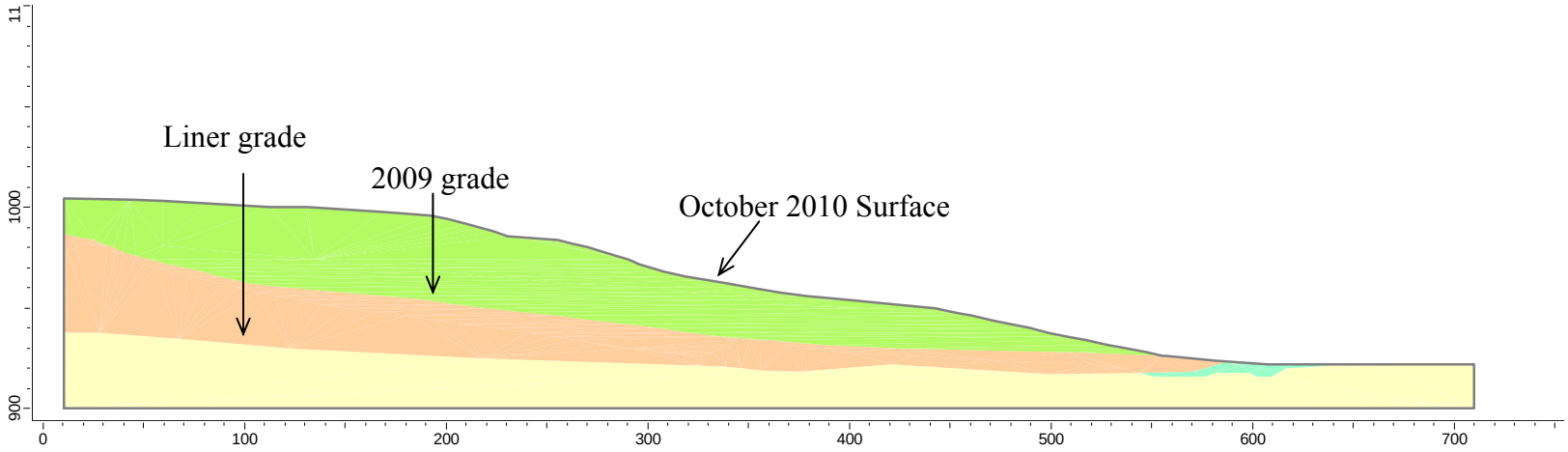

Figure 4. Cross-section Through Centerline of Failure Area Prior to Failure (October 2010)

Written by:	**R. Sancio**	Date:	**Feb 11, 2011**	Reviewed by:	**J. Simons**	Date:	**Feb 14, 2011**
Client:	**LCSWDC**	Project	**Matlock Bend Landfill Waste Failure**	Project/ Proposal No.:	**GG4773**	Task No.:	**01**

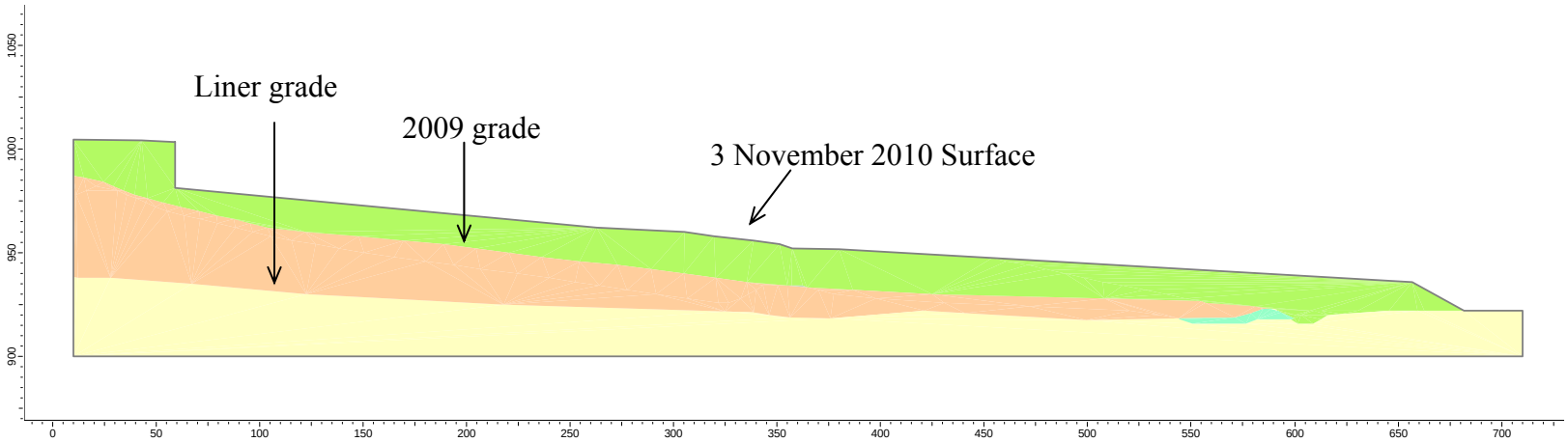

Figure 5. Approximate Cross-section through Centerline of Failure Area after the Failure (November 2010)

Written by:	R. Sancio	Date:	Feb 11, 2011	Reviewed by:	J. Simons	Date:	Feb 14, 2011
Client:	LCSWDC	Project	Matlock Bend Landfill Waste Failure	Project/ Proposal No.:	GG4773	Task No.:	01

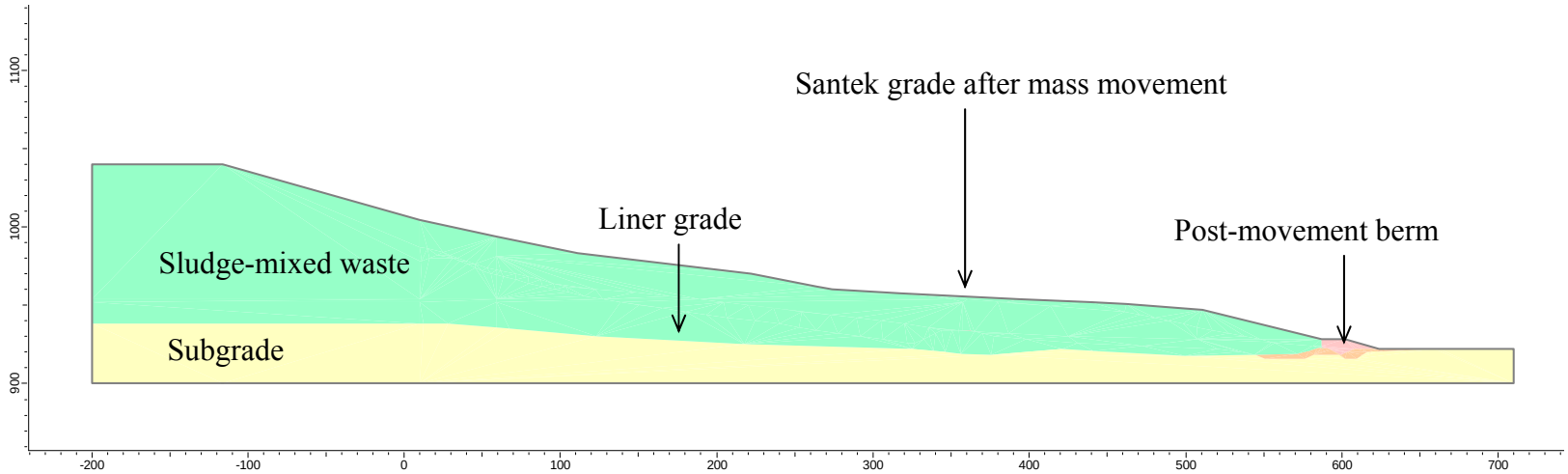

Figure 6. Cross-section through Centerline of Failure Area after Regrading (November 2010)

SLOPE STABILITY CALCULATIONS

Methodology

Limit equilibrium slope stability analyses were conducted by Geosyntec to calculate the factor of safety *(FS)* using the method of slices according to the procedure developed by Spencer [1]. The calculations were carried out using the computer program SLIDE v. 5.044 (Rocscience).

Material Parameters and Slope Geometry

For these calculations, Geosyntec utilized back analyses coupled with experience from previous waste testing and analysis projects to estimate the unit weight and shear strength parameters of the waste. With regards to analysis geometry, Geosyntec considered the following four analysis scenarios: (i) waste geometry immediately before failure; and (ii) waste geometry after post-failure regrading; (iii) waste geometry after stabilization; and (iv) waste geometry after development in accordance with pending Major Modification.

