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Chris Korleski, Director

April 21, 2010

Mr. Douglas E. Roberts, President
Envirosafe Services of Ohio, Inc.
876 Otter Creek Road
Oregon, Ohio 43616-1200

Subject: Hazardous Waste Permit Modification
Class 1A Approval and Classification
Envirosafe Services of Ohio, Inc.
U.S. EPA ID# OHD 045 243 706 / Ohio Permit #03-48-0092

Dear Mr. Roberts:

On March 10, 2010, Ohio EPA received a request for a Class 1A (Class 1 requiring prior approval) hazardous waste permit modification (tracking number – OHD045243706-100310-1A-1) from Envirosafe Services of Ohio, Inc. (ESOI).

Ohio EPA has evaluated the permit modification classification using the criteria found in paragraph (E)(2) of OAC Rule 3745-50-51 and in accordance with OAC Rule 3745-50-51(E)(1)(b) has determined that the permit modification meets the criteria of a Class 1 modification requiring prior approval of the director. In addition, with this letter, Ohio EPA approves the above referenced Class 1A modification submitted pursuant to Ohio Administrative Code (OAC) Rule 3745-50-51.

The following modifications revise Permit Module J (Cell M Landfill) to clarify the monitoring, operation, and maintenance requirements for the primary and secondary leachate collection systems (PLCS and SLCS) of Cell M, along with the inspection, record keeping, and reporting requirements as agreed upon by ESOI and Ohio EPA during negotiation of the October 2008 Proposed Director's Final Findings and Orders (DFFOs). This modification also includes revisions to Section D (Process Information) and Section F (Procedures to Prevent Hazards) of ESOI's Part B Permit Application. These modifications were assigned the permit information tracking system (PITS) ID number of OHD045243706-100310-1A-1:

- Replace Module J permit pages 117, 119, 120, and 124 through 130 with revised pages having the same page number.
- Replace the existing Section D (Process Information) cover page and table of contents pages D-x and D-xi with the revised pages (identified as Modification No. 045, dated March 2, 2010).
- Replace the Appendix D.19 cover page and pages D.19-1 and D.19-2 (Cell M Leachate Collection System Transducer Maintenance Check) with the revised/new pages (identified as Modification No. 045, dated March 2, 2010).
- Replace the existing Section F (Procedures to Prevent Hazards) cover page and table of contents pages F-iv and F-v with the revised pages (identified as Modification No. 045, dated March 2, 2010).

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- Replace the Appendix F.6 (General Site Inspection Forms) cover page and page F.6-1 (List of General Site Inspection Forms) with the revised pages (identified as Modification No. 045, dated March 2, 2010).
- Add inspection form D-19 (Transducer Equipment Maintenance Inspection) to Appendix F.6 (identified as Revision No.: 0, dated April 7, 2010).

Enclosed is a copy of the revised permit terms and conditions and permit application pages. This has been included to ensure that all involved parties have written confirmation of the changes.*

If you have any questions concerning this action, please contact Chris Maslo at the Ohio EPA, Northwest District Office, at (419)698-3130.

Sincerely,

Shannon M. Nabors

Shannon M. Nabors
District Chief

*In accordance with OAC Rule 3745-50-51(D)(1)(a)(ii), ESOI shall send a notice within 90 days of an approved Class 1A modification to all persons on the Agency mailing list. An updated mailing list can be obtained by contacting Jeremy A. Carroll, P.E., Manager, Regulatory and Information Services Section at (614)644-2917, or by email at jeremy.carroll@epa.state.oh.us.

CM/cs

Enclosure

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Jae Lee, U.S. EPA, Region V

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MODULE J – CELL M LANDFILL

J. MODULE HIGHLIGHTS

The Permittee maintains and operates one active landfill known as Cell M and shown on Drawing PRMO-T04 in Volume 8 of the permit application. The scope of this permit module involves regulatory requirements for Cell M. Cell M, located south of York Street, was excavated and developed in a total of 3 phases. Cell M is approximately 25 acres at ground surface and extends approximately 45 feet below the original ground surface and is permitted for a maximum height of 106 feet (700 msl) above the ground surface. Cell M was constructed with a multi-component bottom liner system that consists of a minimum of 9 feet of recompacted, engineered clay and multiple synthetic liners which is discussed in more detail below. The components of the liner and leachate collection systems are described in the Construction Quality Assurance report for Cell M, Phases 1, 2 and 3 Below Grade Liner Construction. As-built details of Cell M excavation and the secondary clay liner are provided within the Cell M, Phases 1, 2 and 3 As-Built Drawings. The total capacity for Cell M is approximately 3.194 million cubic yards.

