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BROWN AND  
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January 10, 2008

Mr. Michael Guilfooy, P.E.  
Waste Management Division  
Department of Environmental Services  
P.O. Box 95  
29 Hazen Drive  
Concord, NH 03302-0095

134437.001

Subject: NCES Waste Control Evaluation

Dear Mr. Guilfooy,

Brown and Caldwell is pleased to present this Waste Control Evaluation Report (Report) which was prepared at the request of North Country Environmental Services (NCES) for the NCES Landfill (Facility) located in Bethlehem, NH. The Report was prepared to meet the requirements of an Administrative Consent Order issued by the New Hampshire Department of Environmental Services (DES). The purpose of the report is to assess the existing operations with respect to Best Management Practices (BMPs) and compliance with the New Hampshire Code of Administrative Rules for the prevention of the disposal of unauthorized waste. The Rules covering solid waste management facilities include chapters Env-Sw 100 through 2000 and Env-Wm 3900.

The Report is based on a review of the following information:

- The Facility Permit (DES-SW-SP-03-002), effective August 1, 2005;
- the Facility Operating Plan (dated July 28, 2005, Plan);
- Facility staffing (incl. training and certification);
- standard customer communications, including Rules and Regulations agreed to by customers, and informational packets typically provided to customers;
- Waste Inspection Logs for the period 10/1/2007 through 12/17/2007;
- the Unacceptable Waste Log for the dates 12/12/2005 through 12/14/2007;
- the Waste Customer Summary Report from 1/1/2007 through 12/14/2007;
- and,
- a draft copy of a revised Facility Operating Plan, dated November, 2007.

A site visit was conducted by Brown and Caldwell on December 17, 2007 to obtain documentation, interview employees working at the facility and observe operations at the scale and on the operating face of the landfill.

## **1. REVIEW OF DOCUMENTATION**

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### **1.1 FACILITY OPERATING PLAN**

The Facility Operating Plan (dated July 28, 2005, Plan) is the last approved operating plan as required under Env-Sw 1105.04(b) and described under Env-Sw 1105.11.

Section 2.0 of the Plan identifies Authorized and Prohibited Wastes. The list of authorized wastes provided in Section 2.1 of the Plan is not inclusive of all types of waste permitted for disposal at the Facility as identified in condition 7(d) of the operating permit. The descriptions of municipal solid waste (MSW) and construction and demolition debris (C&D) are similar to the definitions provided in Env-Sw 103.46 and 102.42, respectively. The list of prohibited wastes in Section 2.2 of the Plan is not inclusive of all types of waste prohibited from disposal at the Facility as identified in condition 7(e) of the operating permit. Additionally, the listed order of prohibited wastes in the Plan differs from the listed order of prohibited wastes identified in the permit<sup>1</sup>.

Section 3.2 of the Plan describes the access control procedures and on-site traffic control. The scale house operator is the individual responsible for monitoring traffic flow at the facility gate. Customers to the Facility are to be notified through signage of the types of wastes accepted at the Facility. The scale house operator will process the customer by recording the incoming weight of the vehicle and the customer's information and then directing the customer to proceed to the active face of the Facility. Signage will indicate the route to the active face. The equipment operator at the active face will direct vehicles to the proper location for the discharge of their waste using a Citizens' Band (CB) radio. After the load has been disposed, vehicles will return to the scale to weigh out. Weighing out generates a weight ticket which is then executed by the scale house operator and the vehicle driver.

Section 3.3 of the Plan describes the waste review, unloading and inspection procedures which are intended to limit the likelihood that prohibited wastes are disposed of at the Facility. These procedures include customer education, Facility operator training, signage and waste load inspections.

#### **1.1.1 CUSTOMER EDUCATION / COMMUNICATION**

Prior to delivering waste to the Facility for disposal, customers are required to accept and sign a copy of the Rules and Regulations for Facility Use (Rules), located in Appendix A of the Plan. This document identifies the responsibilities of the customer, operating procedures while on site, and

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<sup>1</sup> See 4.1, 1. for recommendation.

identifies waste which is acceptable at the Facility. The Rules require that vehicles being used to bring waste to the Facility be registered. This registration is updated on an annual basis.