Back Analysis – Waste Geometry Immediately before Failure[1]

For this analysis Geosyntec assumed: (i) the geometry immediately prior to the mass movement (Figure 4) exhibited $FS = 1$; (ii) an elevated liquids level with a piezometric head was present in the slope (see Figure 9); and (iii) the sludge-mixed waste material exhibited characteristics of a frictional material. Analyses were conducted to calculate the friction angle of the sludge-mixed waste at the time of failure assuming that sliding occurred along a shallow circular or translational surface. The analyses were thus conducted to calculate the factor of safety considering the geometry in Figure 4.

Verification Analysis – Waste Geometry upon Regrading

For this analysis Geosyntec assumed: (i) the geometry after regrading was only marginally stable; (ii) the friction angle of the sludge-mixed waste was the value

[1] A large number of additional analyses were conducted to evaluate the elevation of potential translational sliding surfaces as well as friction angles that incorporate the effect of excess pore water pressures that developed in the failed mass prior to sliding. These analysis are not included in this document but provided insight and guidance on potential mechanisms and material strength parameters.

resulting from the back analyses; (iii) a piezometric surface was elevated in the regraded waste due to poor drainage into the leachate collection system (see Figure 11); and (iv) the sliding mechanism could be either circular or translational but should be at the same approximate location as calculated from the back analyses. The analyses were thus conducted to calculate the factor of safety considering the geometry in Figure 6.

Stabilized Grades Analysis - Final Stabilization Geometry

The results of the back analysis verification analyses described above (i.e., location of the critical failure surface and the frictional strength of the weakened waste) were used to calculate the *FS* of the Landfill upon regrading to the proposed final stabilized geometry. The stabilization strategy explicitly (and importantly) considers that adequate drainage provisions are included to permanently lower the elevated liquid levels in the waste. Upon discussion with Santek, a candidate final geometry considers construction of a berm from select solid waste (i.e., MSW that is free of sludge) at the toe of Module G. As shown on Figure 7, the berm will have 3H:1V side slopes and will be constructed to approximately Elevation 945 ft. The elevation of the waste within Module G will then be raised progressively to approximately Elevation 1055 ft in 30-ft thick lifts, incorporating 4H:1V sideslopes and 10-ft wide benches at each 30-ft vertical interval (except that last lift which will be 25-ft high). The first lift would reach Elevation 970 ft. Subsequent staged waste placement considers lifts to Elevation 1000, 1030 and 1055 ft. As shown on Figure 7, a 10-ft wide bench is used for each lift. The analyses were thus conducted to calculate the factor of safety considering the geometry in Figure 7.

The material parameters used in the analyses of the final configuration are summarized in Table 1 and include properties from the back analysis results and values based on Geosyntec experience with MSW testing. The minimum acceptable factor of safety for this interim grading condition is assumed to be FS>1.3.

Analysis of Potential Final Grades – Pending Major Mod Grades

As a final analysis condition, Geosyntec recognizes that Santek has submitted to TDEC a Major Permit Modification application (Major Mod) that is currently in suspended review by TDEC. Analyses were performed to consider whether this proposed grading plan would be adversely impacted by the failure. The analyses were thus conducted to calculate the factor of safety considering the geometry in Figure 8.

The material parameters used in the analyses of the final configuration were the same as those summarized in Table 1 and include properties from the back analysis results and values based on Geosyntec experience with MSW testing. The minimum acceptable factor of safety for this final grading condition is assumed to be $FS \geq 1.5$.

Table 1 Material Parameters used for Calculation of the *FS* of the Final Stabilization Geometry

Material	Unit Weight (pcf)	Shear Strength Parameters	
		c (psf)	φ (^{o})
Sludge-mixed waste above the failure surface	90	0	20
Future Waste	90	τ = 500 psf for $0<\sigma_n<770$ psf, φ = 33º for $\sigma_n>770$ psf	
Waste Berm	90	τ = 500 psf for $0<\sigma_n<770$ psf, φ = 33º for $\sigma_n>770$ psf	

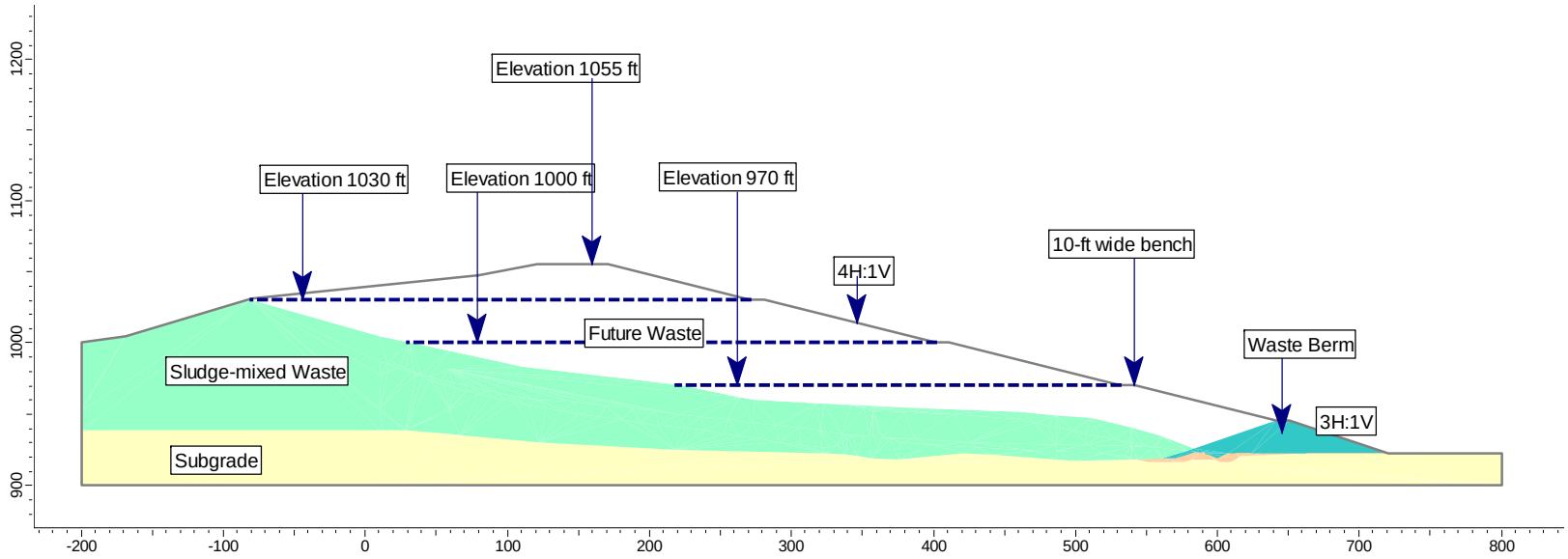

Figure 7. Assumed Geometry for the Stabilized Landfill Condition

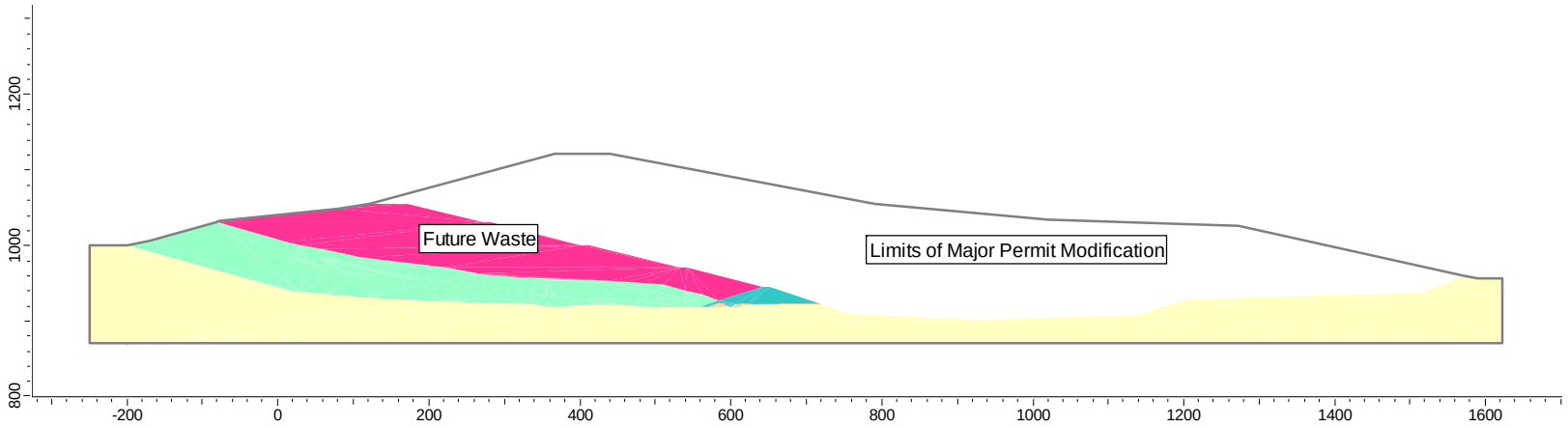

Figure 8. Assumed Geometry for the Major Modification Permit (Major Mod)