The bottom of Cell M was designed and constructed with a double liner system that includes the following components (listed from bottom to top):

- A secondary composite liner consisting of a minimum of 9 feet (and a maximum of 21 feet) of recompacted clay layer covered by a 60-mil High Density Polyethylene (HDPE) geomembrane liner.

- A leak detection and collection system above the secondary liner consisting of a geotextile covering a 12-inch aggregate drainage layer covering another geotextile and a HDPE geonet.

- A primary composite liner consisting of 2 feet of recompacted clay support layer covered by an 80-mil HDPE geomembrane liner.

- A leachate collection system (LCS) above the primary liner consisting of a geotextile, a 12-inch aggregate drainage layer, another geotextile and an HDPE geonet.

The internal sideslopes of Cell M were designed and constructed with a double liner system that includes the following:

- A secondary liner consisting of a minimum of 6.5 feet of recompacted clay

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from the facility boundary, and 40 feet from the City of Toledo's water lines.

(d) The following wastes are prohibited from disposal in landfill cells:

(i) any wastes containing free liquids as determined in accordance with OAC Rule 3745-57-14, except lab packs;

(ii) water reactive or pyrophoric wastes, except as specified in OAC Rule 3745-57-12;

(iii) Class 1 explosives, as defined in 49 CFR 173.50(b)(1) and (2);

(iv) shock sensitive wastes;

(v) polychlorinated biphenyls (PCBs) regulated by the Toxic Substances Control Act (TSCA) (greater than or equal to 50 ppm), except waste that may be disposed in a RCRA facility in accordance with 40 CFR 761.61 that is also;

(a) a mixed RCRA-TSCA waste that complies with applicable Land Disposal Restriction (LDR) standards in OAC Rules 3745-270-48 and 3745-270-49.

(vi) radioactive wastes regulated by the Nuclear Regulatory Commission;

(vii) infectious wastes;

(viii) any waste in gaseous form;

(ix) any waste that under standard temperature and pressure, is capable of causing fire through friction, absorption of moisture, or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard, as specified in OAC Rules 3745-51-21(B) and 3745-57-12(A);

(x) any lab pack container that is found either to be incorrectly packaged, incorrectly sealed, leaking, or which does not otherwise meet the requirements specified in OAC Rule 3745-57-16;

(xi) any ignitable, reactive, or incompatible wastes unless those wastes are containerized and physically separated by inert material to protect them from conditions that may cause them to ignite or react; and,

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(xii) wastes that will, at the concentration accepted:

(a) adversely affect the permeability of the clay liner(s);

(b) produce leachate that is incompatible with the synthetic liner(s) and leachate collection system piping; and,

(c) generate gases that adversely affect the permeability of the clay cap.

(xiii) any wastes exhibiting a flashpoint below 100 degrees Fahrenheit as detailed in Sections C-2(f)(11) through C-2(f)(13) of the permit application.

(xiv) any waste that will not achieve after 4 weeks of placement and maintain thereafter a minimum shear strength of 2000 pounds per square foot. Compliance with this permit condition is to be determined in accordance with condition J.2(s) of this permit.

(e) The Permittee must comply with all Landfill Disposal Restrictions as specified in OAC Chapter 3745-270.

J.2 Landfill Design and Installation
OAC Rule 3745-57-03

(a) The Permittee must construct Cell M in accordance with the plans and drawings contained in Section D of the permit application, terms and conditions of this permit, and the Ohio hazardous waste rules. Any design or construction plans for Cell M must be approved by Ohio EPA.

(b) The earthfills, where used, must consist of a well-graded soil mixture. The material must be free of debris, plant materials (except when earthfill is being used for vegetative cover material), rock fragments greater than six inches in maximum dimension, large clods, frozen material, or other foreign materials. In-situ density tests are required to verify the desired degree of compaction. Any construction utilizing earthfill must be in accordance with Appendix D.6 of the permit application. The material must be brought to the proper water content.

