BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:

PETITION OF BFI WASTE SYSTEMS OF NORTH AMERICA, INC. FOR AN ADJUSTED STANDARD WASTE DELISTING	**AS 08-05 (Adjusted Standard - Land) (Waste Delisting)**

NOTICE OF FILING

To: Clerk of the Board
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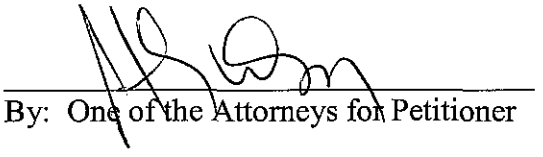
Please take notice that on June 30, 2008 the undersigned caused to be filed with the Clerk of the Illinois Pollution Control Board Petitioner's Post-Hearing Brief, Petitioner's Proposed Second Amendment to Petition for Adjusted Standard and Motion to Amend Petition fir Adjusted Standard Waste Delisting, copies of which are herewith served upon you.



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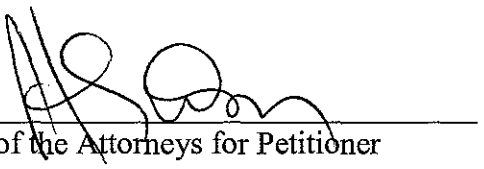
CERTIFICATE OF SERVICE

I, Patricia F. Sharkey, hereby certify that I served a copy of the above-listed document upon those listed on the attached Notice of Filing on June 30, 2008 via email and First Class United States Mail, postage prepaid.



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PRIVILEGED ATTORNEY WORK PRODUCT

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PETITIONER'S POST HEARING BRIEF

OVERVIEW OF THE PETITION

The Petition for Adjusted Standard Waste Delisting ("Petition") filed by BFI Waste Systems of Norton America, Inc. ("BFI") will allow leachate generated at BFI's long-closed Davis Junction Landfill Phase I Unit to be treated as non-hazardous waste under certain very limited circumstances which are specified in the Adjusted Standard. *See Petition, pp. 14-16.* Also see BFI's revised Adjusted Standard language in the *Proposed Second Amendment to Petition for Adjusted Standard,* which his being filed with this brief today. This is considered a "conditional delisting" under USEPA guidance. *See USEPA "National Policy for Hazardous Waste Delistings," July 1, 1998. Attachment 1.* The Adjusted Standard will allow BFI to transport this leachate over a shorter distance to a closer wastewater treatment facility ("WWTF") which will provide equal or better treatment than this leachate is currently receiving as a listed hazardous waste. *Tr. pp. 83.*

All the while, from cradle to grave, this leachate will be covered by a regulatory program – either the RCRA Subtitle C hazardous waste program prior to being loaded into the tanker truck, the Illinois Special Waste Manifest program

while being transported, or the Clean Water Act pretreatment and NPDES discharge requirements for treatment prior to discharge from the WWTF. If a spill occurs or the leachate is not disposed of in a permitted and approved pretreatment WWTF, the delisting does not apply and the leachate will be subject to RCRA Subtitle C regulation just as it is now. Thus, unlike unconditional delistings, the conditions in BFI's proposed Adjusted Standard will not allow this leachate to exit governmental oversight --- the concern expressed by USEPA in justifying conservative generic delisting assumptions (e.g. DRAS modeling assuming land disposal in an unlined landfill or surface impoundment). See discussion in Transcript at *Tr. pp. 75-78,* and *Attachment 1*, at p. 1.

This leachate is currently required to be treated as a listed hazardous waste (F039) solely because the Phase I unit in which it was generated accepted 2 % hazardous waste. It does contain some of the constituents for which F039 was listed as a hazardous waste. But, the analysis provided in the Petition demonstrates that the Phase I Unit leachate does not contain concentrations of those constituents which meet the criterion for listing (and delisting) F039 as a toxic waste in 35 Ill. Adm. Code 721.111(a)(3), i.e. "that the waste is capable of posing a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed." Thus, this leachate qualifies for delisting under 35 Ill. Adm. Code 720.122.

The nature of the leachate in this case is well known. As the Phase I Unit was a RCRA regulated landfill, BFI maintained documentation of every load of

hazardous waste accepted by the Phase I Unit since the RCRA Subtitle C regulations became effective. The volumes and types of waste are provided in *Appendix A* to the Petition. The Phase I Unit ceased accepting waste in 1983 and was closed in 1984. In 1999, the original compacted soil cover was replaced with an improved composite soil/geomembrane cover. Thus, this Petition involves a waste stream that will continue to be generated in the future, but which should not vary significantly in constituents or concentrations. To support this conclusion, BFI has provided nine years of leachate data demonstrating the stable character of this waste stream. See *Appendices C and D*, respectively, to the Petition. In response to a question from the Board's Technical Personnel, BFI also performed a statistical analysis which confirms the lack of significant variability in this waste stream. With respect to the amount of sampling data and analysis provided, BFI believes this may be the most well documented delisting petition the Board has ever received.

This Petition may also present the most conservative delisting analysis that the Board has ever reviewed. This leachate will not be land disposed and will only be deemed delisted if it is transported for treatment to a permitted wastewater treatment facility ("WWTF") which has a USEPA approved pretreatment program. Thereafter, the WWTF wastewater is discharged to the Rock River Reclamation District, a publicly owned treatment works ("POTW"), which monitors its discharge for compliance with both federal pretreatment and NPDES permit requirements. Nonetheless, BFI has modeled the risk of a worst case spill on route to the WWTF using: the highest level of the constituents

detected over nine years of data collection, USEPA's recommended DRAS Model for disposal in an unlined surface impoundment, and Illinois' 10^{-6} risk level. The selection of and support for the use of these inputs was discussed extensively in the Pre-Filed Testimony (pp.4-8) and at the hearing (Tr. pp. 69-78). Since the leachate will not be considered delisted should such a spill occur and RCRA Subtitle C hazardous waste regulations will apply to the leachate immediately upon such an occurrence, this modeling and the levels proposed should be considered very conservative.

The DRAS modeled limits are proposed as conservative delisting limits and are stated in the Adjusted Standard, with the exception of two constituents for which the highest data point exceeded the calculated DRAS limits. For those two constituents, BFI has proposed limits specified in other relevant regulatory programs, consistent with 35 Ill. Adm. Code 721.111(a)(3)(J). Specifically, USEPA's characteristic toxicity limit is proposed as the delisting level for vinyl chloride Illinois' site specific remediation objective for 1,4-dioxane is proposed as the delisting level for 1,4-dioxane. See the Illinois EPA Toxicity Assessment Unit's Groundwater Remediation Objectives for Chemicals Not Listed in TACO" at *http://www.epa.state.il.us/land/taco/chemicals-not-in-taco-1-tables.html*. The selection of and support for these limits was discussed at length in BFI's Technical Support Document accompanying its Petition, at pp. 32-36, BFI's Pre-Filed Testimony (pp.16-18), and at the hearing (Tr. pp. 40-43, 119-123).

ILLINOIS EPA RECOMMENDATION

Although Illinois EPA originally recommended denial of this petition (March 25, 2008, Illinois EPA Response to Petition for Adjusted Standard Waste Delisting), it later reversed its position based on revisions to the Adjusted Standard language making it clear that the leachate will only be considered delisted when it is being transported to and received by a WWTF with a USEPA approved pretreatment program. See IEPA revised recommendation dated April 21, 2008 and testimony of Mark Crites at *Tr. pp. 87-91.* The amendments in the proposed Second Amendment to Petition for Adjusted Standard, which is being filed today with this brief, maintain that concept.

TESTIMONY AT HEARING

At the Illinois Pollution Control Board ("Board") hearing held in this matter on May 15, 2008, BFI presented testimony on the background, rationale and technical merits of its petition by Ms. Elizabeth Steinhour and Mr. Michael Maxwell, both of Weaver Boos Consultants, Inc.. *Tr. pp. 14-21, 34-43.* BFI's attorney, Ms. Patricia Sharkey of McGuireWoods, LLP, also presented a discussion of the applicability of state and federal delisting regulations, state and federal delisting precedent, and various EPA guidance documents to this Adjusted Standard delisting petition and the Board's decision in this case. *Tr. pp. 44-54.* As this is not a contested matter and the testimony provided at hearing was quite complete, rather than repeat that testimony, BFI would simply direct the Board to the testimony in the record on these points.

RESPONSE TO BOARD'S PRE-HEARING QUESTIONS

On April 4, 2008, the Hearing Officer issued an order which directed BFI to submit responses to eight questions posed by the Board's technical personnel in *Attachment A* to that order. On May 5, 2008, BFI filed *Petitioner's Pre-Filed Testimony Responding to Questions from Board's Technical Personnel* ("Pre-Filed Testimony") which includes detailed answers to those questions and several attachments. BFI believes those questions and answers are very pertinent to the Board's review of this Petition and would direct the Board's attention to its Pre-Filed Testimony as well as the BFI witnesses' additional responses to those questions at the hearing.

RESPONSE TO ADDITIONAL QUESTONS POSED AT THE HEARING

At the hearing, a number of additional questions were raised. Although each of these points was addressed at the hearing, BFI offers the following additional responses:

1. In light of the fact that the CID treatment facility in Calumet City, Illinois had notified BFI that it no longer has the capacity to accept the Phase I Unit leachate, the Board requested that BFI update its costs for disposing of the leachate as a listed waste based on the longer hauling distance to the next closest liquid hazardous waste treatment facility (in Ohio). See *Tr. p. 29*.

Since the date of the hearing, the CID hazardous waste water treatment facility in Calumet City, Illinois – approximately 100 miles from the Davis Junction Landfill -- has informed BFI that it can once again accept its leachate for treatment. However, BFI has no assurance as to how long CID will continue to accept it. As discussed at the hearing, the next closest facility which is permitted to accept liquid hazardous waste is located in Vickery, Ohio, approximately 268

miles from the Davis Junction Landfill. See attached MapQuest Driving Direction providing a map and mileage. *Attachment 2.* The cost BFI incurred for transporting the Phase I Unit leachate to the Vickery, Ohio facility (after CID notified BFI that it could no longer accept its waste due to capacity restrictions) was approximately $2,250 / 5,000 gallon tanker truck.

2. The Board asked that BFI comment on the consistency of its Petition with USEPA delisting decisions in other cases, including the Shell case. See *Tr. p. 51-52.*

In support of its Petition, BFI reviewed a number of USEPA delisting approvals. Copies of Federal Register publications of USEPA's proposed and final delisting for each of eight federal delistings are included in *Attachment 3* hereto. In an effort to identify relevant cases, BFI focused on relatively recent delistings involving listed liquid hazardous waste, especially leachate. Of the nine delistings identified as relevant in our research, we found two delistings involving the disposal of F039 (Shell Oil Company, 70 Fed. Reg. 49187 (Aug. 23, 2005) and Department of Energy (Hanford), 70 Fed. Reg. 44496 (Aug. 3, 2005). BFI also reviewed the Board's actions in two recent Adjusted Standard delisting proceedings in which the Board rejected the petitions (Waste Management, Inc., IPCB No. 05-07 (Dec. 15, 2005) and BP Amoco, Inc., IPCB No. 07-(01) Feb. 15, 2007).