Calculation Results

Back Analysis – Waste Geometry prior to Failure

The results of the slope stability analyses in which the October 2010 geometry was used assuming that *FS* = 1.0 (i.e., Back Analysis) are summarized in Table 2. The translational surface at Elevation 948 ft and circular sliding surface is shown in Figure 9 and Figure 10, respectively.

The results of the analysis indicate similarly located critical failure surfaces and that the friction angle of the sludge-mixed waste ranges between approximately 19 and 20 degrees for the condition analyzed.

Table 2 Summary of Scenarios Analyzed – Back Analyis

Sliding Mechanism	φ (^{o}) of sludge-mixed waste
Translational (Figure 9)	19.1
Circular (Figure 10)	20.1 (c = 20 psf)

Verification Analysis – Waste Geometry after Regrading

Figure 11 and Figure 12 present the circular and translational sliding surfaces with lowest calculated factor of safety values for the post-failure regraded geometry. The analyses were conducted using a friction angle for the sludge-mixed waste of 20 degrees and no cohesion intercept. However, the results were noted to be significantly sensitive to the elevation of the piezometric surface and cohesion intercept was noticed.

The calculated FS is 1.16 for the circular mechanism and 1.25 for a horizontal translational surface at Elevation 952 ft. These results essentially verify physical observations in the field and the surface monitoring results of the post-failure regraded slopes. Specifically, the waste appeared to be marginally stable when it exhibited a high liquids level. It is interesting to note that the toe of the slope in the failure area was excavated to an approximate 2H:1V slope and was noted to be relatively stable. However, this slope was also noted to explicitly not have excessive free liquids in the waste. Therefore, Geosyntec believes that these calculation results are consistent with the field performance and observations.

Written by:	R. Sancio	Date:	Feb 11, 2011	Reviewed by:	J. Simons	Date:	Feb 14, 2011
Client:	LCSWDC	Project	Matlock Bend Landfill Waste Failure	Project/ Proposal No.:	GG4773	Task No.:	01

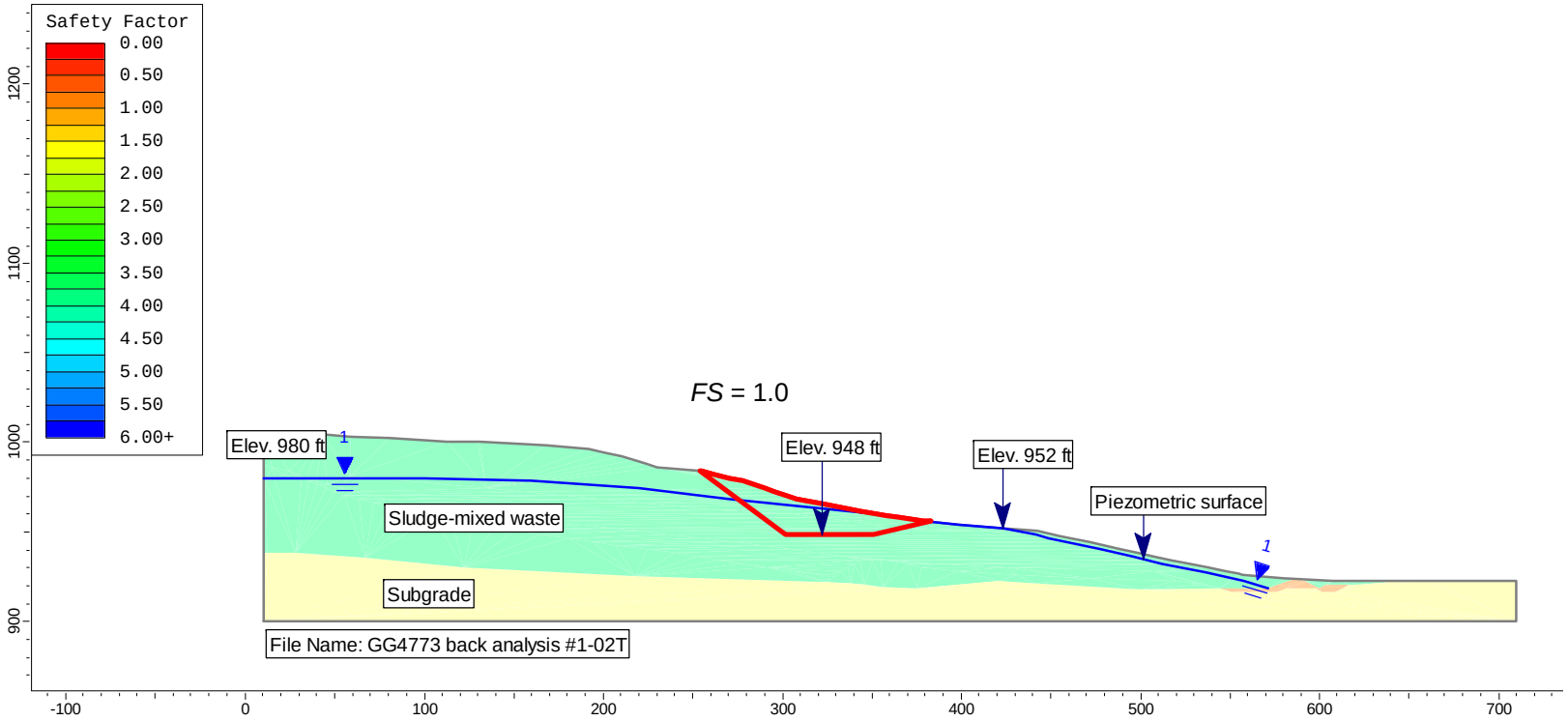

Figure 9. Translational Sliding Surface with *FS* = 1.0 and Assumed Piezometric Surface. φ = 19.1 degrees.

Written by:	R. Sancio	Date:	Feb 11, 2011	Reviewed by:	J. Simons	Date:	Feb 14, 2011
Client:	LCSWDC	Project	Matlock Bend Landfill Waste Failure	Project/ Proposal No.:	GG4773	Task No.:	01