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(s) To ensure that the global slope stability factor for static condition remains above 1.5, the minimum shear strength of the waste material disposed in Cell M, after curing, must not be less than 2000 psf (pounds per square foot). In order to verify that the required minimal waste in-situ shear strength of 2000 psf is being maintained, the Permittee shall conduct the following test at the regular intervals as specified below and beginning within two (2) weeks from the effective date of this permit:

(i) Once every calendar month, the Permittee shall obtain at least one undisturbed sample of waste material following its disposal and compaction (if any). The Permittee must notify Ohio EPA on-site staff at least 3 days prior to the sampling event. The sample(s), which need to be representative of common waste placement practices, shall be taken from within the placed lift, following applicable ASTM D1587 "Practice for Thin-walled Tube Sampling of Soils for Geotechnical Purposes" requirements. The sample must be transported following standards outlined in ASTM D 4220 "Practices for Preserving and Transporting Soil Samples." In addition, the sample shall be left to cure for a minimum of one (1) week, but not more than four (4) weeks. The sample shall be sent to an independent (not associated with the Permittee) laboratory to undergo an unconfined compressive strength test in strict accordance with the testing procedure standard ASTM D 2166-00. The shear strength shall be reported by the laboratory in accordance with the paragraph 3.2.2 of this test as ½ the compressive stress at failure. In lieu of off-site testing, Permittee may conduct the unconfined compressive strength test on site in strict accordance with the testing procedure standard ASTM D 2166-00 using qualified personnel.

The name(s) of person(s) who performed sampling, location (slab XYZ coordinates), sampling depth, equipment used, date of sampling, sampled waste designation, complete sample description (a photograph, diameter, recovered length, discontinuities, visual observations, any encountered problems, cure time, etc.) and laboratory test results must be all recorded in a dedicated document titled "Cell M – In-situ Waste Shear Strength Testing Report." This report must be submitted to the Ohio EPA every 6 months from the effective

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date of this permit, within 15 days from the last day of the respective 6 month sampling period.

(ii) In case that the reported shear strength is less than 2000 psf, the Permittee must, within 60 days of the original sampling date, re-sample the area by taking a minimum of three (3) core samples within the same slab. (As an alternative, the Permittee may take these additional samples at the same time when the required monthly sample is taken, and keep in case they are needed.) If ASTM D 2166-00 tests show that the median shear strength of the additional samples is equal or above 2000 psf, the Permittee can continue with operations in this area. If the median shear strength of the additional samples is below 2000 psf, the Permittee must discontinue waste disposal in this area and submit within 90 days from the original sample date a plan to Ohio EPA detailing the measures to be taken in order to return to compliance with the 2000 psf shear strength requirement.

(iii) If twelve (12) consecutive tests show that the 2000 psf shear strength requirement has been met at all times, the testing frequency may be lowered to one (1) test every two (2) months. In case of any subsequent failure requiring submittal of a plan of action per condition J.2.(s)(ii), the Permittee shall return to one (1) test per month until the results of twelve consecutive tests show that 2000 psf shear strength standard has been met; thereafter, a reduced frequency of testing as indicated above may be implemented.

(iv) Within 90 days of permit issuance, the Permittee must submit a Class 1 permit modification, in accordance with OAC Rule 3745-50-51, to revise applicable portions of the application to be consistent with the requirements outlined in this condition.

J.3. <u>Containment and Detection of Releases</u>

(a) The Permittee must monitor, operate, and maintain the primary leachate collection system (PLCS) and secondary leachate collection system (SLCS), as applicable, of Cell M.

(i) The level of leachate accumulation on the primary synthetic liner, excluding the sumps, must not exceed the height of one foot, as required by OAC Rule 3745-57-30(A)(2), except for temporary

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excursions in Cell M when leachate infiltration rates temporarily exceed the capability of the PLCS pumps. Compliance will be evaluated in accordance with Permit Condition J.7(c).

(ii) To minimize the potential for excursions, the Permittee must activate the PLCS pumps whenever the leachate levels on the liner exceed 10 inches above the primary liner as defined in Appendix D.5 for each sub-cell in Cell M.

(iii) The Permittee must return to a leachate level of less than 12 inches as defined in Appendix D.5 for each sub-cell in Cell M after a temporary excursion by operating the PLCS pumps in the affected landfill collection sumps 24 hours per day, 7 days per week.

(b) The Permittee must monitor the quality of leachate pumped from the PLCS, where applicable, of each cell in accordance with Permit Condition J.7(e).

(c) The Permittee must monitor the SLCS for the presence of liquid. If commercially available level monitoring equipment (e.g., transducers) cannot be inserted into specific sub-cell sumps because of space constraints within a SLCS riser pipe, then the Permittee must monitor for the presence of liquid on a semi-weekly (Sunday through Saturday) basis by activation of the sub-cell pump until pump cavitation occurs or liquid flow ceases. If activation of the pump produces no liquids, then the Permittee will verify that the pump is operable before concluding that no liquid is present in the sub-cell sump. If the pump is found to be inoperable, then the Permittee must repair or replace it as appropriate to restore pumping capability.