From BFI's review of the Federal delisting cases, some general observations and comparisons can be made:

A. Nature of Waste Generating Activity

i. Types of Processes and Listed Wastes

The types of listed wastes involved in these cases were: metal treating sludges and filter cake (F019); Refinery landfill leachate missed with other refinery wastewater (F039); Leachate, condensate and other wastewater generated in the course of a clean-up of a hazardous waste landfill that accepted F-, U- and P – listed wastes (F039); Sludge from electroplating operations (F006); Dewatered sludge from a plastics and chemical manufacturer's wastewater treatment plant (F-, U- and K- listed wastes); Leachate from landfilling of electric arc furnace dust and wastewater (K061); Residues from the treatment of multiple metal-bearing waste streams (F- and K- listed wastes).

While the two F039 listed waste streams are of obvious relevance, leachates and sludges associated with metals manufacturing should also be considered relevant because 96% of the 2% hazardous waste accepted in the BFI Phase I Unit was heavy metal sludges. See Technical Support Document to the Petition, p. 6 and Appendix A thereto for a description and listing of the wastes received at the Phase I Unit.

ii. Multi-Year Delisting vs. One-Time Delisting

With the exception of the one-time Tenneco and USG delistings, all of these delistings are multi-year delistings. Yet, as is discussed further in response to Question No. 2 below, none of these delistings required testing of every waste load.

iii. Active Source vs. Inactive Source

The one-time Tenneco and USG delistings each involved a fixed quantity of a known waste stored in containment cells. The DOE (Hanford) waste stream, like the BFI waste stream in this Petition, is F039 wastewater which is derived from a closed landfill, but which will be generated over a period of years. The DOE F039 waste stream has a greater potential for variability than does the BFI leachate because it includes not only leachate but also a variety of wastewater generated from waste management and cleanup activities at the Hanford mixed waste site.

The other five delistings involve waste streams generated by on-going industrial activities, and thus should be presumed to have the potential for greater variability than does the leachate generated at the long-closed Phase I Unit at the BFI Davis Junction Landfill.

B. Scope of Sampling and Analysis

As discussed in the Pre-Filed Testimony at pp. 1-4. BFI believes the large amount of data and the lengthy period over which it was obtained provides a high level of assurance regarding the nature of the Phase I Unit leachate. The following table provides a quick comparison of the historical data supporting BFI's Petition compared to that supporting those other eight USEPA approval petitions.

Number of Sampling Events / Period of Time

Delisting Company	Number of Sampling Events	Period Over Which Samples Collected	Constituents Analyzed
BFI – Davis	***14 samples***	***9 years***	***App. IX and F039***

Junction Landfill Phase I Unit			***constituent list (with some exceptions)***
Auto Alliance International ("AAI")	One composite sample from each of six roll-off boxes	Samples for composite to be collected over 6 week period	F019 constituents (including volatiles, semi-volatiles and metals, cyanide, Sulfide, Fluoride, formaldehyde, pH)
Shell Oil Company	4 samples of primary leachate; 4 samples of secondary leachate	Collected over a 5 month period	App. IX (with some additions)
Dept. of Energy (Hanford)	Historic data from operation of treatment unit; Sampling for this waste stream to be proposed in a sampling plan	Three years of prior effluent data from prior delisting; Sampling for this waste stream to be proposed in a sampling plan	To be proposed in a sampling plan
Nissan	One time composite and grab samples from different process waste sources	One Time	App. IX (with some additions)
Tenneco	One	One Time	App. IX (with some exceptions)
Eastman	One	One Time	App. IX (with some exceptions)
Chaparral	Unspecified historic data and bench tests of treated leachate	Not stated	App. IX (with some addtions,including reactive sulfide, reactive cyanide)
USG	Not stated (included historic groundwater monitoring)	Not stated (included historic groundwater monitoring)	Not stated – presume F019 constituents

C. Modeling Assumptions

i. Volume of Leachate Modeled

All of these USEPA delistings either require or allow post-delisting management of the waste in a land-based disposal unit. Therefore, its not surprising that USEPA's conservative assumption that 100% of the delisted waste could potentially be disposed of on the land at one location is triggered in these cases.

In contrast, BFI's petition does not allow land disposal. Therefore, USEPA's conservative land-based mismanagement scenario should not apply in this case. USEPA's 1998 *National Policy for Hazardous Waste Delistings* expressly authorizes non-traditional, "conditional" delistings, such as this, as long as the delisting is based on modeling that reflects the potential exposure from the post-delisting management scenario and contains appropriate conditions. See *Attachment 1.* USEPA's RCRA Delisting Program - - Guidance Manual for the Petitioner also focuses on appropriate modeling:

> "In our technical evaluation, we often use appropriate fate and transport models that rely on waste-specific information (e.g., waste volume, constituent concentration data) to predict the potential environmental impact of the petitioned waste. In selecting appropriate models, we choose a reasonable worst-case management scenario and consider plausible exposure routes for the hazardous constituents found to be present." (pp. 12-13).

The actual regulatory factor that the Board must consider is whether the model has included the risk associated with all "plausible types of improper management to which the waste could be subjected." 35 Ill. Adm. Code 721.111(a)(3)(G). In this case, even though land disposal is expressly *disallowed*

under the BFI Adjusted Standard and the delisting would not apply if the leachate were spilled on route to the pre-treatment facility, BFI has used DRAS to model a worst case land disposal scenario, focusing on the maximum mismanagement land disposal volume reasonably possible under this delisting, i.e. a full tanker truck spill.

ii. Number of Years of Disposal Assumed

Although it is not expressly stated, we presume that each of these delistings used the DRAS default periods of one year or twenty years. As stated above, these lengthy periods are not relevant to the conditional delisting in this case. Nonetheless, BFI conservatively used the DRAS default period of one year in its modeling.

iii. Target Carcinogenic Risk Modeled

Many of the USEPA delistings used a cancer rate of $1x10^{-5}$ in their DRAS modeling. In comparison, BFI used the more conservative Illinois standard of $1x10^{-6}$.

iv. Modeling of Non-Detected Constituents

The question of how to model non-detectable constituents was not discussed in six of the eight USEPA approved delistings reviewed by BFI, and there is no evidence that the data relied upon in those delistings included modeling of non-detected constituents. In two of the USEPA delistings, USEPA expressly stated that it was inappropriate to model using detection limits. See discussion in Question No. 12 below. In one case (*Nissan*), EPA discussed the fact that Nissan modeled one constituent (arsenic) using a concentration of ½ of

the detection limit. However, from EPA's discussion, it appears that Nissan didn't model hexavalent chromium using the detection level, even though it was also measured at non-detect. See *Attachment 3-4*.

D. Limits in Delisting: Land Disposal Allowed vs. No Land Disposal

Each of the eight USEPA delistings either specified or allowed land disposal of the delisted waste. The Chaparral delisting allowed onsite and off-site land disposal as well as the management of the waste water in on-site cooling ponds. (See *Attachment 3-7*, 65 Fed. Reg. 8874, 8875 (Feb. 23, 2000).) The Shell delisting allows management of the delisted waste in an on-site biotreatment unit including treatment in sludge aeration basins. (See Shell Petitioner's description of the North Effluent Theater, *Attachment 4* at pp. 14-15 and in Figure 4-1. The DOE (Hanford) delisting specifies disposal in a State Authorized Land Disposal Unit which is described as an "effluent infiltration gallery" and as being functionally equivalent to an unlined surface impoundment. (See *Attachment 3-3*, 60 Fed. Reg. 6061 and 70 Fed. Reg. 44499.) The remainder of the eight USEPA delistings all specify disposal in a Subtitle D solid waste landfill.

In contrast, the BFI Petition does not allow land disposal, and only applies to the transportation to and disposal at a permitted and USEPA approved pretreatment facility.

3. The Board asked whether BFI is aware of any other delistings where USEPA has allowed a similar monitoring frequency as is proposed in this Petition for an F039 leachate from a landfill that had accepted many different types of hazardous waste over a period of time for which the waste types, including raw materials, are not fully documented. *See Tr. p. 62.*

Yes. The chart below shows that USEPA has taken different approaches to testing frequency based upon the types of operations and waste streams involved and the anticipated or historic variability of the waste stream. In the case of BFI's Phase I Unit leachate, there is a static source and there has been minimal historic variability in the leachate constituents or concentrations. The initial, quarterly and semi-annual frequency of testing originally proposed by BFI, and as proposed to be modified in the Second Amendment to the Proposed Adjusted Standard, should be deemed consistent with and even more stringent than USEPA's approved sampling regimes.

Delisting	**Generating Source**	**Initial Testing**	**Long-Term Testing**
BFI Davis Junction Landfill -Phase I Unit	***Multi-Year/ Closed Landfill***	***One test of leachate storage tank***	***Quarterly for first year; Annual thereafter***
Auto Alliance International ("AAI")	Multi-Year/ On-going Process	None	Quarterly[1]
Shell Oil Company	Multi-year/ Ongoing Process	One test within 60 days of delisting effective date and two quarters thereafter	Quarterly for the first year; Annual thereafter
Dept. of Energy (Hanford)	Multi-Year / Closed landfill leachate but also on-oing remediation waste water	One test of effluent discharge tank	Every 15th tank[2]
Nissan	Multi-Year / On-going	One test	Annual

[1] In comments, AAI requested annual testing, but USEPA replied that since the waste had shown significant variation on a quarterly basis, annual sampling would not detect such variations. This is not the case with the BFI Phase I Unit leachate, which has not shown seasonal variation.

[2] The DOE (Hanford) waste consisted of both leachate and other remediation wastewaters and therefore could be expected to be far more variable than the BFI Phase I Unit leachate.

	Process		
Tenneco	One Time Delisting	None –One time notification	None
Eastman	Multi-Year / On-going Process	Quarterly for 1st year	Annual
Chaparral	Multi-Year / Ongoing Process	8 batches of wastewater	Annual
USG	One Time Delisting	One time sampling at six locations in sludge pond	None

4. The Board asked whether BFI has performed a statistical analysis of the nine years of monitoring data presented to see demonstrate the lack of statistical variability in the data. See *Tr. pp. 67-68*.

In response to the Board's question, Weaver Boos performed a statistical analysis to assess variability in the historical leachate data. *Attachment 5*. Specifically, the variance and standard deviation were calculated for each parameter analyzed in the historical record. The variance was calculated as:

$$\sum\left(\frac{(X-\bar{x})^2}{n-1}\right)$$

Where: X is the sample concentration
$\bar{x}$ is the mean
n is the number of sample concentrations

The standard deviation is simply the square root of the variance.

A summary of the mean, variance, and standard deviation for the parameters analyzed over the period from 1999 - 2007 is presented on the attached Table I. Only 9 out of over 250 constituents exhibited a variance greater than 1.0 mg/L. The average variance encompassing all of the parameters slightly exceeded 1 mg/L. However, this average variance was heavily influenced by two parameters with a variance well above 1.0 mg/L. The variance for 1,4 dioxane was 111 mg/L and the variance for isobutyl alcohol was 46 mg/L. If the single

highest variance is removed from the average calculation, then the average variance is almost half of variance using all the data (0.60 mg/L). If the two highest variances are removed, the average variance is reduced to less than half the value using all the data (0.43 mg/L). The average standard deviation for all parameters is even lower (0.346 mg/L).

Variability with respect to the two above constituents should not be a significant issue because both of these constituents are proposed to be analyzed on a regular basis as part of the proposed adjusted standard language. If the variability becomes an issue to the point where concentrations exceed the proposed delisting levels, this condition will be identified by future monitoring and the leachate will not meet the delisting requirements, and will be considered a hazardous waste.