The list of acceptable waste provided in the Rules is not inclusive of the authorized wastes identified in the permit. The list also utilizes a clause of exclusion which is not used in other Facility communications or in the Facility permit. Bulky wastes are indicated as both unacceptable and acceptable under Q.1.a) and Q.3 of the Rules and Regulations, respectively. Electronic wastes are similarly indicated in two locations (Q.1.c) and Q.4). The first location is an exclusion reference. The second location is a subheading under Acceptable Waste. The second location identifies electronic waste as banned within its description. There is no explicit indication of prohibited wastes<sup>2</sup>.

The Plan does not indicate when or how often customers are notified when the Facility Rules change<sup>3</sup>. In addition to the Rules, customers are also provided a DES produced informational packet on asbestos. The packet includes requirements related to asbestos abatement for contractors involved in demolition and renovation work.

### **1.1.2 NCES OPERATIONS PERSONNEL AND TRAINING**

Section 7.0 of the Plan provides specific information regarding staffing and training of NCES employees. NCES operations personnel meet the staffing requirements as defined in Env-Sw 1005.07. This includes maintaining the operator's certification through continuing education in an operator training update program. NCES employees receive additional training on prohibited waste recognition through on- and off-site training when the facility is closed. On February 21, 2007, 10 members of the operations staff attended an Asbestos recognition training class by Environmental Resource Return Corporation. On July 1, 2007, NCES operations manager Don Monahan instructed five of the operations staff on the new CRT disposal rules which went into effect that day. A sixth staff member attended a DES class on the subject of CRT disposal rules.

### **1.1.3 FACILITY SIGNAGE**

Facility signage was observed in two locations; a sign at the gate and signs at the scale. The sign at the gate identifies "Waste Material Accepted" as "Municipal Solid Waste," "Construction and Demolition Debris," and "Certain Non-Hazardous Special Wastes." Signs at the scale identify Facility

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<sup>2</sup> See 4.1, 1. for recommendation.

<sup>3</sup> See 4.1, 2. for recommendation.

rules and prohibited wastes. The list of prohibited wastes is not coincident with the list of prohibited wastes in the permit<sup>4</sup>.

### **1.1.4 WASTE LOAD INSPECTION PROCEDURE**

NCES instructs its operators to consistently observe incoming waste loads for the presence of unacceptable materials which may have been placed in a load. NCES instructs its operators to visually inspect all C&D loads for their suitability for processing as alternative daily cover.

NCES requires that five percent of incoming vehicles be randomly inspected on a daily basis. Consideration to vehicle selection for random inspection is given to the type of waste, accounts serviced, and whether the customer has a record of disposing prohibited wastes at the Facility, with Industrial special wastes given the most scrutiny.

No instructions as to how inspections are conducted are provided in the Plan. No descriptions of prohibited waste quantities that would constitute a failed load are provided in the Plan. No procedures for documenting the quantity of rejected waste are provided in the Plan<sup>5</sup>.

Sections 3.3 and 6.5 of the Plan provide the procedures to be followed when prohibited waste is discovered. The operator is instructed to contact the scale house operator and indicate the possible presence of prohibited waste. If the haul vehicle remains on site, it will be detained until it has been determined that the waste is acceptable. If the waste is unacceptable and does not represent an immediate threat to health or safety, the waste will be isolated by the operator and the customer will be requested to remove the waste. If the customer cannot be identified, NCES will evaluate the waste and determine appropriate procedures for management of the waste. If the waste constitutes "an immediate threat to health and safety", the waste will be left in place undisturbed and NCES will contact DES. The waste will be evaluated for proper handling and disposal and managed accordingly. Section 6.5 provides contact information for a company providing hazardous waste clean-up services.

Env-Sw 1005.09 requires an incident report on "all incidents or situations which involve an imminent and substantial risk to human health, safety or the environment or which constitute a violation of the solid waste rules or the facility permit." There is no requirement by rule or within the Plan for NCES to report the delivery of unacceptable waste, so long as the waste is not landfilled. The Plan does not specify how the Facility deals with common unacceptable wastes (e.g. tires, electronic waste,

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<sup>4</sup> See 4.1, 1. for recommendation.