(d) The Permittee must monitor the PLCS and SLCS of Cell M for the production of liquid. When a sub-cell that is not capped or closed that normally produces liquid every week produces no liquid for two sequential calendar weeks, the Permittee will, unless liquid production has resumed, verify that the pump and its control system are operable before concluding that no liquid is present in the sub-cell sump. If the pump or its control system is found to be inoperable, then the Permittee must repair or replace it as appropriate to restore pumping capability.

J.4 Operating Requirements

The Permittee must conduct landfill operations according to the approved practices and procedures set forth in Section D of the permit application and the terms and conditions of this permit including, but not limited to, the following:

(a) trucks carrying wastes into a cell must be swept or brushed to remove all visible particles of waste from the tires and exterior of the bed prior to leaving the facility. Truck tires and frame that come into contact with hazardous waste must be decontaminated prior to leaving the facility;

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(b) unloading of wastes into Cell M must be halted and mitigative steps must commence to minimize wind dispersal of waste whenever wind speed is high enough to blow wastes out of the cell;

(c) the Permittee is authorized to conduct treatment within Cell M in accordance with the procedures outlined in Section D-4 and D-5 of the permit application. Authorized treatment of waste within the cell will be prohibited when there is a potential to generate fugitive dusts that could migrate beyond the landfill's perimeter; and,

(d) the Permittee must continue to monitor the temperature of incoming bulk waste loads. If such temperature is less than 20 degrees Fahrenheit below the waste's flashpoint, the load must either be rejected or not disposed in the landfill until the temperature reaches the desired range.

(e) Wastes containing PCBs accepted in accordance with Permit Condition J.1(d)(v)(a) must be handled in the following manner:

(i) Treated by the Permittee in the Stabilization /Containment Building to meet LDR standards in OAC 3745-270-49 prior to disposal in the landfill, and;

(i) Following placement of treated waste in the landfill, the Permittee must cover the exposed surface of the waste with a daily cover material by the end of the working day. Suitable cover materials include soil, synthetic materials such as tarps, or spray-applied cover systems in general use for landfill systems.

J.5 Inspection Schedules and Procedures
OAC Rule 3745-57-05

(a) The Permittee must inspect Cell M in accordance with the Inspection Schedule found in Section F of the permit application and must complete the items in Permit Conditions J.5(b) and J.5(c) as part of those inspections:

(b) Inspections during construction of landfill components, including but not limited to subsoil foundations, clay and synthetic cover and liners, leachate collection and leachate detection systems must be conducted in accordance with OAC Rules 3745-54-15, 3745-54-31, 3745-57-01, quality assurance and the inspection plans contained in the permit application, and the terms and conditions of this permit.

(c) The Permittee must inspect the following components of the landfill weekly and after storm events (2 inches or more of rain in 8 hours):

(i) deterioration, malfunctions, or improper operation of run-on and run-off control systems;

(ii) proper functioning of wind dispersal control system; and

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(iii) the presence of leachate in and proper functioning of leachate collection and removal systems, where present.

(d) The Permittee must document compliance with Permit Condition J.5 in the operating record of the facility.

(e) The Permittee must record the amount of liquids removed from each leak detection sump at least once a week during the active life and closure period of the landfill. After final cover (cap), the amount of liquids removed from leak detection sumps must be recorded at least monthly. Additional conditions of reporting requirements listed in OAC 3745-57-05 (C)(2) are incorporated by reference.

(f) The Permittee must perform the transducer maintenance check procedures described in Appendix D.19 for the leachate collection system in Cell M.

J.6 Response to Releases
OAC Rule 3745-57-03

(a) The Permittee must follow the Response Action Plan (RAP) found in Appendix D.32 of the permit application, which contains procedures for detecting, mitigating, notifying, and reporting leakage into the leak detection system present between the synthetic liners.

(b) Upon the discovery of leakage or an imminent hazard of leakage, the Permittee must notify the director in accordance with the RAP and must expeditiously repair the damage to the liner system. Upon discovery of a tear or puncture in the liner system, the Permittee must notify the Ohio EPA on-site inspector and must expeditiously repair the damage. Within seven days after the completion of the repairs, the Permittee must complete and file a "Liner System Repair Report," and "Certification of Liner System Report," into the facility's operating record, both of which must be certified in accordance with OAC Rule 3745-50-42(D)(1).

(c) If the cell or sub-cell is active and the Permittee cannot implement the RAP, then the Permittee must cease waste disposal activity in this cell or sub cell.