Note that for purposes of the calculation of the mean, variance, and standard deviation, Weaver Boos used the reporting limits for parameters for which the analytical results were "non-detect." The minor variability in the historical data as evidenced by the above statistical analysis suggests that it is reasonable to conclude that the non-detected constituents are unlikely to present a significant concern.

5. The Board also asked whether a statistical analysis supports BFI's conclusion that certain high constituent readings were "outliers." ***Tr. p. 67.***

The conclusion that various historical data points were outliers was previously based more on a visual scan of the data, rather than a quantitative analysis. In response to this question, Weaver Boos performed a quantitative evaluation of the analytical results for methylene chloride, trichloroethylene, and vinyl chloride to assess whether select historical data points are appropriately considered outliers. As shown in *Attachment 5*, the attached Table I, in the case of each of these three constituents one historical analytical result does not fit the pattern established by the rest of the data:

1. In the case of methylene chloride, the mean of the data is 0.095 mg/L. However, one data point from April 2003 was reported as 0.58 mg/L, which is over six times higher than the mean;
2. For trichloroethylene, the mean of the data is 0.089 mg/L. However, one data point from March 2006 was reported as 0.53 mg/L, which is nearly six times higher than the mean; and
3. In the case of vinyl chloride, the mean of the data is 0.118 mg/L. One data point from March 2006 was reported as 0.44 mg/L, which is nearly four times higher than the mean.

Because each of the individual concentrations referenced above represent a significant departure from the mean, each of these points are appropriately considered as outliers, not representative of the pattern established by the many other data points in the data set. We note that the amount of data BFI has compiled on these constituents exceeds the amount provided by most if not all other delisting applicants. Therefore, it is possible to determine a pattern and outliers in this case. Furthermore, as the Adjusted Standard is written, if these

constituents are found to exceed the delisting levels, BFI will be forced to handle the leachate as hazardous. Thus, the conclusion that these instances of high concentrations are "outliers" and the proposal of lower delisting levels is a conclusion made at BFI's own risk.

6. The Board asked BFI to verify the volume of leachate that Shell Oil used in its DRAS modeling to support its federal delisting and to discuss its relevance to BFI's petition. See *Tr. p. 79.*

From the petition filed in the Shell Oil delisting proceeding, it appears that Shell used an annual volume of 3.36 million gals/yr (14,000 tons/yr or 16,619 cy/yr) in its DRAS modeling. See pp. 7-8, 59 of the Shell Petition, *Attachment 4*. While there are many similarities between the Shell Oil delisting and the delisting proposed in this case, one significant difference is that Shell's delisting is based on routing its F039 leachate through its North Effluent Biotreatment System, which includes treatment in on-site land units (including activated sludge basins) prior to discharge via Shell's NPDES permitted outfall. See the Shell Oil delisting Final Rule 70 Fed. Reg. 49187, at 49188, *Attachment 3-2*. Also see Shell Petition, pp. 9, 16- 17, and Figure 4-1 "NET Biotreatment System," *Attachment 4*.

As previously stated, where land-based disposal is allowed under a delisting it is appropriate to use the DRAS model worst case assumption that 100% of the delisted waste will be disposed of in an unlined landfill or surface impoundment. Although the Shell delisting anticipated ultimate disposal of the leachate under Shell's own NPDES permit, it also involved on-site land-based treatment prior to disposal via the NPDES permit. Therefore, the conservative

assumption that the leachate might percolate into the ground through the land-based treatment units is appropriate. Notably, neither the petition, the delisting documents, nor the language of the delisting itself in the Shell case describe the point at which the F039 leachate is considered delisted. This, plus the fact that Shell was waiting to obtain the delisting before construction of the piping to route the leachate to the North Effluent Treater, indicate that the leachate would be considered delisted as it leaves the landfill. Given the fact that no regulatory program would govern the handling and treating of the leachate on-site, EPA's worst case assumptions regarding 100% land disposal were justified.

In contrast, the proposed BFI delisting does not authorize any contact of the leachate with land. The leachate will be transported in 5,000 gallon tanker trucks and will not be considered delisted until it is loaded into the truck. It is extremely unlikely that there would be a spill of two tanker trucks at the exact same location. In fact, there has never been a spill during the transport of leachate from the Davis Junction landfill, even hauling the leachate over 100 miles for treatment. *Tr. pp. 66-67.* Rather than this delisting resulting in a loss of governmental control of the fate of the leachate, the BFI delisting provides cradle-to-grave control.

Furthermore, the BFI delisting can be distinguished as ensuring a much broader level of control than USEPA required for Shell's leachate in that two independent Clean Water Act permitted WWTF's will receive and confirm the treatability of the leachate to CWA standards before it is ultimately released to the environment.

7. The Board asked BFI to verify the maximum volume of waste and number of years of waste generation covered by the Shell Oil delisting and to discuss its relevance to BFI's petition. See *Tr. p. 80.*

From the petition filed in the Shell Oil delisting proceeding, it appears that Shell used the DRAS default of twenty years as the time period in the DRAS model. See *Attachment 4*.

8. The Board asked whether there is any need for USEPA's approval of this delisting? See *Tr. p. 92.*

BFI is not aware of any reason that USEPA approval would be required for this delisting. BFI is not requesting a change to any federally approved water quality standard nor will this delisting affect any discharge to a water of the State or a water of the United States. As stated, upon delisting, this leachate must be sent to a WWTF with a federally approved pretreatment program and the wastewater from that WWTF will be discharged to a POTW that also must comply with federal pretreatment and NPDES standards. USEPA and Illinois authorize WWTF's and POTW's to accept wastewater for treatment under their approved pretreatment programs and NPDES permits without requiring pre-approval of individual wastewater streams by USEPA.

Furthermore, the State of Illinois and the Illinois Pollution Control Board have been delegated the authority to delist a hazardous waste stream as long as the waste will be disposed of within Illinois. Illinois EPA confirmed this point at the hearing. *Tr. pp. 92- 93*. BFI also confirmed this point with USEPA prior to filing its Petition before the Board. *Tr. pp. 94.*

9. In its pre-hearing questions, the Board asked why BFI had not provided analytical data for eleven constituents that are included in the F039 list.

BFI responded in its pre-filed testimony and at the hearing, saying that BFI had not realized that its laboratory had not included these constituents in the analyses. Upon further inquiry of BFI's normal lab and two other labs, BFI was told that these constituents are deemed unusual and are not normally analyzed for when a customer requests analysis for F039 constituents. Furthermore, BFI found that, of the three labs it contacted, no single lab had the capability to analyze for all of these constituents. BFI raised concern about getting data from different labs and asked the Board for guidance on how to respond.

At the hearing, Ms. Liu indicated that the parameter of particular relevance was pthalic anhydrite, because pthalic anhydrite waste was specifically mentioned as being included in the 2% of hazardous waste accepted at the Phase I Unit. *Tr. pp. 100-102.* Since the hearing, BFI has obtained an analysis of a leachate sample for pthalic anhydrite (from the same laboratory that it normally uses). The results indicate that this constituent was below the detection level. See *Attachment 6.* BFI has inquired, but has not yet received an answer, as to whether it is possible to obtain an analysis of any more of these unusual constituents from this same lab at this time. If this is possible, BFI will provide this analysis before the end of the briefing period.

BFI also continues to believe that, with the exception of pthalic anhydrite (for which there is a specific reason to test this leachate), it is unnecessary to test for these unusual constituents. In fact, in the USEPA has not required testing for

unusual constituents which are unlikely to be present in a particular leachate. Most notably in the Shell Oil delisting USEPA did not require Shell to test for these unusual F039 constituents. In fact, USEPA only required testing for the constituents listed in 40 CFR Part 264, Appendix IX . See *Attachment 4.* Thus, even without testing for these other unusual constituents, the scope of BFI's sampling data and analysis exceeds that which USEPA has required for delisting an F039 waste.

10. The Board asked BFI to address any additional parameters or information that is referenced in USEPA updates to the DRAS software. ***See Tr. pp. 105 -111.***

Pursuant to communications with Mr. Todd Ramaly of the USEPA on May 6, 2008, the backward calculation of the delisting levels for the fish ingestion and air volatiles pathway were evaluated. (See DRAS Version 2.0 User Alert, Item 3.) The results of this evaluation are summarized in a table in *Attachment 7.*

Each parameter was evaluated with respect to the fish ingestion and air volatiles pathway, under both a carcinogenic risk and noncarcinogenic scenario. If one of these pathways contributed to the aggregate risk, then the attached spreadsheet was used to calculate a delisting level based upon the equation contained in the User Alert. Note that the fish ingestion pathway was not part of the overall risk or hazard quotient for any of the constituents included on the final list, while the air volatiles pathway was part of the overall risk and/or hazard quotient for certain organic constituents and mercury.

The delisting level for the air volatiles pathway calculated using the equation in the User Alert was then compared to the delisting level proposed in

BFI's Delisting Petition. In each case except for cis- 1,3-dichloropropene and heptachlor, the delisting level calculated using this method was higher than the delisting level proposed within BFI's Delisting Petition. Therefore, the proposed delisting levels for the majority of the constituents are unaffected by these calculations. However, in the case of these two parameters, the delisting level calculated using this method was lower than the delisting level proposed in BFI's Delisting Petition.

In the case of these two parameters, BFI is proposing that the delisting level be revised. The proposed new delisting level for cis- 1,3-dichloropropene is 1,206 mg/L, which corresponds to the manually calculated value for the air volatiles pathway. In the case of heptachlor, the manually calculated delisting level for the air volatiles pathway is greater than the toxicity level under 40 CFR 261.24. Therefore, the proposed delisting level for heptachlor will default to the toxicity level of 0.008 mg/L. These results are generally consistent with the technical literature on the DRAS software and the expectation of Mr. Ramaly, as he indicated that in most cases, the groundwater pathway would be the most sensitive pathway controlling the delisting levels.

11. The Board asked whether the DRAS modeled delisting level for lead should default to the toxicity characteristic concentration, since the DRAS number is higher than the toxicity characteristic concentration? *Tr. p. 124.*

BFI agrees that more stringent characteristic toxicity limits trump the DRAS calculated limits and has substituted the toxicity characteristic limits for the calculated limits not only for lead, but also for barium, chromium, mercury, methylethyl ketone, and silvex in the revised Adjusted Standard language

contained in BFI's "Proposed Second Amendment to Petition for Adjusted Standard which is being filed with this brief today.

12. The Board noted that EPA's DRAS modeling guidance "states that all risk assessments are conducted twice, once including those chemicals specified with concentrations that are detection limits and once omitting them." The Board requested BFI's justification for not running the DRAS model a second time using the detection limits for the non-detected constitutents. ***Tr. pp 125-128.***

As discussed at the hearing, the modeling of every undetected constituent at its detection level would be an enormous task in this case because of the number of constituents which were initially test for, i.e. all of the Appendix IX and additional F039 constituents. *Tr .p.125-128.* The data presented with this Petition contains greater than 10,000 individual data points. The vast majority of the many constituents tested for were found to be non-detect over nine years of sampling and analysis using USEPA-approved analytical methods. Therefore, there is very strong evidence that a non-detect reading in this case is an accurate reading. Furthermore, where a constituent has not been detected in multiple sampling events over many years, there is a strong indication that the constituent is not present in the leachate or is not present at a level that would present a "substantial present or potential hazard to human health or the environment," the criterion for delisting under 35 Ill. Adm. Code 721.111(a)(3).