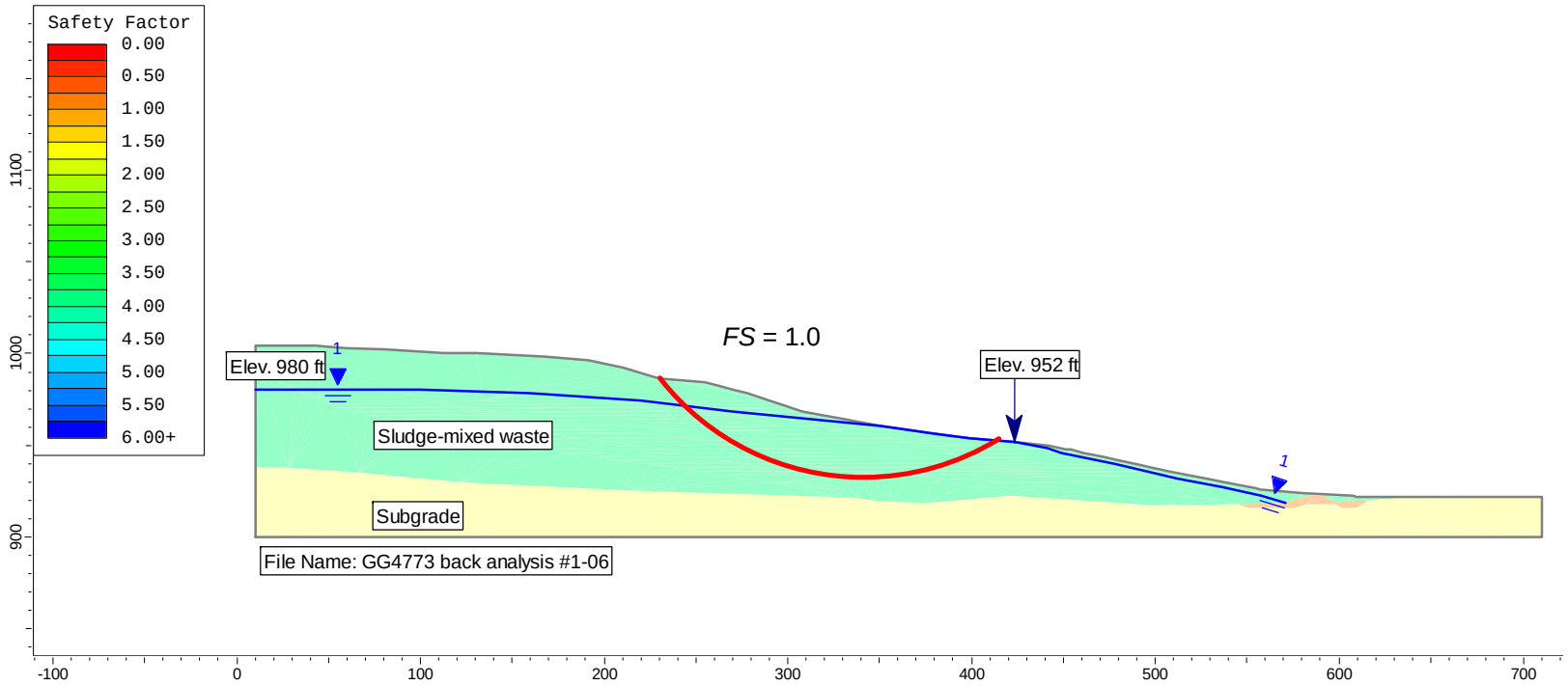

Figure 10. Circular Sliding Surface with *FS* = 1.0 and Assumed Piezometric Surface. φ = 20.1 degrees, c = 20 psf.

Written by:	R. Sancio	Date:	Feb 11, 2011	Reviewed by:	J. Simons	Date:	Feb 14, 2011
Client:	LCSWDC	Project	Matlock Bend Landfill Waste Failure	Project/ Proposal No.:	GG4773	Task No.:	01

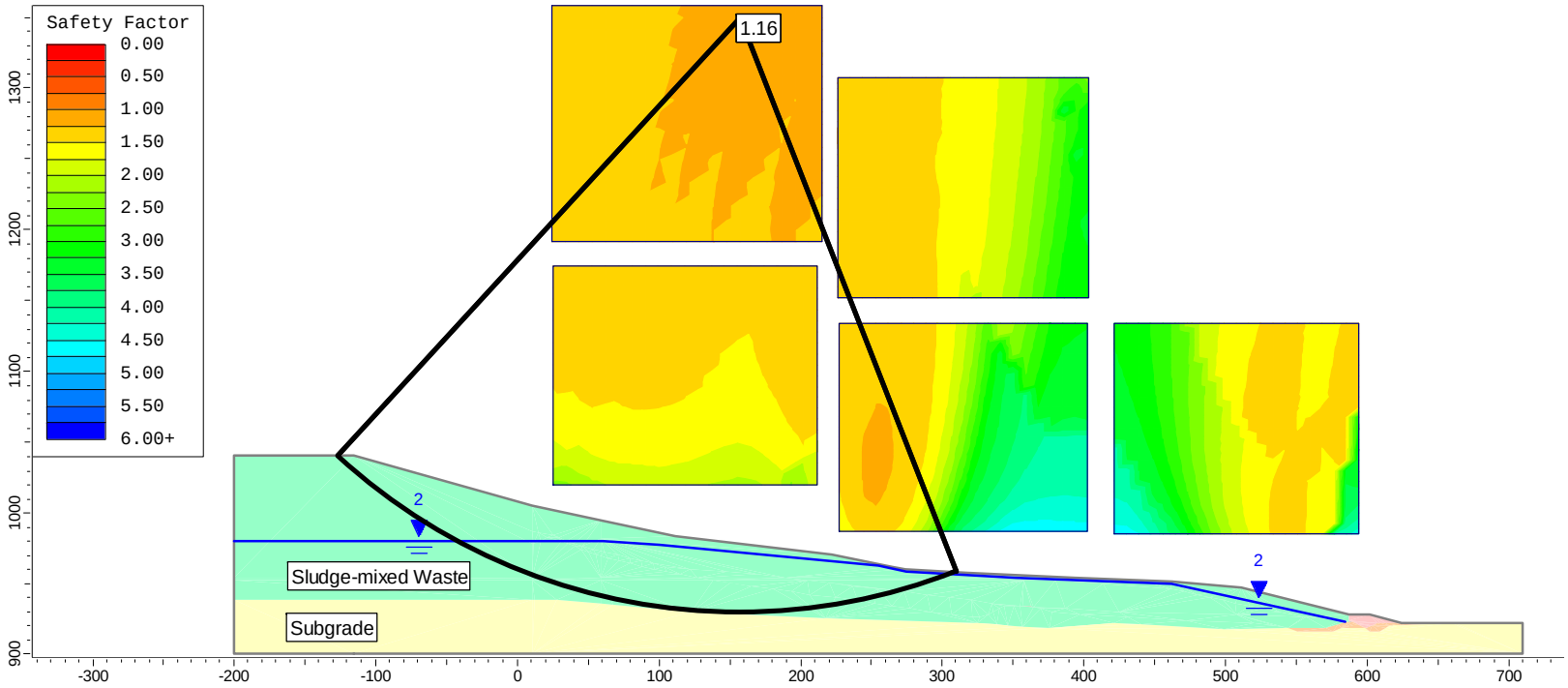

Figure 11. Circular Sliding Surface with Lowest FS for November 2010 Geometry and Assumed Piezometric Surface (after regrading)