J.7 Recordkeeping and Reporting
OAC Rule 3745-57-09

(a) The Permittee must maintain the following items in the facility's operating record in accordance with OAC Rule 3745-57-09:

(i) on a map, the location and dimensions, including depth, of each landfill cell with respect to permanently surveyed benchmarks;

(ii) the contents of each landfill area and each waste's approximate location within the landfill; and,

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(iii) the waste's identification cross referenced to the manifest document number.

(b) For each operating day, the Permittee must record in the facility's operating record:

(i) measurements of wind direction;

(ii) average and maximum wind speed; and,

(iii) precipitation accumulated over the previous 24 hour period.

(c) The Permittee must record leachate level readings in the Cell M subcells at the beginning of each working day and after completion of operator-assisted leachate storage or shipment activities at the end of each working day. The start time and end time of each working day is documented on inspection form MF-18b. These leachate level readings will be used to evaluate compliance with Permit Condition J.3(a)(i) and OAC Rule 3745-57-03(A)(2).

(i) In evaluating compliance with Permit Conditions J.3(a)(i), (ii) and (iii), Ohio EPA will consider factors such as power failures, equipment failures, maintenance activities, the safety of personnel or the environment, declared Level 2 or 3 snow emergencies affecting availability of transportation, or the consequences of other natural or manmade disasters.

(d) The Permittee must report to Ohio EPA on a monthly basis, the following information related to the primary and secondary leachate collection and removal systems of Cell M:

(i) daily on-site rainfall measurements;

(ii) as applicable, any daily operational problems associated with the systems (e.g., pumps inoperable, transducers inoperable, etc.);

(iii) daily leachate level readings for each sub-cell in Cell M recorded in accordance with Permit Condition J.7(c); and,

(iv) daily volumes of leachate removed from the systems.

(e) The Permittee must provide to Ohio EPA analytical results of leachate from each sub-cell annually. Parameters to be tested are listed in Table K-1 (Constituents with Specified Comparison Standards), K-2 (Constituents with Comparison Standards) and K-3 (Ground Water Quality Parameters) of this permit.

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(i) The Permittee must annually test leachate from each sub-cell used to dispose of waste containing PCBs in accordance with Permit Condition J.1(d)(v)(a) for total polychlorinated biphenyls (PCBs).

J.8 Closure and Post-Closure Care
OAC Rules 3745-57-10, 3745-55-17, 3745-55-19, and 3745-55-20

(a) At closure of the landfill, the Permittee must follow the procedures in the closure plan in Section I of the permit application.

(b) After final closure, the Permittee must comply with all post-closure requirements contained in OAC Rules 3745-55-17, 3745-55-20, and Section I of the permit application; and, must provide maps, charts, and other required records to the director and the local land authorities as required by OAC Rule 3745-55-19(B)(1)(c).

J.9 Special Provisions for Ignitable or Reactive Wastes
OAC Rule 3745-57-12

The Permittee must not place ignitable or reactive waste in the landfill, unless the procedures specified in the permit application are followed, the waste and landfill meet all applicable requirements of OAC Chapter 3745-270, or compliance with OAC Rule 3745-54-17(B) is achieved. The Permittee must document compliance with this condition and place it in the operating record.

J.10 Special Provisions for Incompatible Wastes
OAC Rule 3745-57-13

The Permittee must not place incompatible wastes, or incompatible wastes and materials, in the same landfill unless the procedures specified in the permit application and OAC Rule 3745-54-17(B) are followed. The Permittee must document compliance with this condition and place that documentation into the operating record.

J.11 Special Requirements for Containers
OAC Rule 3745-57-15

The Permittee must meet the requirements of OAC Rule 3745-57-15, Section D of the permit application, and the following requirements prior to the placement of containers of hazardous waste in the landfill:

(a) The Permittee must not dispose of containers in the landfill that are less than 90 percent full and hold free liquids unless the following conditions are present:

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SECTION D

PROCESS INFORMATION

(Consisting of TOC , Pages D-1 to D-195 and Appendices)