USEPA itself does not require that all non-detected constituents be modeled. In its approval of the delisting for Chaparral, USEPA stated:

> "The EPA believes that it is inappropriate to evaluate nondetectable concentrations of a constituent of concern in its delisting modeling efforts if the nondetectable value was obtained using the appropriate analytical method. If a constituent cannot be detected (when using the appropriate analystical method with an adequate detection limit), EPA, for delisting purposes, assumes that thte constituent is not present and therefore does not present a

> threat to human health of the environment. In the delisting program, EPA believes that it is inappropriate to evaluate constituents undetected in the waste samples." 64 Fed. Reg. 46, 166, 171. (*Attachment 3-7.*)

Also see USEPA's statement in the USG delisting:

> "We believe it is inappropriate to evaluate a constituent in our modeling efforts if the constituent was not detected using an appropriate analytical method." 65 Fed. Reg. 58015, 58018. (*Attachment 3-8.*)

The reference to modeling non-detected constituents in USEPA DRAS Modeling Guidance is an example of a statement made in a USEPA guidance document that should not be interpreted by the Board as a federal rule or as a regulatory mandate. The USEPA DRAS Guidance Manual was intended to be guidance. USEPA does not interpret every word in that Guidance Manual as binding for delisting decisions. In fact, in BFI's review of eight USEPA delistings, we never found a reference to the DRAS Guidance Manual. The Board should interpret the USEPA guidance the way USEPA interprets it – as a document that is relevant, but not binding in every case. In this case, modeling of non-detected constituents has been expressly repudiated as not being USEPA policy in several delisting cases. Furthermore, BFI's Petition includes enough data over a long enough period of time to provide confidence in the results obtained.

PROPOSED REVISIONS TO ADJUSED STANDARD LANGUAGE

1. The Board asked BFI to clarify the Adjusted Standard language to clearly reflect the intent that the point at which the leachate will be deemed delisted is the point at which it is transferred from RCRA regulated on-site storage into a tanker truck for transport to a permitted WWTF with a USEPA approved pretreatment program. See *Tr. p. 31.*

BFI is submitting herewith a *Proposed Second Amendment to Petition for Adjusted Standard* which is designed to clarify the point at which the leachate is designated as delisted pursuant to this Adjusted Standard.

2. The Board noted that in the Shell Oil delisting, EPA allowed Shell "to manage and dispose of multi-landfill leachate as nonhazardous waste only after the initial verification and testing was completed to demonstrate compliance with the delisting levels." The Board asked BFI to state its rationale for allowing disposal under this delisting prior to completion of the initial testing. *Tr. pp. 129 – 132.*

BFI does not object to a pre-disposal sampling event. BFI did not initially propose that the leachate be tested prior to disposal because 1) it believed it had already provided extensive data documenting the constituents and concentrations in the Phase I Unit leachate, and 2) it had reached an agreement with Illinois EPA to sample the first three tanker truck loads. As explained at the hearing and in the Pre-Filed Testimony, it is impractical to fill a tanker truck, sample the leachate, and then hold the truck on-site until such time as a laboratory analysis for the relevant constituents is completed.

Pursuant to the discussion which took place at the hearing *(Tr.pp 129-132)*, BFI is submitting herewith a *Proposed Second Amendment to Petition for Adjusted Standard* which provides, in a new subsection (g), that BFI will submit to Illinois EPA the results of a test of a representative sample of the leachate demonstrating compliance with the requirements of the Adjusted Standard at least thirty days prior to transporting the first load of delisted leachate. BFI will obtain this sample from the RCRA regulated leachate storage tank in lieu of sampling individual tanker trucks.

3. The Board asked BFI to comment on whether the Adjusted Standard should require BFI to notify IEPA "of the initial sampling and verification to comply with the delisting levels or any other subsequent exceedances in the delisting levels are exceeded." *Tr. p 114.*

As stated above, BFI agrees with this suggestion and has proposed a new subsection (g) which requires such a submittal to Illinois EPA at least 30 days prior to initial transportation and disposal pursuant to this delisting.

4. The Board asked whether the Adjusted Standard language should require that the testing demonstrate that the leachate does not exhibit any hazardous waste characteristics before testing is allowed on only a semi-annual basis? *Tr. p. 135.*

BFI agrees that testing and/or an analysis based upon operator knowledge, as is allowed under RCRA for certain characteristics, should demonstrate that no RCRA hazardous characteristic is present in the leachate during each prescribed test. We note that for constituents for which the toxicity characteristic is more stringent than the DRAS calculated limit, the more stringent toxicity characteristic has now been incorporated into the delisting levels. BFI also agrees that quarterly sampling should continue until compliance has been demonstrated by four quarters of compliant tests. BFI has proposed to amend the Adjusted Standard language to reflect these points.

5. The Board noted that the Adjusted Standard requires that the leachate be handled as a hazardous waste if it exceeds the stated delisting levels or characteristic levels until the verification sampling procedure demonstrates it to be below those standards. The Board asked whether that prohibition was intended to apply to both the initial testing and the ongoing semi-annual testing. *Tr. pp.135-136.*

BFI intends the prohibition to apply following a failed Verification Test and to continue until Confirmatory Testing performed pursuant to paragraph (d) demonstrates compliance. BFI intends the prohibition to apply to all of the initial,

quarterly, and on-going semi-annual testing. BFI has proposed to amend the Adjusted Standard language to make this clear.

6. The Board asked whether Subsection E of the Adjusted Standard should refer to Table A constituents rather than all F039 constituents. ***Tr. pp. 136-137.***

BFI intended this language to refer to the constituents listed in Table A in the Adjusted Standard. To make this clear, BFI has proposed to delete the reference to F039 constituents. We have also proposed to amend the language throughout the Adjusted Standard to consistently refer to the requirements of paragraph (c), which references both the Table A constituents and hazardous characteristics.

CONCLUSION

In closing, BFI believes it has presented a very conservative delisting petition. This Petition does not fit neatly within USEPA's standard land-based delisting assumptions, but it doesn't have to because BFI is not proposing and would not be allowed under this delisting to land-dispose of this waste stream. USEPA itself does not treat the DRAS Users' Manual or the Manual for the Petitioner as binding and the Board should not extend the use of a federal guidance document beyond the scope to which it is applied by the USEPA itself.

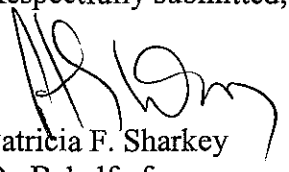
The Board's decision in this case should be bounded by the factors stated in 35 Ill. Adm. Code 721.111(a)(3), and the practical consideration that pursuant to this delisting the Phase I Unit leachate will be transported a shorter distance and receive the same or better treatment at a WWTF than it is currently receiving as a listed waste under the RCRA Subtitle C program. The Board should also take

comfort in the knowledge that the many years of data supporting this Petition indicate that this is a stable waste stream that is highly unlikely to change over the remainder of the post-closure period for the Phase I Unit.

Ultimately, the Board's decision in this case should rest upon the conditions in the Adjusted Standard, which have been tightened and improved based on the Illinois EPA's and Board's input and discussion at the hearing. While BFI believes the language in the "Proposed Second Amendment to Petition for Adjusted Standard" (which is being filed with this brief today) is clear and complete, BFI is willing to consider any reasonable additional conditions that the Board may deem necessary to finalize and approve this delisting.

BFI would like to express its gratitude to the Board for its consideration of this Petition. We would also like to thank the Illinois EPA personnel and the Board's Technical Personnel who have closely reviewed this Petition and provided helpful questions and comments.

Respectfully submitted,



Patricia F. Sharkey
On Behalf of
BFI Waste Systems of North America, Inc.

Date: June 30, 2008

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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:

PETITION OF BFI WASTE SYSTEMS OF NORTH AMERICA, INC. FOR AN ADJUSTED STANDARD WASTE DELISTING	**AS 08-05 (Adjusted Standard –Land) (Waste Delisting)**

MOTION TO AMEND
PETITION FOR ADJUSTED STANDARD
WASTE DELISTING

NOW COMES BFI Waste Systems of North America, Inc. ("BFI"), by its attorneys McGuireWoods LLP, moves the Illinois Pollution Control Board ("Board") to accept the attached Proposed Second Amendment to the Petition for Adjusted Standard filed in this matter on November 21, 2007 for consideration in this proceeding.

In support thereof, BFI states:

1. On November 21, 2007, BFI filed a Petition for Adjusted Standard in this matter which included proposed language for the Adjusted Standard. That language was designed to expressly limit the scope of the hazardous waste delisting which is the subject of the Petition to leachate which is transported pursuant to an Illinois Special Waste Manifest to a permitted wastewater treatment plant.

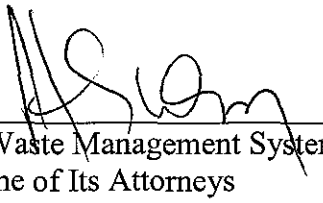
2. Based upon the recommendation of the Illinois Environmental Protection Agency ("Illinois EPA") and conversations with Illinois EPA personnel, BFI proposed to amend the language of the Adjusted Standard on April 14, 2008.

3. Today, based upon additional comments and questions from the Illinois EPA and the Board's Technical Personnel at the May 15, 2008 hearing, BFI is proposing additional amendatory language to improve and clarify the Adjusted Standard.

4. An explanation of each of the changes proposed in the attached Proposed Second Amendment to Petition for Adjusted Standard is provided in the Petitioner's Post-Hearing Brief which is being filed with the Board today.

WHEREFORE, BFI respectfully requests that the Board accept the attached Proposed Amendment to Petition for Adjusted Standard for consideration in this proceeding.

Respectfully submitted,



BFI Waste Management Systems of North America
By One of Its Attorneys

June 30, 2008

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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:

PETITION OF BFI WASTE SYSTEMS OF NORTH AMERICA, INC. FOR AN ADJUSTED STANDARD WASTE DELISTING	**AS 08-05 (Adjusted Standard –Land) (Waste Delisting)**

PROPOSED SECOND AMENDMENT TO PETITION FOR ADJUSTED STANDARD

As discussed in Petitioner's Post-Hearing Brief, BFI proposes the following SECOND AMENDMENT to the Adjusted Standard language which was originally contained in the Petition on pp. 14- 16 and subsequently proposed to be amended on April 14, 2008.