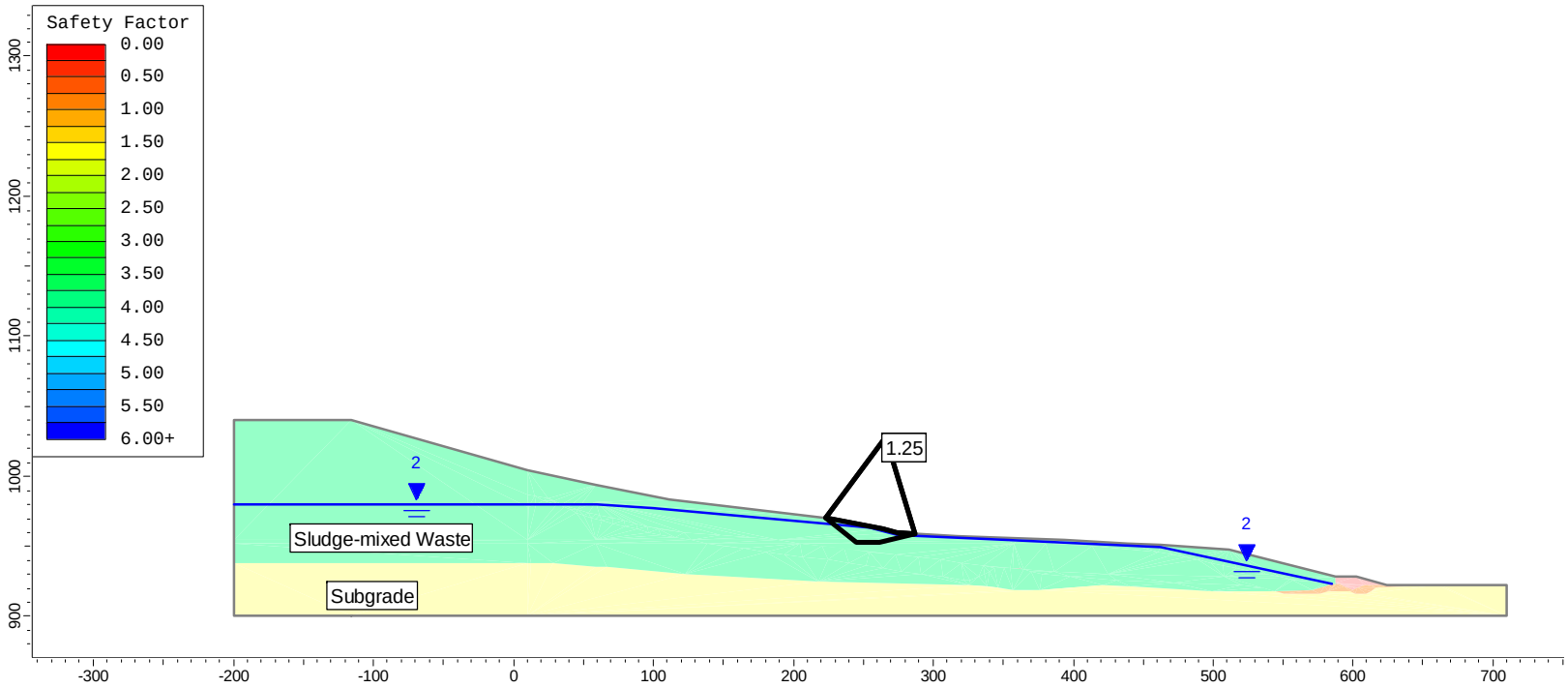

Figure 12. Translational Sliding Surface with Lowest FS for Translation along a Horizontal Plane at Elevation 952 ft and Assumed Failure Surface

Stabilized Grades Analysis - Final Stabilization Geometry

For the proposed waste stabilization, additional waste is proposed to be placed against the toe buttress adjacent the lower reaches of Module G. Waste that was involved in the failure was assumed to exhibit a weakened frictional strength of 20 degrees as calculated from the back analyses. Waste placed as part of the stabilization strategy is assumed to exhibit the frictional strength of "conventional" MSW. Analyses were performed to calculate the *FS* for each proposed stage of waste placement used to develop the final stabilization geometry. As listed on Table 3 and shown on Figure 13 to Figure 16, staged construction of waste placement in Module G to the proposed interim grades meets the minimum factor of safety requirement of 1.3 as long as liquids are allowed controlled. Therefore, these results confirm that the proposed stabilization grades will results in an increase in the calculated stability of Module G and that waste does not have to excavated from the module to achieve a stable geometry, assuming that liquid levels are controlled and significantly reduced.

Table 3 Summary of Scenarios Analyzed for the Final Configuration

Geometry	*FS* (Spencer)
Phase 1: Elevation 970 ft	2.53
Phase 2: Elevation 1000 ft	2.53
Phase 3: Elevation 1030 ft	2.30
Phase 4: Elevation 1055 ft	1.69

Analysis of Potential Final Grades – Pending Major Mod Grades

Calculation results for the potential final grades at the site are presented in Figure 17 and Figure 18. These results indicate that if the grades are established in accordance with the grades identified in the Major Mod, an increase in calculated stability is achieved relative to the *FS* achieved upon implementation of the interim stabilization grades. Once again, this conclusion is predicated on the long-term control of liquid levels at the site. These results are completely anticipated given the frictional character of the waste and the final geometry. Significant additional vertical stress and buttressing are provided through the development of these grades. Therefore, the

proposed Major Mod grading plan will not have any adverse impacts on the stability of Module G. In fact, calculation results indicate that approval and implementation of the Major Mod final grades enhances stability of Module G.

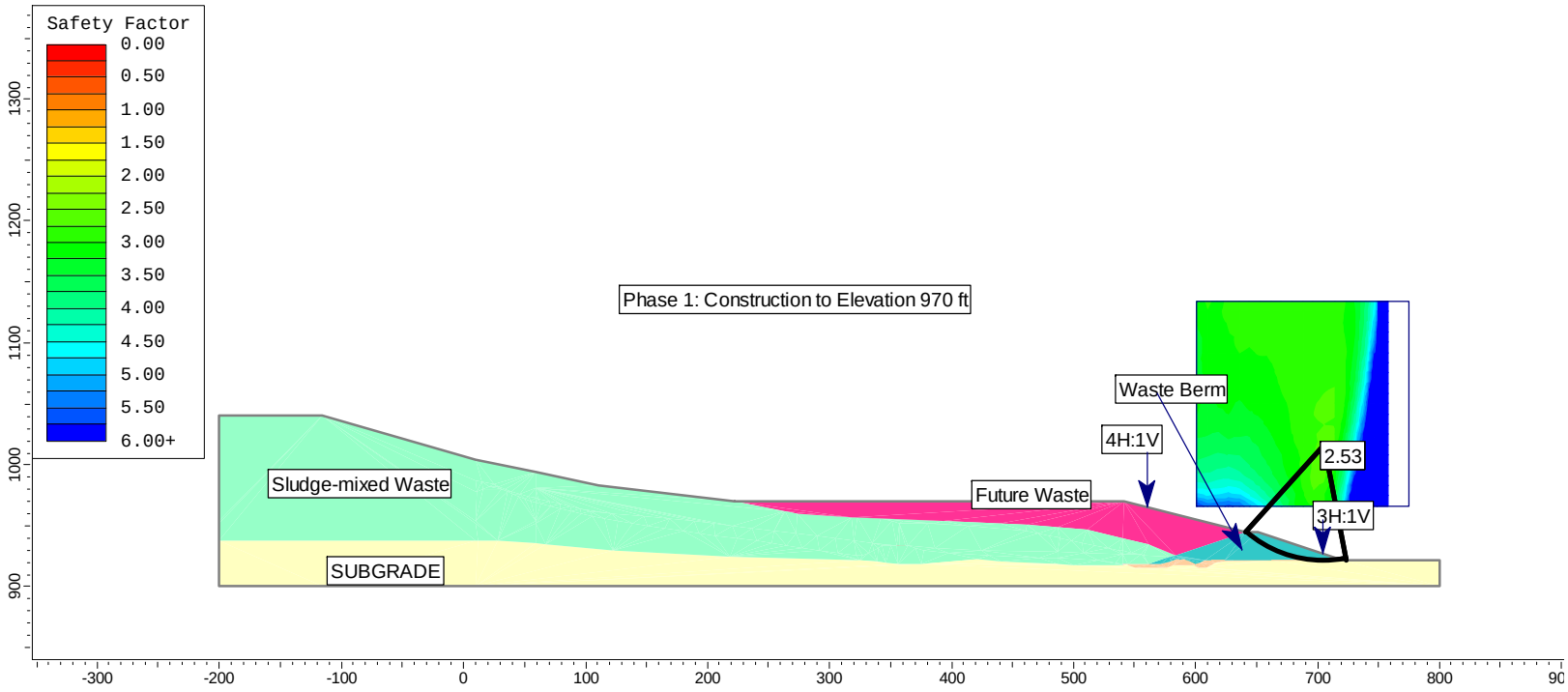

Figure 13. Circular Surface with Lowest *FS* for Final Configuration to Elevation 970 ft