D.14 Soil Foundation Analysis D.14-1
D.15 Leachate Pump and Transducer Specifications D.15-1
D.16 Cell M Leachate Storage Tank System Foundation Analysis for Tanks D.16-1
D.17 Characteristics of Petroleum Refining Wastes D.17-1
D.18.1 Tank Shell Calculations and Data Sheets D.18-1
D.18.2 Description of Ancillary Equipment for Tanks D.18-12
D.19 Cell M Leachate Collection System Transducer Maintenance Check D.19-1
D.20 Specifications for Structural Concrete D.20-1
D.21 Coatings for Concrete Slabs/Curbs D.21-1
D.22 Response Action Plan for the Containment Building D.22-1
D.23 Geotechnical Report D.23-1
D.23.1 Narrative of Subsurface Investigation Performed at Proposed Cell I Site by .....
Toledo Testing Laboratory, Inc. D.23-51
D.23.1a Additional Soil Borings for Area I – 1986 ..... D.23-65
D.23.2 Logs of Borings Drilled at Proposed Cell I Site D.23-99
D.23.3 Laboratory Test Results D.23-141
D.23.4 Computer Printouts of Slope Stability Analyses D.23-280
D.23.4.1 Computer Printouts of Seismic Slope Stability Analyses D.23-351
D.23.4 Continued Computer Printouts of Slope Stability Analyses D.23-365
D.23.5 Settlement Calculations and Liner Analyses D.23-330
D.23.6 Longitudinal Cross-Sections of Soil Profiles D.23-347
D.24 Surface Water Management Plan D.24-1
D.25 Testing and Evaluation of Geosynthetic Lining Systems and
Components D.25-1
D.26 Analysis of Drainage Net Transmissivity Equivalency D.26-1
D.27 Laboratory Permeability Testing on Native Ohio Blue-Gray Clay Using a Leachate
Permeant ..... CBI
D.28 Reserved D.28-1
D.29 Geotechnical Investigations for Landfill Areas G and M D.29-1
D.30 Design and Operational Report for Cell G D.30-1

D.31 Cell M Operational Plans and Construction Details D.31-1
D.32 Double Liner System Response Action Plan D.32-1
D.33 Capacity Calculations D.33-1
D.34 Foundation and Floor Calculations D.34-1
D.35 Containment Building Stress Calculations D.35-1
D.36 Tank Certification Forms D.36-1
D.37 Mixing Duration ..... CBI
D.38 Mix Reagents ..... CBI
D.39 Typical Debris Processing Equipment ..... CBI
D.40 Demonstration Program (Campaign Bin) Stabilization ..... CBI
D.41 Guidelines for Design and Construction of Privately Owned Industry Tracks D.41-1
D.42 Tank Foundation Design and Secondary Containment Calculations D.42-1
D.43 Rail Spur Calculations D.43-1
D.43.1 Geotextile and Geomembrane Calculation D.43-1
D.43.2 Buried Pipe Strength Calculations D.43-9
D.43.3 Buckeye Pipeline Design Criteria D.43-17
D.44 Listing of Enhancements in the Stabilization/Containment Building Leachate Storage Tank System (S-100, S-200, S-300, and S-400) D.44-1
D.45 Site Storage Area Containment Volume Calculations D.45-1
D.46 Tank System Installation, Inspections, and Operations D.46-1
D.47 Rail Spur Construction Specifications and Construction Quality Assurance D.47-1
D.48 Equipment Decontamination D.48-1
D.49 Encapsulation Processes and Procedures ..... CBI
D.50 Stabilization Mix Design ..... CBI

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APPENDIX D.19

Cell M Leachate Collection System Transducer Maintenance Check

(Consisting of a Cover Sheet and pages D.19-1 through D.19-2)

CELL M LEACHATE COLLECTION SYSTEM TRANSDUCER MAINTENANCE CHECK

The Cell M Leachate Collection System electronic liquid level transducers will undergo routine maintenance procedures throughout the calendar year as dictated by the usual and expected equipment malfunctions that occur. Each subcell in which level transducers are installed is equipped with a bellows unit and a desiccant cartridge as recommended by the manufacturer. In addition to normal maintenance, the leachate level transducers in Cell M (those subcells equipped with an electronic liquid level transducer) will undergo, at least annually, a removal and physical inspection of the unit. Transducers that have been replaced during normal use during the current calendar year will not undergo an additional physical inspection within the same calendar year if there is no indication of a malfunction. When transducers are replaced, they are inspected and calibrated as described below. The physical inspection for transducers that have not been replaced during the current calendar year will consist of:

- cleaning the unit if it is corroded or plugged in a manner that might affect its performance.
- performing a calibration check of the unit by connecting the transducer to the electronic panel meter and submerging the unit into a measured (height) volume of water. This procedure is generally performed at two different water levels, approximately 12-inches and 36-inches (actual measurements will be taken with a measuring tape). The first measurement is used to adjust the calibration and the second measurement is used to verify the linearity of the calibration setting.

Following the physical inspection, transducers found to be in proper working order will be re-installed in each subcell in accordance with rod-length and elevation data for that subcell recorded in Appendix D.5, Cell M Transducer Certification Report. Transducers that are found to be defective will be replaced.