Proposed Adjusted Standard Language

Leachate generated at the closed Phase I Unit at the BFI Waste Systems of North America, Inc. ("BFI") Davis Junction Landfill in Davis Junction, Ogle County, Illinois shall not be deemed a hazardous waste pursuant to 35 Ill. Adm. Code 721 under the following circumstances:

a) The Phase I Unit is subject to an Illinois Environmental Protection Agency RCRA Post –Closure Permit which prohibits the disposal of any new solid or liquid waste in the Phase I Unit, requires maintenance of the landfill cap and liner, and requires operation of a leachate collection system;

b) The leachate is hard-piped directly from the landfill to an on-site storage tank which is regulated under the RCRA Post-Closure Permit and is not stored or managed in a surface impoundment, conveyed by ditches or otherwise managed prior to transportation for off-site disposal;

c) The leachate does not exhibit any characteristic of hazardous waste as defined in 35 Ill. Adm. Code 721.121, 721.122, 721123 and 721.124 and also does not exceed the delisting level concentrations in Table A below. Other than for the toxicity characteristics which are reflected in the delisting level concentrations in Table A below, compliance with a hazardous characteristic may be demonstrated based upon BFI's knowledge of the leachate characteristics.

d) Prior to commencing initial transportation and disposal of the leachate pursuant to this Adjusted Standard, and quarterly thereafter for the first 12 months following the effective date of this Adjusted Standard, BFI shall test a representative sample of the leachate and submit test results demonstrating compliance with the requirements of paragraph (c) above to the Illinois Environmental Protection Agency. Quarterly sampling shall continue until such time as BFI has demonstrated compliance (including, if necessary, a compliance demonstrated by a verification test) in four consecutive quarters. Thereafter, such testing shall continue on a semi-annual basis. For any such initial, quarterly, or annual testing, if an original sample fails to meet the requirements of paragraph (c), then a verification sample will be collected within 7 days and Verification Testing shall be performed for the constituent(s) which failed to meet the requirements of paragraph (c). A verified failure to meet the requirements in paragraph (c) will be deemed present if both the original and verification sample fail to meet such requirements.

e) If a failure to meet the requirements in paragraph (c) is verified pursuant to the verification procedures in paragraph (d), BFI shall notify the Illinois EPA and the leachate shall not be transported or disposed of except as a hazardous waste until such time as it is demonstrated by the Confirmatory Testing procedures below to meet the requirements of paragraph (c). Prior to re-initiating transportation and disposal pursuant to this Adjusted Standard, BFI must perform Confirmatory Testing, including testing of a minimum of four representative samples taken over not less than a 14 day period, each of which confirms that the leachate meets the requirements of paragraph (c), and BFI shall submit such results to the Illinois Environmental Protection Agency with a notification it intends to re-initiate transportation and disposal pursuant to the Adjusted Standard.

f) The leachate is transported in compliance with the requirements applicable to an Illinois Special Waste (35 Ill. Adm. Code Part 809) to and received by a permitted waste water treatment facility located in Illinois which has a Pretreatment Program which has been approved by the United States Environmental Protection Agency.

g) At least 30 days prior to transporting the first load of delisted leachate, BFI shall provide the Illinois Environmental Protection Agency with the results of a test of a representative sample of the leachate demonstrating compliance with the requirements of paragraph (c) and a one-time written notification stating that it intends to commence transportation of delisted leachate pursuant to this delisting and the name of the waste water treatment facility to which the leachate will be transported. If BFI changes disposal facilities, it shall provide to Illinois Environmental Protection Agency a one-time written notification of such change; and

h) BFI shall not transport the leachate pursuant to this Adjusted Standard outside of the State of Illinois.

i) This adjusted standard waste delisting shall apply once the leachate is loaded for transport at the BFI Davis Junction Landfill in Davis Junction, Ogle County, Illinois and during any subsequent transportation and handling, but shall not apply to any leachate from the Davis Junction facility which is released from the tanker truck to the environment (at the Davis Junction facility or at any other location) prior to delivery to a permitted waste water treatment facility as described in paragraph (f) above.

j) Any such leachate released to the environment as described in paragraph (i) above shall be considered a Resource Conservation and Recovery Act ("RCRA) listed hazardous waste and any such released leachate shall be addressed in accordance with applicable RCRA requirements.

Table A

Constituent of Concern	Delisting Level (mg/L)
Arsenic	0.525
Barium	100
Benzene	0.153
Cadmium	0.409
Carbon Disulfide	118
Chromium	5.0
Dichloropropene, cis-1, 3-	1,206
Cobalt	118
Copper	24,700
Diethyl phthalate	1,270
Endrin	32,700
Ethylbenzene	57.2
Isobutyl alcohol	299
Lead	5.0
Mercury	0.2
Methanol	499
Methyl ethyl ketone	200
Methylene chloride	0.198
Methyl isobutyl ketone	79.8
Naphthalene	6.51
Nickel	76.8
Cresol, p-	5.37
Phenol	645
Selenium	1.57
Styrene	6.2
Tetrachloroethylene	0.174
Tin	1180
Toluene	40.2
Trichloroethylene	0.164
Vanadium	57.1

Vinyl chloride	0.2
Xylenes (total)	160
Zinc	760
Dichloroethane, 1-1-	99.8
Dichloroethane, 1,2-	0.0354
Dichlorobenzene, 1,4-	0.473
Dioxane, 1,4-	100
Heptachlor	0.008
TCDD, 2,3,7,8-	0.00000147
Trichlorophenoxypripionic acid, 2,4, 5- (Silvex)	1.0
Dichlorophenoxyacetic acid, 2,4- (2,4-D)	1.86
Dimethylphenol, 2,4-	27.6
Acetone	898

Respectfully submitted,

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June 30, 2008

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Table I
Davis Junction Landfill
Summary Historical Data from Phase I Landfill Leachate and Variability Assessment

			Phase I (Hazardous) Leachate														Units	Mean	Variance	Standard Deviation
	Parameter	CAS No.	11/4/1999	3/13/2001	4/4/2001	2/27/2002	4/3/2003	2/18/2004	2/16/2005	4/14/2005	4/20/2005	5/3/2005	5/25/2005	6/23/2005	1/12/2006	3/22/2006	1/29/2007				
+	1,1,1,2-Tetrachloroethane	630-20-6	< 0.005	< 0.005		< 0.01	< 0.01	< 0.1	< 0.01							< 0.01	< 0.01	mg/L	0.020	0.001	0.032
+	1,1,1-Trichloroethane	71-55-6	< 0.005	< 0.005		< 0.01	< 0.01	< 0.1	< 0.01							< 0.01	< 0.01	mg/L	0.020	0.001	0.032
+	1,1,2,2-Tetrachloroethane	79-34-5	< 0.005	< 0.005		< 0.01	< 0.01	< 0.1	< 0.01							< 0.01	< 0.01	mg/L	0.020	0.001	0.032
+	1,1,2-Trichloroethane	79-00-5	< 0.005	< 0.005		< 0.01	< 0.01	< 0.1	< 0.01							< 0.01	< 0.01	mg/L	0.020	0.001	0.032
+	1,1-Dichloroethane	75-34-3	< 0.005	0.023		0.013	0.068	< 0.1	0.037	0.097	< 0.01	0.042	< 0.01	< 0.05	< 0.1	0.021	0.013	mg/L	0.042	0.001	0.036
+	1,1-Dichloroethylene	75-35-4	< 0.005	< 0.005		< 0.01	< 0.01	< 0.1	< 0.01									mg/L	0.023	0.001	0.038
+	1,2,3,4,6,7,8,9 - OCDD		< 6E-07		< 6E-07	2E-06	5.7E-06										< 0.01	mg/L	0.002	0.000	0.004
+	1,2,3,4,6,7,8,9 - OCDF		< 6E-07		< 5E-07	< 2E-07	< 3E-07											mg/L	0.000	0.000	0.000
+	1,2,3,4,6,7,8-HpCDD		< 4E-07		< 4E-07	2E-07	3.8E-07											mg/L	0.000	0.000	0.000
+	1,2,3,4,6,7,8-HpCDF		< 3E-07		< 3E-07	< 1E-07	< 1E-07											mg/L	0.000	0.000	0.000
+	1,2,3,4,7,8,9-HpCDF		< 3E-07		< 3E-07	< 1E-07	< 2E-07											mg/L	0.000	0.000	0.000
+	HxCDDs (all hexachlorodibenzo-p-dioxins)		< 3E-07		< 3E-07	< 1E-07	< 1E-07											mg/L	0.000	0.000	0.000
+	HxCDFs (all hexachlorodibenzofurans)		< 3E-07		< 3E-07	< 8E-07	< 1E-07											mg/L	0.000	0.000	0.000
+	PeCDDs (all pentachlorodibenzo-p-dioxins)		< 2E-07		< 4E-07	< 2E-07	< 2E-07											mg/L	0.000	0.000	0.000
+	PeCDFs (all pentachlorodibenzofurans)		< 2E-07		< 2E-07	< 2E-07	< 1E-07											mg/L	0.000	0.000	0.000
+	TCDDs (all tetrachlorodibenzo-p-dioxins)		< 1E-07	< 2E-07	< 2E-07	2E-07	< 1E-07	< 2E-07	< 1E-07									mg/L	0.000	0.000	0.000
+	TCDFs (all tetrachlorodibenzofurans)		< 1E-07		< 2E-07	1E-07	< 8E-08											mg/L	0.000	0.000	0.000
+	1,2,3-Trichloropropane	96-18-4	< 0.005	< 0.015		< 0.01	< 0.01	< 0.1	< 0.01							< 0.01	< 0.01	mg/L	0.021	0.001	0.032
+	1,2,4,5-Tetrachlorobenzene	95-34-3	< 0.1			< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.192	0.026	0.163
+	1,2,4-Trichlorobenzene	120-82-1	< 0.1	< 0.005		< 0.25	< 0.5	< 0.1								< 0.1		mg/L	0.176	0.031	0.177
+	1,2-Dibromo-3-chloropropane	96-12-8	< 0.01	< 0.026		< 0.02	< 0.02	< 0.2	< 0.02							< 0.02	< 0.02	mg/L	0.042	0.004	0.064
+	1,2-Dibromoethane	106-93-4	< 0.005	< 0.005		< 0.01	< 0.01	< 0.1	< 0.01								< 0.01	mg/L	0.021	0.001	0.035
+	1,2-Dichlorobenzene	95-50-1	< 0.1			< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.192	0.026	0.163
+	1,2-Dichloroethane	107-06-2	< 0.005	< 0.005		< 0.01	0.023	< 0.1	< 0.01							< 0.01	< 0.01	mg/L	0.022	0.001	0.032
+	1,2-Dichloropropane	78-87-5	< 0.005	< 0.005		< 0.01	< 0.01	< 0.1	< 0.01							< 0.01	< 0.01	mg/L	0.020	0.001	0.032
+	1,3-Dichlorobenzene	541-73-1	< 0.1			< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.192	0.026	0.163
+	1,3-Dinitrobenzene	99-65-0	< 0.5		< 2	< 1.3	< 2.5	< 0.5	< 0.5							< 0.5		mg/L	1.114	0.708	0.841
+	1,4-Dichlorobenzene	106-46-7	< 0.1			< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.192	0.026	0.163
	1,4-Dichlorobenzene, TCLP	106-46-7														< 0.05		mg/L	0.050	0.000	0.000
+	1,4-Dioxane	123-91-1	< 1		< 1	15	< 2	< 20	17	17	24	20	33	26	5.2	21	< 2	mg/L	14.586	111.049	10.538
+	1,4-Naphthoquinone	130-15-4	< 0.5		< 2	< 1.3	< 2.5	< 0.5	< 0.5							< 0.5		mg/L	1.114	0.708	0.841
+	1-Naphthylamine	134-31-7	< 0.5		< 2	< 1.3	< 2.5	< 0.5	< 0.5							< 0.5		mg/L	1.114	0.708	0.841
+	2-Naphthylamine	91-59-8	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	2,3,4,6-Tetrachlorophenol	58-90-2	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	2,4,5-T	93-76-5	< 0.001	< 0.02		< 0.01		< 0.01	< 0.1									mg/L	0.028	0.002	0.041
+	2,4,5-TP (Silvex)	93-72-1	0.0049	< 0.02		< 0.01	< 0.1	0.058	< 0.1	< 0.2	< 0.2	< 0.5	< 0.01	0.024	< 0.02			mg/L	0.104	0.020	0.143
	2,4,5-TP (Silvex), TCLP	93-72-1						0.022	< 0.5	< 0.1	< 0.2	< 0.5	< 0.01	0.083	< 0.01			mg/L	0.178	0.043	0.208
+	2,4,5-Trichlorophenol	95-95-4	< 0.1		< 0.01	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.166	0.027	0.163
+	2,4,6-Trichlorophenol	88-06-2	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	2,4-D	94-75-7	< 0.01	< 0.2		< 0.01	< 0.01	< 0.01	< 0.1	< 0.04	< 0.04	< 0.1	< 0.01	0.11	< 0.04			mg/L	0.057	0.004	0.059
	2,4-D TCLP	94-75-7						< 0.005	< 0.5	< 1	< 2	< 5	< 0.1	0.39	< 0.1			mg/L	1.137	2.869	1.694
+	2,4-Dichlorophenol	120-83-2	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	2,4-Dimethylphenol	105-67-9	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							0.14		mg/L	0.227	0.027	0.164
+	2,4-Dinitrophenol	51-28-5	< 0.5	< 0.4		< 1.3	< 2.5	< 0.5	< 0.5							< 0.5		mg/L	0.886	0.601	0.776
+	2,4-Dinitrotoluene	121-14-2	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	2,6-Dichlorophenol	87-65-0	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	2,6-Dinitrotoluene	606-20-2	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1									mg/L	0.242	0.030	0.174
+	2-Acetylaminofluorene	53-96-3	< 0.1		< 0.4	< 0.25		< 0.1	< 0.1							< 0.1		mg/L	0.175	0.016	0.125
+	2-Chloronaphthalene	91-58-7	< 0.1	< 0.4	< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.244	0.028	0.168
+	2-Chlorophenol	95-57-8	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	2-Hexanone	591-78-6	< 0.01	< 0.05		< 0.02	< 0.02	< 0.2	< 0.02							< 0.1		mg/L	0.060	0.005	0.069
+	2-Methylnaphthalene	91-57-6	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.2							< 0.1		mg/L	0.236	0.026	0.160
+	2-Nitrophenol	88-75-5	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	2-Picoline	109-06-8	< 0.5		< 2	< 1.3	< 2.5	< 0.5	< 0.5							< 0.5		mg/L	1.114	0.708	0.841
+	2-sec-butyl-4,6-dinitrophenol (dinoseb)	88-85-7	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	3,3'-Dichlorobenzidine	91-94-1	< 0.2	< 0.8		< 0.25	< 1	< 0.2	< 0.2							< 0.2		mg/L	0.407	0.117	0.342
+	3,3'-Dimethylbenzidine	119-93-7	< 0.2		< 0.8	< 0.5	< 1	< 0.2	< 0.2									mg/L	0.483	0.122	0.349
	3-Chloropropene (allyl chloride)	107-05-1				< 0.04		< 0.4	< 0.04							< 0.04	< 0.04	mg/L	0.112	0.026	0.161
+	3-Methylchloranthrene	56-49-5				< 0.25			< 0.1							< 0.1		mg/L	0.150	0.008	0.087
+	4,4'-DDD	72-54-8		< 0.005		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.176	0.031	0.177
+	4,4'-DDE	72-55-9	< 0.0005	< 0.001		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.150	0.031	0.175
+	4,4'-DDT	50-29-3	< 0.0005	< 0.001		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.150	0.031	0.175
+	4-6-Dinitro-o-cresol	534-52-1		< 0.4		< 1.3	< 2.5	< 0.5	< 0.5							< 0.5		mg/L	0.950	0.687	0.829
+	4-Aminobiphenyl	92-67-1	< 0.1		< 0.4	< 0.25		< 0.1	< 0.1							< 0.1		mg/L	0.175	0.016	0.125