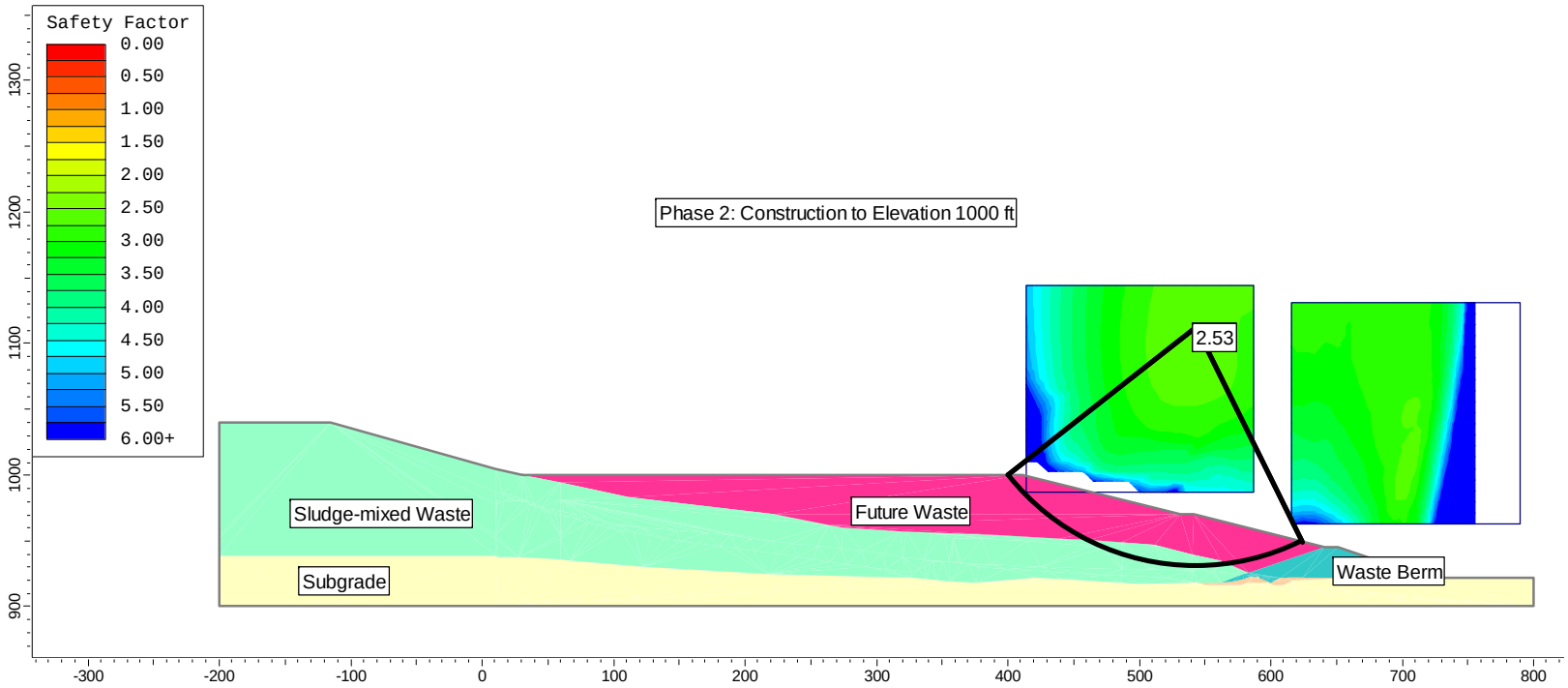

Figure 14. Circular Surface with Lowest *FS* for Final Configuration to Elevation 1000 ft

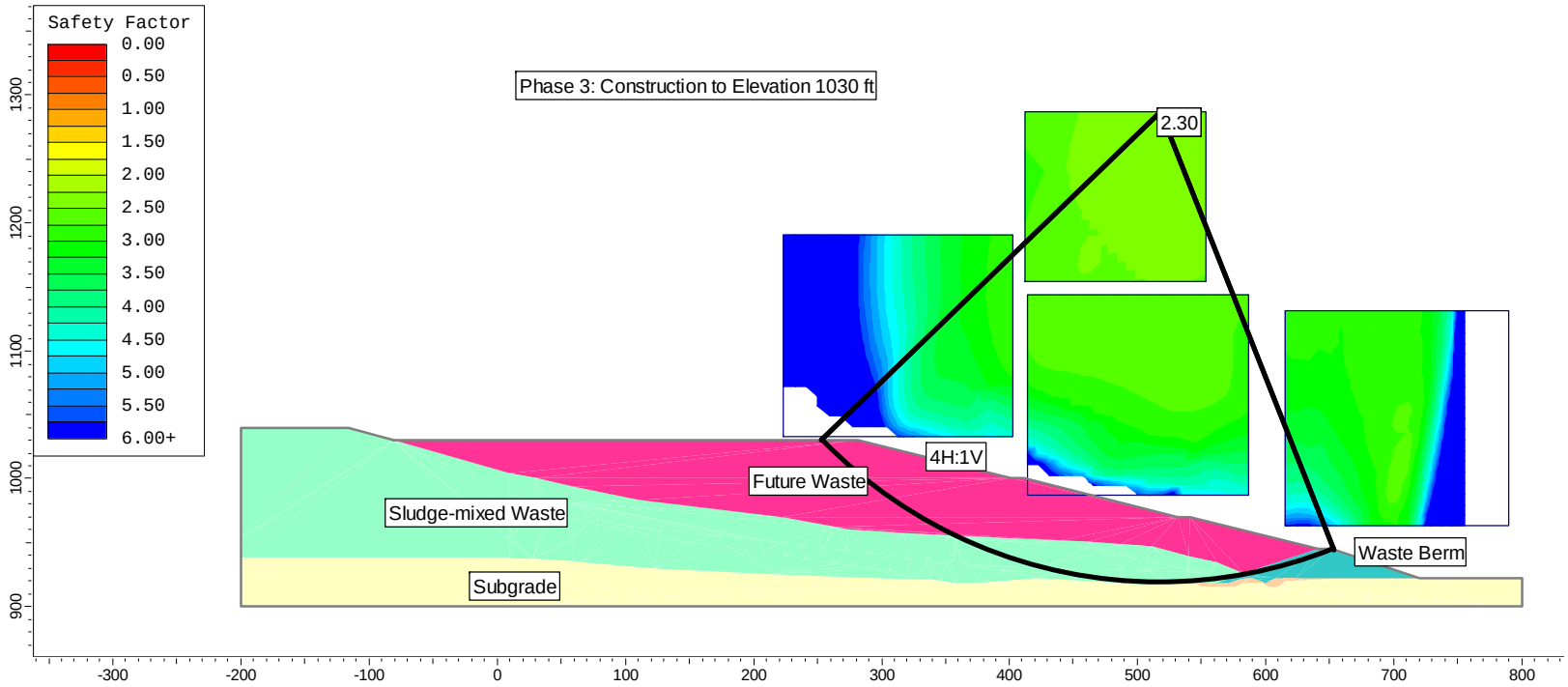

Figure 15. Circular Surface with Lowest *FS* for Final Configuration to Elevation 1030 ft

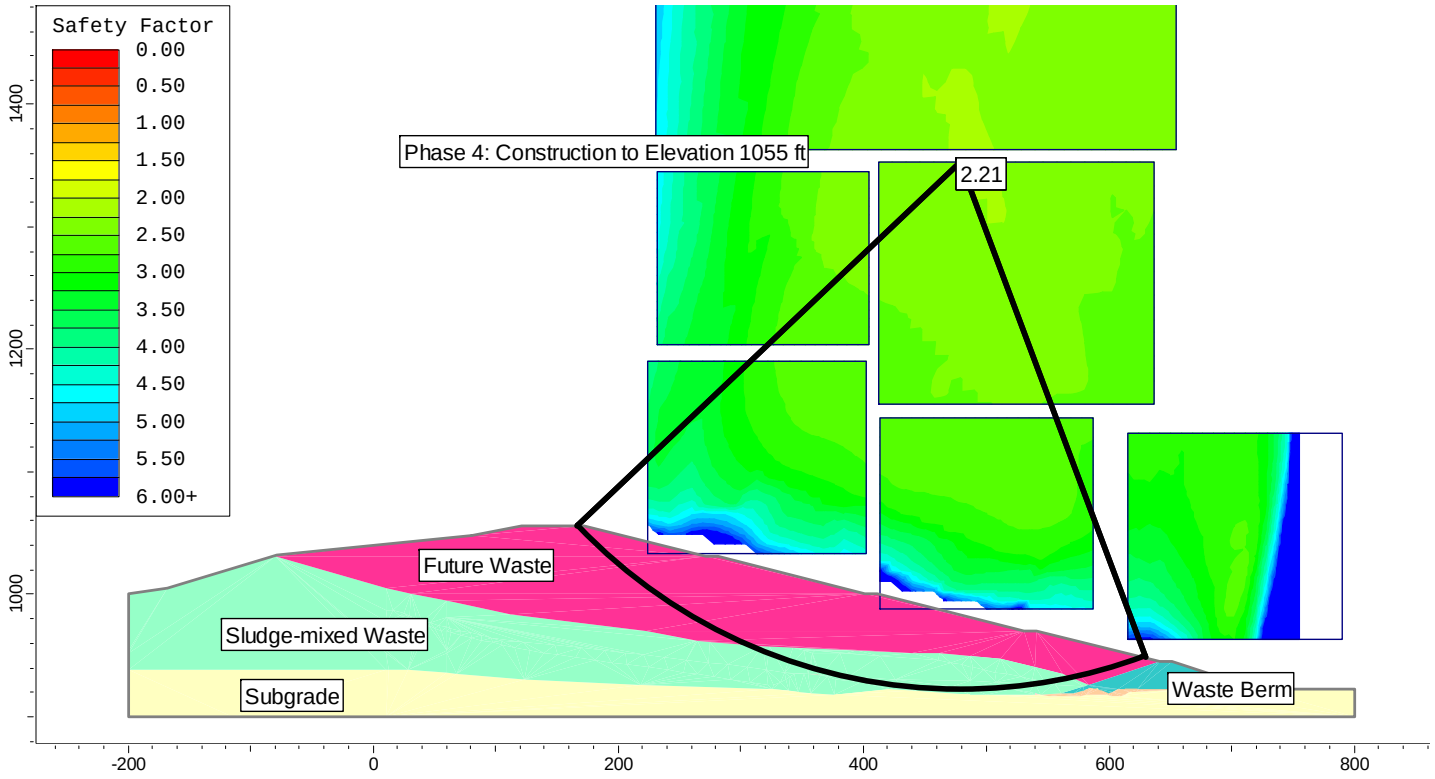

Figure 16. Circular Surface with Lowest *FS* for Final Configuration to Elevation 1055 ft