Desiccant cartridges and bellows units attached to the Cell M transducer level sensor vent cables will be inspected at least semi-annually during a calendar year. The physical inspection for cartridges and bellows units will consist of:

- examining the bellows unit, which is typically mounted inside the electrical panel housing. The bellows unit will be repaired or replaced if it is physically damaged.
- examining the desiccant cartridge for color changes indicating that it is saturated with moisture. The standard cartridge goes from light blue-(unused), to purple-(in use), to pink-(nearing end of useful life – replace cartridge soon), to white-(unit is spent; replace cartridge).
- due to the short shelf-life of desiccant cartridges stored at ESOI, the manufacturer (EPG Companies) has recommended ordering a replacement desiccant cartridge when an in-service cartridge is found to be indicating pink and is near the end of its useful life. This ensures that when the new cartridge is installed, it is fresh and should function for an extended period of time. Pink cartridges still function properly and can be safely used for a short period of time before they are replaced.
- desiccant cartridges will be changed at least annually. Desiccant cartridges that have been replaced during normal use during the current calendar year will not be replaced again within the same calendar year if there is no indication of a malfunction, i.e., the desiccant cartridge is indicating blue or purple.

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SECTION F

PROCEDURES TO PREVENT HAZARDS

(Consisting of TOC , Pages F-1 to F-50 and Appendices)

F-4 Typical Container Storage Record F-42
F-5 Typical Bulk/Containerized Waste Disposal Record F-42

Appendices

F.1 Reserved
F.2 Reserved
F.3 Reserved
F.4 Reserved
F.5 Reserved
F.6 General Site Inspection Forms
Daily: MF-02(a) (General Site & Landfill Area Daily Inspection)
Weekly: MF-05 (Scale Area Weekly Inspection)
MF-06 (Gates & Fences Weekly Inspection)
MF-07 (Container Storage Areas Weekly Inspection)
MF-09(a) (Landfill Area Weekly Inspection)
Semi-annual: D-19 (Transducer Equipment Maint. Inspection: Bellows-Desiccant)
Annual: D-19 (Transducer Equipment Maintenance Inspection: Transducers)
Annual: F-21 (Primary & Secondary Riser Pipes w/o Inserts)
F.7 Storage Tank Inspections
Daily: MF-03(a) (Leachate Storage Building Daily Inspection)
MF-17(c) (Wastewater Tank 403-404-LAB Daily Inspection Form)
MF-18(b) (F039 Leachate Tank Inventory Control Log)
Weekly: MF-04(a) (Leachate Storage Building Weekly Inspection)
F.8 Railcar Inspections
Daily*: MF-16(a) (Railcar Inbound Inspection)
MF-16(b) (Railcar Outbound Inspection)
Weekly: MF-16(c) (Rail Line Weekly Inspection)
* Days on which there is rail activity, only
F.9 Post-Closure Inspections

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Weekly:	PC-1 (Security, Landfill Cover / Leachate Systems, Signs, Waterline Inspection)
Monthly:	PC-2 (Monitoring Wells, Gas Venting Systems, Roadways, Storm Water Systems, Benchmarks & Monuments, Miscellaneous)
Quarterly:	PC-3 (Closed Land Disposal Areas)
Semi-annual:	PC-3 (Closed Cell Gas Venting Systems)
Annual:	PC-3 (Closed Areas Insects & Rodent Control)

F.10 Containment Building Inspections

Daily:	MF-02(b) (Containment Building Daily Inspection)
Daily	DTL-1 (Door Time Log)
Weekly:	MF-08 (Containment Building Weekly Inspection)
Monthly	SMP-1 (Stab Monthly Sump Log)
Annual:	F-4p (APC System Testing and Duct Inspection)

F.11 Additional Inspections

Weekly:	MF-11 (Safety and Fire Equipment Weekly Inspection)
	MF-12 (Miscellaneous Items Weekly Inspection)
	BLK (Black Tank Area Weekly Inspection)
	WL-100 (Waterline Weekly Inspection)
Monthly:	MF-13 (Monitoring Wells Monthly Inspection)
	MF-14 (Closed Sanitary Landfill Areas Monthly Inspection)

F.12 Inspections After Storms (2 inches in 8 hours, or more)

MF-04(a) (Leachate Storage Building Weekly Inspection)

MF-07 (Container Storage Area Weekly Inspection)

MF-08 (Containment Building Weekly Inspection)

MF-09(a) (Landfill Area Weekly Inspection)

MF-12 (Miscellaneous Items Weekly Inspection)