Table I
Davis Junction Landfill
Summary Historical Data from Phase I Landfill Leachate and Variability Assessment

			Phase I (Hazardous) Leachate															Units	Mean	Variance	Standard Deviation
	Parameter	CAS No.	11/4/1999	3/13/2001	4/4/2001	2/27/2002	4/3/2003	2/18/2004	2/16/2005	4/14/2005	4/20/2005	5/3/2005	5/25/2005	6/23/2005	1/12/2006	3/22/2006	1/29/2007				
+	4-Bromophenyl phenyl ether	101-55-3	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	4-Chloro-3-methylphenol	59-50-7				< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.210	0.031	0.175
+	4-Chlorophenyl phenyl ether	7005-72-3	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	4-(Dimethylamino)azobenzene (p-(dimethylamino) azobenzene)	60-11-7	< 0.1			< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.192	0.026	0.163
+	4-Nitrophenol (p-nitrophenol)	100-02-7	< 0.5	< 2		< 1.3	< 2.5	< 0.5	< 0.5							< 0.5		mg/L	1.114	0.708	0.841
+	4-Nitroquinoline-N-oxide	56-57-5	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	5-Nitro-o-toluidine	99-55-8	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	7,12-Dimethylbenzo(a)anthracene	57-97-6	< 0.2		< 0.8	< 0.5	< 1.0	< 0.2	< 0.2							< 0.2		mg/L	0.443	0.113	0.336
+	Acenaphthene	83-32-9	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Acenaphthylene	208-96-8	< 0.1			< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.192	0.026	0.163
+	Acetone	67-64-1	0.75	6.9		3	20	12	6.6	7	4.2	4.8	7.7	4.1	< 1	3	0.44	mg/L	5.821	26.644	5.162
+	Acetonitrile	75-05-8	< 0.05			< 0.2		< 1.0	< 0.1							< 1		mg/L	0.470	0.237	0.487
+	Acetophenone	98-86-2	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Acrolein	107-02-8	< 0.05	< 0.026		< 0.1	< 0.1	< 1.0	< 0.1							< 0.2	< 0.1	mg/L	0.210	0.105	0.323
+	Acrylonitrile	107-13-1	< 0.07	< 0.05		< 0.14	< 0.14	< 1.4	< 0.14							< 0.1	< 0.14	mg/L	0.273	0.209	0.457
	Alachlor										< 0.001		< 0.0005	< 0.001	< 0.0005			mg/L	0.001	0.000	0.000
+	Aldrin	309-00-2	< 0.00025	< 0.0005		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.150	0.031	0.175
+	alpha-BHC	319-84-6	< 0.00025	< 0.0005		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.150	0.031	0.175
+	Aniline	62-53-4	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Anthracene	120-12-7	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Antimony, Total	7440-36-0	< 0.03	< 0.012		< 0.04	< 0.05	< 0.02	< 0.05							< 0.02	< 0.2	mg/L	0.053	0.004	0.061
+	Aramite	140-57-8	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Aroclor 1016		< 0.5	< 0.005		< 1.3	< 2.5	< 0.5	< 0.5		< 0.001		< 0.0005	< 0.001	< 0.0005	< 0.5		mg/L	0.528	0.587	0.766
+	Aroclor 1221		< 0.5	< 0.005		< 1.3	< 2.5	< 0.5	< 0.5		< 0.001		< 0.0005	< 0.001	< 0.0005	< 0.5		mg/L	0.528	0.587	0.766
+	Aroclor 1232		< 0.5	< 0.005		< 1.3	< 2.5	< 0.5	< 0.5		< 0.001		< 0.0005	< 0.001	< 0.0005	< 0.5		mg/L	0.528	0.587	0.766
+	Aroclor 1242		< 0.5	< 0.005		< 1.3	< 2.5	< 0.5	< 0.5		< 0.001		< 0.0005	< 0.001	< 0.0005	< 0.5		mg/L	0.528	0.587	0.766
+	Aroclor 1248		< 0.5	< 0.005		< 1.3	< 2.5	< 0.5	< 0.5		< 0.001		< 0.0005	< 0.001	< 0.0005	< 0.5		mg/L	0.528	0.587	0.766
+	Aroclor 1254		< 0.5	< 0.01		< 1.3	< 2.5	< 0.5	< 0.5		< 0.002		< 0.0005	< 0.002	< 0.001	< 0.5		mg/L	0.529	0.587	0.766
+	Aroclor 1260		< 0.5	< 0.01		< 1.3	< 2.5	< 0.5	< 0.5		< 0.002		< 0.0005	< 0.002	< 0.001	< 0.5		mg/L	0.529	0.587	0.766
	Arsenic, TCLP							< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.05	< 0.05		mg/L	0.050	0.000	0.000
+	Arsenic, Total	7440-38-2	0.011	0.054		< 0.04	< 0.05	0.02	< 0.05	0.012	0.016	< 0.0012	0.021	0.016	0.013	< 0.02	< 0.2	mg/L	0.037	0.002	0.050
	Barium, TCLP	7440-39-3						0.93	0.6	0.81	0.6	0.39	0.46	0.55	0.64	0.62	0.0009	mg/L	0.560	0.063	0.250
+	Barium, Total	7440-39-3	0.19	< 0.14		0.48	1.2	1.1	0.86	1.3	0.68	0.56	0.8	0.55	0.66	0.79	< 0.88	mg/L	0.728	0.115	0.340
+	Benzene	71-43-2	< 0.005	0.02		0.012	< 0.01	< 0.1	0.027								< 0.011	mg/L	0.026	0.001	0.033
+	Benzo(a)anthracene	56-55-3	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Benzo(a)pyrene	50-32-8	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Benzo(b)fluoranthene	205-99-2	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Benzo(g,h,i)perylene	191-24-2	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Benzo(k)fluoranthene	207-08-9	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Benzyl alcohol	100-51-6	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Beryllium, Total	7440-41-8	< 0.004	< 0.01		< 0.02	< 0.02	< 0.008	< 0.01							< 0.008	< 0.08	mg/L	0.020	0.001	0.025
+	beta-BHC	319-85-7	< 0.00025	< 0.0005		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.150	0.031	0.175
+	bis (2-chloro-1-methylethyl) ether	108-60-1					< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.200	0.040	0.200
+	bis(2-Chloroethoxy)methane	111-91-1	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	bis(2-Chloroethyl)ether	111-44-4	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
	bis(2-Chloroisopropyl)ether	39638-32-9	< 0.1			< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.192	0.026	0.163
+	bis(2-Ethylhexyl)phthalate	117-81-7	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Bromodichloromethane	75-27-4		< 0.005		< 0.01	< 0.01	< 0.1	< 0.01							< 0.01	< 0.01	mg/L	0.022	0.001	0.034
+	Bromoform	75-25-2	< 0.005	< 0.005		< 0.01	< 0.01	< 0.1	< 0.01							< 0.01	< 0.01	mg/L	0.020	0.001	0.032
+	Bromomethane (methyl bromide)	74-83-9	< 0.01	< 0.01		< 0.02	< 0.02	< 0.2	< 0.02							< 0.02	< 0.02	mg/L	0.040	0.004	0.065
+	Butyl Benzyl Phthalate	85-68-7	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
	Cadmium, TCLP	7440-43-9						< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 0.025	< 5E-05	mg/L	0.023	0.000	0.008
+	Cadmium, Total	7440-43-9	0.0027	0.0025		< 0.02	< 0.025	< 0.01	< 0.01	0.018	0.0088	0.0069	0.0071	0.0048	0.0048	< 0.01	< 0.01	mg/L	0.010	0.000	0.007
+	Carbon disulfide	75-15-0	0.061	< 0.005		< 0.01	< 0.01	< 0.1	< 0.01							< 0.01	< 0.01	mg/L	0.027	0.001	0.035
+	Carbon tetrachloride	56-23-5	< 0.005	< 0.005		< 0.01	< 0.01	< 0.1	< 0.01							< 0.01	< 0.01	mg/L	0.020	0.001	0.032
+	Chlordane	57-74-9	< 0.003	< 0.005		< 1.3	< 2.5	< 0.5	< 0.5	< 0.005	< 0.001	< 0.0005	< 0.005	< 0.001	< 0.0005	< 0.5		mg/L	0.409	0.543	0.737
	Chlordane, TCLP	57-74-9						< 0.0005	< 0.0005	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004		< 0.0025	mg/L	0.003	0.000	0.002
+	Chlorobenzene	108-90-7	< 0.005	< 0.005		< 0.01	< 0.01	< 0.1	< 0.01							< 0.01	< 0.01	mg/L	0.020	0.001	0.032
+	Chlorobenzilate	510-15-6	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Chlorodibromomethane	124-48-1	< 0.005			< 0.01	< 0.01	< 0.1	< 0.01							< 0.01	< 0.01	mg/L	0.022	0.001	0.034
+	Chloroethane	75-00-3	< 0.01	< 0.01		< 0.02	< 0.02	< 0.2	< 0.02							< 0.02	0.02	mg/L	0.040	0.004	0.065
+	Chloroform	67-66-3	< 0.005	< 0.005		< 0.01	< 0.01	< 0.1	< 0.01							< 0.01	< 0.01	mg/L	0.020	0.001	0.032
+	Chloroprene	126-99-8	< 0.005			< 0.01		< 0.1	< 0.01							< 0.01		mg/L	0.027	0.002	0.041