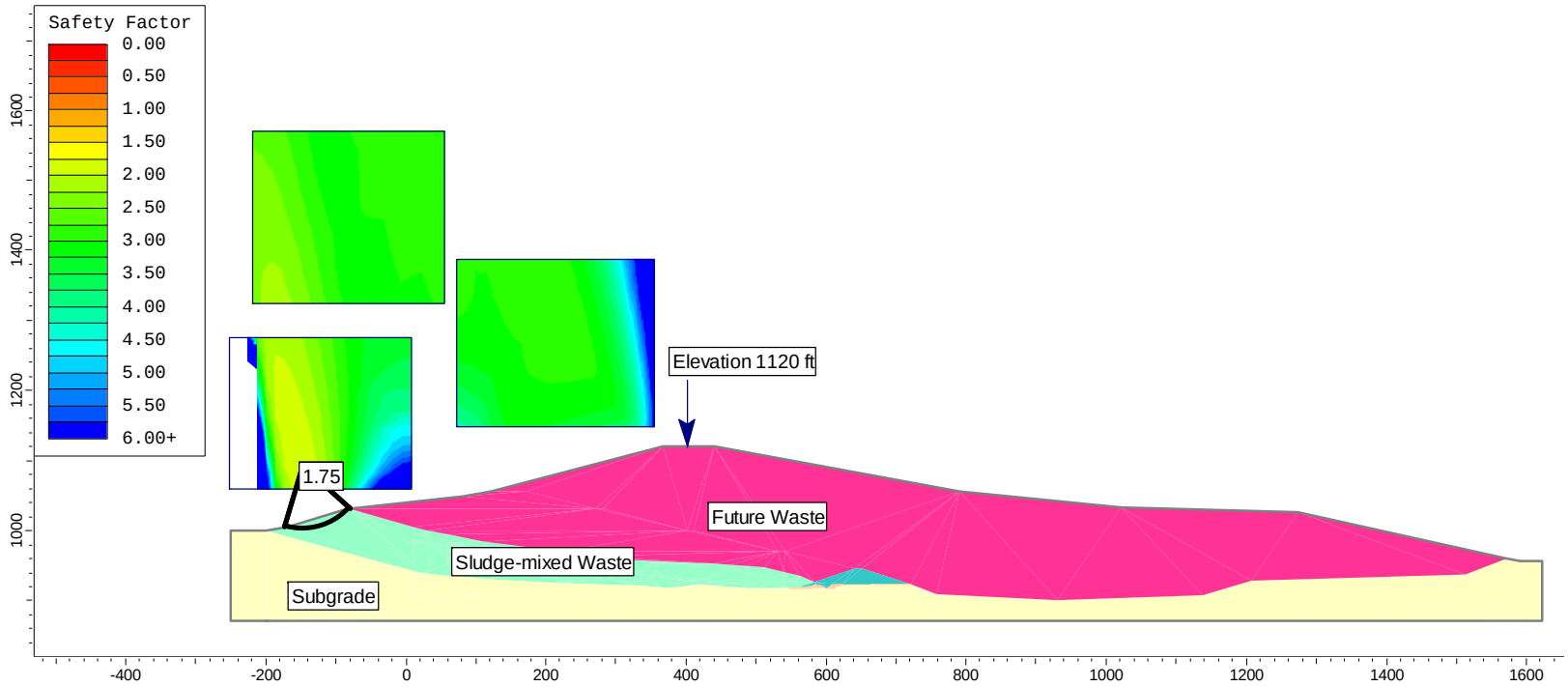

Figure 17. Circular Surface with Lowest *FS* for Major Mod Geometry

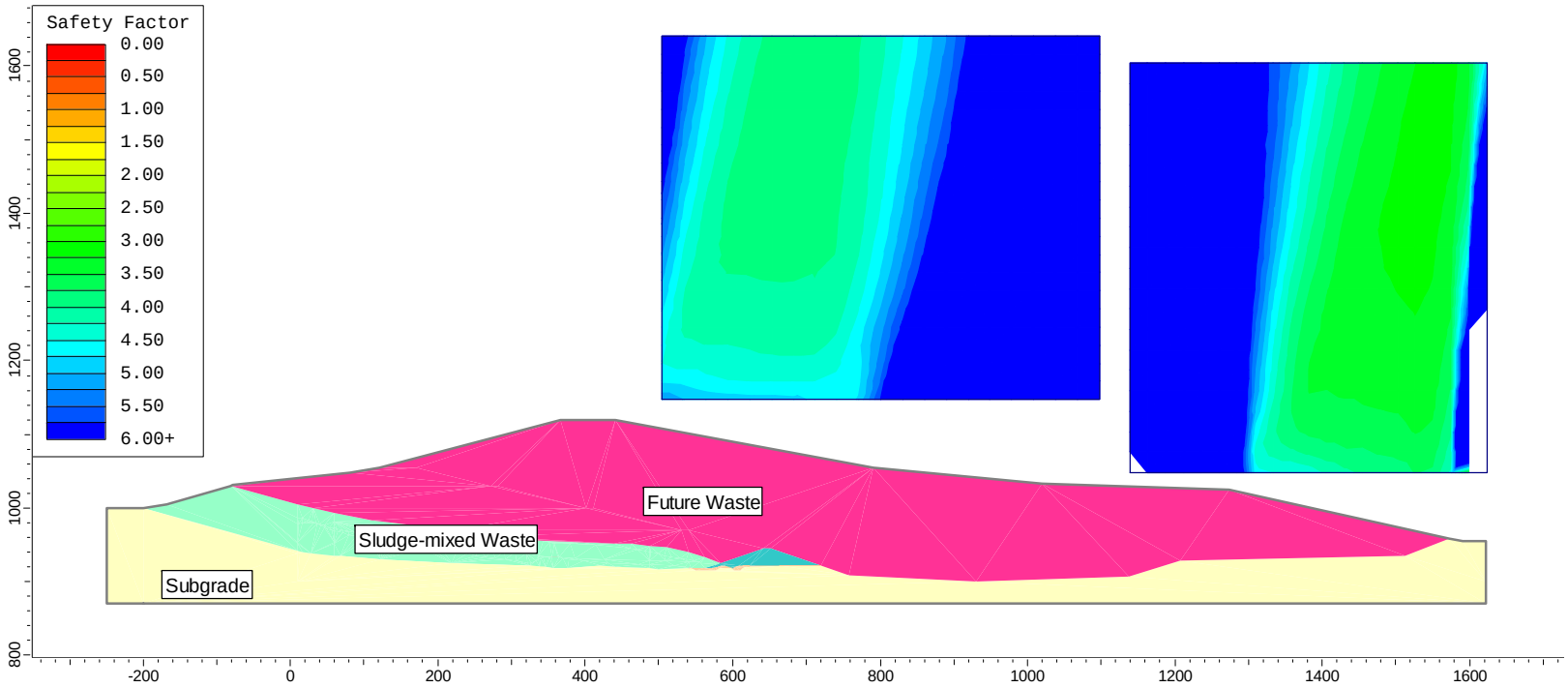

Figure 18 Contours of *FS* for Major Mod Geometry (*FS* > 3)

SUMMARY AND RECOMMENDATIONS

Slope stability analyses were conducted by Geosyntec assuming *FS* = 1.0 for the October 2010 (i.e., pre-failure) geometry. A back calculated friction angle of 20 degrees identified to achieve this condition. Based on these analyses and evidence of elevated liquid levels in the waste, Geosyntec believes that the waste slope failure at the MBL occurred due to high liquid levels combined with the presence of relatively low-strength sludge-mixed waste. These conditions combined to create a condition in which the placed waste in the upper reaches of Module G was not able to resist the stresses applied by ongoing waste placement in Module G. The failure is likely to have initiated over a portion of the mass and propagated retrogressively upslope towards the future head scarp.