MF-14 (Closed Sanitary Landfill Areas Monthly Inspection)

PC-3 (Post-Closure Quarterly Closed Landfill Inspection Only)

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APPENDIX F.6

GENERAL SITE INSPECTION FORMS

(Consisting of a Cover Sheet & Inspection Forms - See page F.6-1)

LIST OF GENERAL SITE INSPECTION FORMS

Name of Inspection Form	Form No.	Use Cycle	Rev No.	Rev. Date
Site Daily Inspection	MF-02(a)	Daily	5	12-15-04
Scale Area Weekly Inspection	MF-05	Weekly	3	07-12-05
Gates & Fences Weekly Inspection	MF-06	Weekly	2	12-15-04
Container Storage Area Weekly Inspection	MF-07	Weekly	2	12-15-04
Landfill Area Weekly Inspection	MF-09(a)	Weekly	3	12-15-04
Riser Pipes Annual Inspection	F-21	Annual	6	12-15-04
Transducer Equipment Maintenance Inspection	D-19	Semi-annual + Annual	0	04-07-10

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Date: April 7, 2010
Revision No.: 0

TRANSDUCER EQUIPMENT MAINTENANCE INSPECTION FORM D-19
Frequency – Inspect SEMI-ANNUAL (Bellows & Desiccant), ANNUAL (Transducers)

Each Item Listed Shall be Inspected for Presence of a Potential Problem Which May Affect the Operation of the Unit, or Which May Lead to an Event Which Would Cause a Threat to Human Health or the Environment. Record the Outcome of the Inspection in the Space Provided and Provide any Observations as Appropriate. Any Deficient Items Shall be Marked, Reported and the Date and Nature of the Correction Noted. "Yes" is Not Acceptable, "No" is Acceptable; If an Item is Not Inspected, Check "NI". Inspect and Complete This Form Once During a Working Day (Midnight - Midnight). If You Correct a Problem (or Have it Corrected) During Your Inspection, Mark it "No", but Make a Note of it on the Form. Observation and Follow-Up is Required if The Outlined "Problem Found" (Yes) Box is Marked.

Bellows and Desiccant Inspection **(Semi-Annual)** *Replace Desiccant Cartridge if Pink or White in Color*

Date: ____/____/_____ Weekday _____ Inspector: _____

Time:_____ AM/PM Signed: _____

1) Inspect Bellows and Desiccant Cartridges. Replace/Repair Damaged Bellows, Replace Spent Cartridge.

Inspection Items/Potential Problems? ……→	Yes	No	NI	Observations
a) M-1 Primary	☐	☐	☐	
b) M-2 Primary	☐	☐	☐	
c) M-3 Primary	☐	☐	☐	
d) M-4 Primary	☐	☐	☐	
e) M-5 Primary	☐	☐	☐	
f) M-6 Primary	☐	☐	☐	
g) M-2 Primary Backup	☐	☐	☐	
h) M-5 Primary Backup	☐	☐	☐	
i) M-6 Primary Backup	☐	☐	☐	
j) M-1 Secondary	☐	☐	☐	
k) M-4 Secondary	☐	☐	☐	
l) M-5 Secondary	☐	☐	☐	
m) M-6 Secondary	☐	☐	☐	

Transducer Maintenance **(Annual)** *Enter Date of Last Replacement or Calibration for This Calendar Year*

Date: ____/____/_____ Weekday _____ Inspector: _____

Time:_____ AM/PM Signed: _____

2) Remove Transducer, Inspect for Damage, Check Unit Calibration and Re-install; Replace Unit if Defective.

Inspection Items/Potential Problems? ……→ *Enter Date Last Replaced or Calibrated This Year, Mark "NI"*	Yes	No	NI	Observations *Mark "NI" if Not Inspected*
a) M-1 Primary _____	☐	☐	☐	
b) M-2 Primary _____	☐	☐	☐	
c) M-3 Primary _____	☐	☐	☐	
d) M-4 Primary _____	☐	☐	☐	
e) M-5 Primary _____	☐	☐	☐	
f) M-6 Primary _____	☐	☐	☐	
g) M-2 Primary Backup _____	☐	☐	☐	
h) M-5 Primary Backup _____	☐	☐	☐	
i) M-6 Primary Backup _____	☐	☐	☐	
j) M-1 Secondary _____	☐	☐	☐	
k) M-4 Secondary _____	☐	☐	☐	
l) M-5 Secondary _____	☐	☐	☐	
m) M-6 Secondary _____	☐	☐	☐	

Date and Nature of any Corrective Action(s):

_____

_____ Initials _____