Table I
Davis Junction Landfill
Summary Historical Data from Phase I Landfill Leachate and Variability Assessment

			Phase I (Hazardous) Leachate															Units	Mean	Variance	Standard Deviation
	Parameter	CAS No.	11/4/1999	3/13/2001	4/4/2001	2/27/2002	4/3/2003	2/18/2004	2/16/2005	4/14/2005	4/20/2005	5/3/2005	5/25/2005	6/23/2005	1/12/2006	3/22/2006	1/29/2007				
	Chromium, TCLP	7440-47-4						< 0.078	0.079	0.087	0.1	0.096	0.077	0.071	0.099	0.064	0.0001	mg/L	0.075	0.001	0.029
+	Chromium, Total	7440-47-4	0.06	0.21		0.12		0.094	0.11		0.11	0.12	0.11	< 0.1	0.1	0.11	< 0.12	mg/L	0.114	0.001	0.035
+	Chrysene	218-01-9	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	cis-1,3-Dichloropropylene	10061-01-5	< 0.005	< 0.005		< 0.01	< 0.01	< 0.1	< 0.01								0.01	mg/L	0.021	0.001	0.035
+	Cobalt, Total	7440-48-4	0.032	0.1		3.0	0.12	< 0.5	1.7							2.1		mg/L	1.079	1.405	1.185
+	Copper, Total	7440-50-8	< 0.02	0.025		< 0.08	< 0.05	< 0.04	< 0.05							< 0.04	< 0.4	mg/L	0.088	0.016	0.127
+	Cyanide, Total	57-12-5	< 0.005	< 0.05		< 0.005		< 0.005	< 0.005							< 0.005		mg/L	0.013	0.000	0.018
	Cyclohexanone		< 0.125															mg/L	0.125	0.000	0.000
+	delta-BHC	319-86-8	< 0.00025	< 0.0005			< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.133	0.035	0.186
+	Diallate	2303-16-4	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Dibenzo(a,h)anthracene	53-70-3	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Dibenzofuran	132-64-9	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Dibromomethane (methylene bromide)	74-95-3	< 0.005	< 0.005		< 0.01	< 0.01	< 0.1	< 0.01							< 0.01	< 0.01	mg/L	0.020	0.001	0.032
+	Dichlorodifluoromethane	75-71-8	< 0.01	< 0.005		< 0.02	< 0.02	< 0.2	< 0.02							< 0.02		mg/L	0.042	0.005	0.070
+	Dieldrin	60-57-1	< 0.0005	< 0.001		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.150	0.031	0.175
+	Diethyl phthalate	84-66-2	< 0.1	< 0.4		< 0.25	0.54	< 0.1	< 0.1	0.27	< 0.25	0.12	< 0.2	< 0.1	0.031	0.13		mg/L	0.199	0.020	0.143
+	Dimethoate	60-51-5	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Dimethyl benzeneethanamine (alpha, alpha-Dimethylphenethylamine)		< 0.2		< 0.8	< 0.5	< 1.0	< 0.2	< 0.2							< 0.2		mg/L	0.443	0.113	0.336
+	Dimethyl phthalate	131-11-3	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Di-n-butyl phthalate	84-74-2	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Di-n-octyl phthalate	117-84-0	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
	Di-N-Propylnitrosamine		< 0.5		< 2.0	< 1.3	< 2.5	< 0.5	< 0.5							< 0.5		mg/L	1.114	0.708	0.841
+	Diphenylamine	122-39-4	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Disulfoton	298-04-4	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Endosulfan I	115-29-7	< 0.1	< 0.0005		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.164	0.027	0.165
+	Endosulfan II	115-29-7	< 0.1	< 0.001		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.164	0.027	0.165
+	Endosulfan sulfate	1031-07-8	< 0.1	< 0.001		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.164	0.027	0.165
+	Endrin aldehyde	7421-93-4	< 0.1	< 0.001		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.164	0.027	0.165
	Endrin ketone		< 0.0005															mg/L	0.001	0.000	0.000
+	Endrin	72-20-8	< 0.0005	< 0.001		< 0.001	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.115	0.031	0.177
	Endrin, TCLP	72-20-8						0.0015	< 0.0001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		0.001	mg/L	0.001	0.000	0.000
+	Ethyl methacrylate	97-63-2	< 0.005	< 0.005		< 0.01	< 0.01	< 0.1	< 0.01							< 0.01		mg/L	0.021	0.001	0.035
+	Ethyl methanesulfonate	62-50-0	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1	< 0.1	mg/L	0.206	0.026	0.161
+	Ethylbenzene	100-41-4	< 0.005	0.15		0.088	0.098	0.25	0.21	0.25	0.15	0.18	0.18	0.13	0.2	0.12	0.092	mg/L	0.150	0.005	0.068
+	Famphur	52-85-7	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 2		mg/L	0.493	0.467	0.683
	Flash Point		> 200					> 200	> 200	> 200	> 200	> 200	> 200	> 200	> 200		> 200	Deg. F	200.000	0.000	0.000
+	Fluoranthene	206-44-0	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Fluorene	86-73-7	< 0.1	< 0.4		< 0.25		< 0.1	< 0.1							< 0.1		mg/L	0.175	0.016	0.125
+	gamma-BHC (Lindane)	58-89-9	< 0.00025	< 0.0005		< 0.25	< 0.5	< 0.1	< 0.1	< 0.0005	< 0.0001	< 0.00005	< 5E-05	< 0.0001	< 0.00005	< 0.1		mg/L	0.081	0.021	0.146
	gamma-BHC (Lindane), TCLP	58-89-9						< 0.0005	< 0.00005	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.0025	mg/L	0.001	0.000	0.001
+	Heptachlor	76-44-8	< 0.00025	< 0.0005		< 0.25	< 0.5	< 0.1	< 0.1	< 0.0005	< 0.0001	< 0.00005	< 5E-05	< 0.0001	< 0.00005	< 0.1	< 0.0025	mg/L	0.075	0.020	0.142
	Heptachlor, TCLP	76-44-8						0.00053	< 0.00005	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.0025	mg/L	0.001	0.000	0.001
+	Heptachlor epoxide	1024-57-3	< 0.00025	< 0.0005		< 0.25	< 0.5	< 0.1	< 0.1	< 0.0005	< 0.0001	< 0.00005	< 5E-05	< 0.0001	< 0.00005	< 0.1	< 0.0025	mg/L	0.075	0.020	0.142
	Heptachlor epoxide, TCLP	1024-57-3						< 0.0005	< 0.00005	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001		< 0.0025	mg/L	0.001	0.000	0.001
+	Hexachlorobenzene	118-74-1	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Hexachlorobutadiene	87-68-3	< 0.1	< 0.005		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.165	0.027	0.164
+	Hexachlorocyclopentadiene	77-47-4	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Hexachloroethane	67-72-1	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Hexachlorophene	70-30-4	< 2		< 8	< 5	< 10	< 2	< 2							< 2		mg/L	4.429	11.286	3.359
+	Hexachloropropene	1888-71-7	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Indeno(1,2,3-cd)pyrene	193-39-5	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Iodomethane		< 0.01	< 0.01		< 0.02	< 0.02	< 0.2	< 0.02							< 0.02	< 0.02	mg/L	0.040	0.004	0.065
+	Isobutyl alcohol	78-83-1	< 1			< 2	3.7	< 20	< 2							< 2	< 2	mg/L	4.671	46.322	6.806
+	Isodrin	465-73-6	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Isophorone	78-59-1	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Isosafrole	120-58-1	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Kepone	143-50-0	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 2		mg/L	0.493	0.467	0.683
	Lead, TCLP	7439-92-1						< 0.05	< 0.05	< 0.05	< 0.05		< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	mg/L	0.056	0.000	0.017
+	Lead, Total	7439-92-1	0.038	0.012		0.018	0.18	0.074	0.12	0.15	0.068	0.069	0.064	0.054	0.065	0.087	< 0.076	mg/L	0.077	0.002	0.047
+	m-Cresol	108-39-4	< 0.1	< 0.005				< 0.1	< 0.1									mg/L	0.076	0.002	0.048
	Mercury, TCLP	7439-97-6						< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 2E-06	< 0.002	< 0.002	mg/L	0.002	0.000	0.001
+	Mercury, Total	7439-97-6	< 0.0002	0.04		< 0.0002	< 0.0004	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.00005	< 0.0002	< 0.0002	< 0.002	mg/L	0.003	0.000	0.011
+	Methacrylonitrile	126-98-7	< 0.02		< 0.02	< 0.04	< 0.04	< 0.4	< 0.04							< 0.04	< 0.04	mg/L	0.080	0.017	0.130

Table I
Davis Junction Landfill
Summary Historical Data from Phase I Landfill Leachate and Variability Assessment