The results of the analyses indicate that the sludge-rich waste within the failure area is likely best characterized as having a friction angle of 20 degrees to meet the limit equilibrium conditions likely to have been prevalent when the mass movement was triggered. The analyses also show that the waste can be placed safely within Module G as part of the overall stabilization strategy to the interim elevation of 1055 ft as long as: (i) new waste placed in Module G is thoroughly mixed to achieve the strength typical of MSW; and (ii) aggressive drainage techniques are implemented to reduce the liquids level in the Landfill. Furthermore, future long-term waste grades identified in the proposed Major Mod can be established without any adverse impacts to the stability of Module G. In fact, these proposed grades actually enhance the stability of the waste in Module G due to the increased vertical stress and the buttressing effect of these proposed final grades.

Geosyntec believes that a Sludge Management Plan needs to be developed to help assure an appropriate amount of blending, mixing, and compaction to achieve these strengths. Liquid levels in the waste can be controlled by: (i) installing vertical drainage paths through vertical gas wells; or (ii) constructing infiltration trenches through the sludge-mixed waste. These options are intended to develop/maintain hydraulic continuity between the waste in Module G and the leachate collection system. Furthermore, Geosyntec recommends that procedures be developed to assure that liquid levels are controlled through the use of piezometers. Similarly, procedures

should also be developed to verify that the rate of new waste placement is slow enough such that generated excess pore water pressures in the waste are low.

As a result of these slope stability calculation results and sensitivity studies, Geosyntec recommends the following actions.

- Liquid levels within the waste in Module G should be controlled by implementing aggressive measures to facilitate drainage of leachate to the leachate collection system.
- Liquid level control measures in Module G should be implemented prior to placing additional fill in the failure area in Module G.
- A monitoring program should be developed to include measuring liquid levels in Module G. This may include the installation of piezometers and/or observation wells
- A Sludge Management Plan should be developed to minimize the potential for subsequent waste slope instability by providing limits to amount of sludge that can be placed and to define specific blending and compaction activities.

REFERENCES

[1] Spencer, E. (1967), A method of analysis of the stability of embankments assuming parallel inter-slice forces. Geotechnique, Vol. 17, No. 1, pp. 11-26.

Appendix G

Proposed Sludge Management Procedures for the Matlock Bend Landfill

(Santek, 2011)

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Proposed Sludge Management Procedures

For The

Matlock Bend Landfill

Identification

Santek Environmental (Santek) manages the Loudon County Landfill (Landfill) on behalf of the Loudon County Solid Waste Disposal Commission. Based on the an assessment of the waste streams accepted at the Landfill, Santek has indentified six (6) waste streams at the Landfill that warrant special consideration. Two of these wastes are identified because the Landfill accepts significant volumes of the material; one waste exhibits significant beneficial effects; while three of these wastes have specific handling needs. A brief summary of these wastes and their acceptance at the Landfill are summarized as follows:

Significant Volume

- Kimberly Clark "Ash" material: This material is being identified in this plan because of the volume delivered to the Landfill. This material does not present any special handling considerations. The material is relatively easy to handle and in some instances can be used as a mixing agent in the Landfill to facilitate stabilization of other wastes. The Manifest / Profile # for this material effective 3/1/11 will be **L0311-1**.
- PSC Metals "Auto Fluff" material: The material is identified in this plan because of the volume delivered to the Landfill. The material is very easy to handle and in some instances can be used effectively as a mixing agent in the Landfill to facilitate stabilization of other wastes. The Manifest / Profile # for this material is **L0610**-1.

Beneficial Waste

- Tate & Lyle "Bottom Ash" material: This material is identified in this plan as a material that is not currently accepted in large volume, nor does this material present any handling problems. Like the Ash and Auto Fluff

Landfill Solutions Under Local Government's Authority.

materials previously described, in some instances this waste can be used effectively as a mixing agent in the Landfill to facilitate stabilization of other wastes. The Manifest / Profile # for this material effective 3/1/11 will be **L0311-3.**

Special Handling Considerations

- Kimberly Clark "Paper Waste" material: This material is identified in this plan as a material that has specific handling requirements and in some instances needs additional stabilization. The Manifest / Profile # for this material effective 3/1/11 will be **L0311-2**.
- Tate & Lyle "WT13 Sludge" material: This material is identified in this plan as a material that has specific handling requirements and needs additional stabilization. The Manifest / Profile # for this material effective 3/1/11 will be **L0311-4**.
- Tate & Lyle "Drum Dry" material. This material is identified in this plan as a material that has specific handling requirements and needs additional stabilization. The Manifest / Profile # for this material effective 3-1-11 will be **L0311-5**.

These are the sludges that have historically been disposed at the Landfill. With the addition of Manifest / Profile #'s Santek will be better able to track specific material for disposal into the Landfill. This will allow for very specific determination of amount of sludge that is disposed at the Landfill. If new sludge waste streams are identified, Santek will assess the impact of the sludge on landfill operations and then place the new sludge into one of these three categories and manage accordingly.

Material Handling Protocol

Santek is currently stabilizing the sludge material coming into the Landfill by mixing with municipal solid waste (MSW). Given the findings in the Assessment Report that the slope failure was at least partially caused by the sludge, Santek recognizes that there is a need to modify the current material handling procedures. Therefore, Santek proposes to develop and implement a new material handling protocol for the sludge that will be disposed in the Landfill.

Based on the discussion above, Santek recognizes that the Paper Waste, WT 13 Sludge, and Drum Dry require special attention upon receipt at the Landfill. Furthermore, based on experience, Santek recognizes that the mixing procedures (i.e., relative amounts of sludge and stabilizing admixtures, degree of mixing, etc.) may differ for each of these materials. In consideration of this, Santek proposes the following:

- Upon approval of this strategy by TDEC, Santek will commence a field trial mixing program that is specific to each of the three identified sludges that require stabilization.
- For each of the sludges, known weights of sludge and "stabilizing admixture" will be mixed using available on-site equipment. The stabilizing materials that will be

considered include MSW, Soil, Ash, Bottom Ash, and/or Auto-Fluff. Various amounts of sludge and admixture will be blended, mixed, placed, and compacted during these trials. The trials will be monitored by Santek and Geosyntec (the independent consultant retained by the LCSWDC).

- The outcome of each trial on each sludge will be reported and photo-documented. The goal is to establish a limiting amount of sludge and admixture, as well as specific mixing procedures that will result in a mixture that can be placed effectively in the Landfill without segregation, pumping, etc. Santek recognizes that the limiting amounts will likely be sludge and admixture dependent. However, at these limiting amounts, it is likely that the "texture" and "character" of the mixed materials will be similar.
- At the completion of the field trial program, Santek will review the results in collaboration with Geosyntec and the LCSWDC to establish specific limits and procedures. Santek will then request that TDEC perform a site visit to visually observe the proposed blending, mixing, and placement procedures. Upon concurrence of the procedures proposed by Santek will establish a formal Sludge Mixing Protocol for each of the aforementioned materials that will provide a stabilized material in the Landfill. Santek anticipates the process of field testing through TDEC concurrence and document submittal will take up to sixty (60) days after TDEC's approval of this strategy.

Upon approval of the Sludge Mixing Protocol (Protocol), Santek will treat this document as part of the Operation Plan for the Landfill. If new sludges are identified that require special handling or is new admixtures and/or blending strategies are identified, Santek will develop sludge- and admixture-specific procedures that will result in a blended and stabilized mixture of similar texture and character to the mixtures identified in the Protocol. These new procedures will be documented and appended to the Protocol. TDEC will be informed of the modification to the Protocol.

Santek believes that by performing the field trials and establishing a visible criterion for the blending, mixing, and placement, the problems that may have contributed to the slope failure will be avoided in the future. Consistent with the current Permit requirements Santek will continue to track all of the special waste and sludge materials coming into the Landfill.