			Phase I (Hazardous) Leachate																	
	Parameter	CAS No.	11/4/1999	3/13/2001	4/4/2001	2/27/2002	4/3/2003	2/18/2004	2/16/2005	4/14/2005	4/20/2005	5/3/2005	5/25/2005	6/23/2005	1/12/2006	3/22/2006	1/29/2007	Units	Mean	Variance	Standard Deviation
	Methanol	67-56-1	1.4															mg/L	1.400	0.000	0.000
+	Methapyrilene	91-80-5	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Methoxychlor	72-43-5	< 0.0025	< 0.0005		< 0.25	< 0.5	< 0.1	< 0.1	< 0.005	< 0.001	< 0.0005	< 0.0005	< 0.001	< 0.0005	< 0.1		mg/L	0.082	0.021	0.146
	Methoxychlor, TCLP	72-43-5						< 0.0005	< 0.0005	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002		< 0.0025	mg/L	0.002	0.000	0.001
+	Methyl chloride (chloromethane)	74-87-3	< 0.01	< 0.005		< 0.02	< 0.02	< 0.2	< 0.02									mg/L	0.046	0.006	0.076
+	Methyl ethyl ketone	78-93-3	0.47	7.8		1.7	12	9.3	8.6	6.8	2.8	4.6	6.4	2.9	< 2	< 0.1		mg/L	5.036	13.942	3.734
+	Methyl methacrylate	80-62-6	< 0.005		< 0.005	< 0.01	< 0.01	< 0.1	< 0.01							< 0.1	< 0.01	mg/L	0.031	0.002	0.042
+	Methyl methanesulfonate	66-27-3	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Methyl parathion	298-00-00	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Methylene chloride (dichloromethane)	75-09-2	< 0.005	0.031		< 0.01	0.58	< 0.1	< 0.01							0.01	< 0.01	mg/L	0.095	0.039	0.199
+	Methyl-iso-butyl ketone (4-Methyl-2-pentanone)	108-10-1	0.066	0.77		0.14	0.9	1.0	1.8							0.67	< 0.1	mg/L	0.681	0.345	0.588
+	Naphthalene	91-20-3	< 0.1	0.038		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.170	0.025	0.159
	N-Butyl Alcohol		< 5	< 0.2														mg/L	2.600	11.520	3.394
+	Nickel, Total	7440-02-0	0.39	0.72		0.95	1	0.84	0.84							0.95	0.88	mg/L	0.821	0.038	0.195
+	Nitrobenzene	98-95-3	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	N-Nitrosodiethylamine	55-18-5	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1								< 0.1		mg/L	0.242	0.030	0.174
+	N-Nitrosodimethylamine	62-75-9	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	N-Nitrosodi-n-butylamine	924-16-3	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	N-Nitrosodi-n-propylamine	621-64-7		< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.242	0.030	0.174
+	N-Nitrosodiphenylamine	86-30-6	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	N-Nitrosomethylethylamine	10595-95-6	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	N-Nitrosomorpholine	59-89-2	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	N-Nitrosopiperidine	100-75-4	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	N-Nitrosopyrolidine	930-55-2	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	o,o,o-Triethyl phosphorothioate	126-68-1	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	o-Cresol	95-48-7	< 0.1	< 0.005	< 0.4	< 0.25		< 0.1	< 0.1							< 0.1		mg/L	0.151	0.017	0.131
+	o-Nitroaniline (2-Nitroaniline)	88-74-4	< 0.5		< 2.0	< 1.3	< 2.5	< 0.5	< 0.5							< 0.5		mg/L	1.114	0.708	0.841
+	m-Nitroaniline (3-Nitroaniline)	99-09-2	< 0.5		< 2	< 1.3	< 2.5	< 0.5	< 0.5							< 0.5		mg/L	1.114	0.708	0.841
+	p-Nitroaniline (4-Nitroaniline)	100-01-6	< 0.5		< 2	< 1.3	< 2.5	< 0.5	< 0.5							< 0.5		mg/L	1.114	0.708	0.841
+	o-Toluidine	95-53-4	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Parathion	56-38-2	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	p-Chloroaniline (4-chloroaniline)	106-47-8	< 0.1			< 0.25	< 0.5	< 0.1	< 0.1									mg/L	0.210	0.031	0.175
+	p-Chloro-m-cresol	59-50-7	< 0.1		< 0.4													mg/L	0.250	0.045	0.212
+	p-Cresol	106-44-5	0.49	0.74		0.72		0.78	0.96	1.1	0.7	1.4	1.5	1.6		0.73		mg/L	0.975	0.139	0.373
+	Pentachlorobenzene	606-93-5	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Pentachloroethane	76-01-7	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Pentachloronitrobenzene	82-68-8	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Pentachlorophenol	87-86-5	< 0.5	< 0.4		< 1.3	< 2.5	< 0.5	< 0.5							< 0.5		mg/L	0.886	0.601	0.776
	pH (field)			6.5	6.8													SU	6.650	0.045	0.212
	pH (Lab)		8.2			6.8				7.2	7.6	7.1	7.2	7.6	7.3			SU	7.375	0.179	0.423
+	Phenacetin	62-44-2	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Phenanthrene	85-01-8	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Phenol	108-95-2	0.16		< 0.4	< 0.25	0.91	0.14	0.31	0.27	< 0.25	0.2	0.24	0.28	0.1	0.14		mg/L	0.281	0.042	0.206
+	Phorate	298-02-2	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	p-Phenylenediamine	106-50-3	< 0.2		< 0.8	< 0.5	< 1	< 0.2	< 0.2									mg/L	0.483	0.122	0.349
+	Pronamide	23950-58-5	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Propionitrile	107-12-0	< 0.005		< 0.005	< 0.01	< 0.01	< 0.1	< 0.01							< 0.1		mg/L	0.034	0.002	0.045
+	Pyrene	129-00-0	< 0.1	< 0.4		< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
+	Pyridine	110-86-1	< 0.5		< 0.05	< 1.3	< 2.5	< 0.5	< 0.5							< 0.5		mg/L	0.836	0.676	0.822
	Reactive Cyanide	57-12-5	< 0.005			< 0.005		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005			mg/L	0.005	0.000	0.000
+	Safrole	94-59-7	< 0.1		< 0.4	< 0.25	< 0.5	< 0.5	< 0.1							< 0.1		mg/L	0.279	0.035	0.187
	Selenium, TCLP							< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	mg/L	0.055	0.000	0.016
+	Selenium, Total		< 0.005	0.032		< 0.04	< 0.05	< 0.02	< 0.05	< 0.01	< 0.005	< 0.012	< 0.01	< 0.01	< 0.005	< 0.02	< 0.02	mg/L	0.021	0.000	0.016
	Silver, TCLP							< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.1	mg/L	0.055	0.000	0.016
+	Silver, Total		< 0.01	0.005		< 0.04	< 0.05	< 0.1	< 0.02	< 0.06	< 0.003	< 0.0075	< 0.006	< 0.006	< 0.003	< 0.02	< 0.02	mg/L	0.025	0.001	0.028
+	Styrene	100-42-5	< 0.005		< 0.017	0.087	< 0.01	< 0.1	< 0.01							< 0.01	< 0.01	mg/L	0.031	0.002	0.039
+	Sulfide as S	18496-25-8	4.4	< 0.001		< 10		< 1	< 10	< 1	< 1	< 1	< 1	< 1	< 1	< 7.1	0.5	mg/L	3.000	13.335	3.652
+	sym-Trinitrobenzene	99-35-4	< 0.2		< 0.8	< 0.5	< 1	< 0.2	< 0.2							< 0.2		mg/L	0.443	0.113	0.336
+	Tetrachloroethylene	127-18-4	< 0.005	0.0059		< 0.01	< 0.01	< 0.1	< 0.01							< 0.01	< 0.01	mg/L	0.020	0.001	0.032
+	Tetraethyldithiopyrophosphate		< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168
	Tetrahydrofuran							< 0.1										mg/L	0.100	0.000	0.000
+	Thallium, Total		< 0.5	< 0.012		< 0.04	< 0.05	< 0.2	< 0.1							< 0.2		mg/L	0.157	0.028	0.169
+	Thionazin	297-97-2	< 0.1		< 0.4	< 0.25	< 0.5	< 0.1	< 0.1							< 0.1		mg/L	0.221	0.028	0.168

Table I
Davis Junction Landfill
Summary Historical Data from Phase I Landfill Leachate and Variability Assessment

			Phase I (Hazardous) Leachate																	
	Parameter	**CAS No.**	**11/4/1999**	**3/13/2001**	**4/4/2001**	**2/27/2002**	**4/3/2003**	**2/18/2004**	**2/16/2005**	**4/14/2005**	**4/20/2005**	**5/3/2005**	**5/25/2005**	**6/23/2005**	**1/12/2006**	**3/22/2006**	**1/29/2007**	**Units**	**Mean**	**Variance**	**Standard Deviation**
+	Tin	7440-31-5		0.12		< 0.04	0.053	< 2.4	< 0.05							< 0.1	< 1	mg/L	0.538	0.795	0.891
+	Toluene	108-88-3	0.073	0.26		0.25	0.13	< 0.59	0.42	0.47	0.23	0.27	0.26	0.27	0.3	0.26	0.13	mg/L	0.280	0.019	0.137
+	Toxaphene	8001-35-2	< 0.005	< 0.01		< 1.3	< 2.5	< 0.5	< 0.5	< 0.01	< 0.002	< 0.001	< 0.0001	< 0.002	< 0.001	< 0.5		mg/L	0.410	0.542	0.736
	Toxaphene, TCLP	8001-35-2						< 0.001	< 0.001	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04		< 0.005	mg/L	0.027	0.000	0.019
+	trans-1,2-Dichloroethylene	156-60-5	< 0.005	< 0.005		< 0.01	< 0.01	< 0.1	< 0.01								< 0.01	mg/L	0.021	0.001	0.035
+	trans-1,3-Dichloropropylene	10061-02-6	< 0.005	< 0.005		< 0.01	< 0.01	< 0.1	< 0.01								< 0.01	mg/L	0.021	0.001	0.035
+	trans-1,4-Dichloro-2-butene	110-57-6	< 0.02	< 0.005		< 0.04	< 0.04	< 0.4	< 0.04							< 0.04		mg/L	0.084	0.020	0.140
+	Trichloroethylene	79-01-6	< 0.005	0.017		< 0.01	0.026	< 0.1	< 0.01							0.53	< 0.01	mg/L	0.089	0.033	0.181
+	Trichlorofluoromethane	75-69-4	< 0.005	< 0.005		< 0.01	< 0.01	< 0.1	< 0.01							< 0.01	< 0.01	mg/L	0.020	0.001	0.032
+	Vanadium, Total	7440-62-2	< 0.01	0.036		< 0.04	< 0.05	< 0.02	< 0.02							< 0.02	< 0.2	mg/L	0.050	0.004	0.062
+	Vinyl acetate	108-05-4	< 0.01	< 0.05		< 0.02	< 0.02	< 0.2	< 0.02							< 0.02		mg/L	0.049	0.005	0.068
+	Vinyl chloride	75-01-4	< 0.01	< 0.01		< 0.02	0.16	< 0.2	< 0.02							0.44	0.087	mg/L	0.118	0.022	0.149
+	Xylenes (Total)	1330-20-7	0.014	0.38		0.34	0.53	1.10	0.98	1.1	0.5	0.77	0.64	0.61	0.64	0.45	0.37	mg/L	0.602	0.094	0.307
+	Zinc, Total	7440-66-6	1.4	0.3		1.3	10	< 0.04	0.81							1.3	0.53	mg/L	1.960	10.805	3.287
																		Average Variance and Standard Deviation:		**1.015**	**0.346**
																		Average Var/Stdev (w/ out two highest):		**0.429**	**0.283**

\+ Constituents listed in 35 IAC 724 Appendix I

For landfill leachate (< 0.5% solids), total result (in mg/L) is equivalent to TCLP result in accordance with TCLP analytical method.

For non-detect results, the detection limit was used for purposes of calculating the mean, variance, and standard deviation.