<sup>5</sup> See 4.1, 3. for recommendation.

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white goods) or how the volume of unacceptable waste removed from the Facility is recorded<sup>6</sup>.

## **2. REVIEW OF OPERATIONS**

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### **2.1 WASTE ACCEPTANCE PROCEDURES**

The following observations were made during the site visit on December 17, 2007.

All vehicles observed arriving at the Facility weighed in on the scale and provided a description of their load (e.g. MSW, C&D). The drivers were directed to utilize a designated Citizens Band (CB) Channel for on-site communications. After weighing in, vehicles were directed to queuing areas, or directly to the operating face of the landfill. A separate radio channel was utilized by the facility for communication between facility operators. The scale house operator notified the lead machine operator on the operating face that a vehicle is en route, providing a description of the vehicle and the type of waste being disposed of. When vehicles left the scale their movements were directed by the lead operator over the CB radio.

At the operating face the lead operator directed vehicles to locations for waste deposition. Depending on the condition of the waste (e.g. baled, frozen, etc.), an excavator was utilized to aid the vehicles with waste deposition. Operators were attentive to the composition of waste being deposited. The operators were in communication with the scale house confirming the waste composition.

All vehicles observed leaving the Facility weighed out on the scale prior to leaving the facility. Drivers were observed exiting their vehicle to obtain a load ticket and to sign an affidavit that their load was in compliance with the authorized waste requirements in effect at the facility. A total of 27 vehicles delivered waste to the Facility on the day of the site visit.

During the site visit, a whole tire was deposited on the landfill's active face. This was the only waste ban item noted by the observers. The operators removed the tire from the active face and placed it away from traffic on the plateau above the active face. During the site visit, no loads were rejected.

### **2.2 WASTE INSPECTIONS**

The following observations were made during the site visit on December 17, 2007.

During the site visit information regarding the frequency and method of determining which vehicles would be subject to random inspections was requested. The lead

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<sup>6</sup> See 4.1, 3. for recommendation.

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operator indicated that on a typical day he would attempt to inspect a roll-off, a packer truck and a transfer trailer. Three inspections were completed on the date of the site visit. The first inspection was of a Casella owned trailer delivering mixed MSW and C&D waste. The second inspection was of a locally hauled roll-off delivering mixed MSW and C&D waste. The final vehicle inspected was an independent transfer trailer delivering mixed MSW and C&D waste. The third inspection was observed during the site visit. The lead operator located his compactor above the active face on the approach plateau. The vehicle designated for inspection was instructed to begin depositing its load on the approach plateau, near the active face. A second operator utilized a compactor to spread the deposited waste in one-foot (1') thick lifts on the approach plateau over an area approximately 15' wide by 70' long. The lead operator observed the waste deposition and spread from the elevated walking area outside the cab of his compactor. When the entire load was deposited on the plateau and spread, the lead operator walked around the circumference of the waste pile for closer observation of the material. No prohibited waste was found during the inspection. At the conclusion of the inspection, the operators proceeded to relocate the waste to the active face. The vehicle proceeded to the scale for weigh out.

Separately, the lead operator was asked to describe how he conducted inspections. The verbal description corresponded to what was observed to take place.

A review of the waste inspection logs from 10/1/07 through 12/17/07 indicates that a disproportionate number of inspections (76%) were conducted between 7am and 11am, and that the number of inspections decreased for each quarter of the day. The review also indicates that during this time period, MSW, C&D, mixed MSW and C&D, and special waste loads were inspected. The review further indicates that Casella vehicles 4300 and 4480 were inspected more often than other vehicles.

### **2.3 UNACCEPTABLE WASTE LOG**

Review of the unacceptable waste log shows significant quantities of electronic waste being brought to the Facility for disposal after the CRT disposal ban became effective on July 1, 2007. Casella vehicles 4300 and 4480 and Waste Management vehicle 409330 were noted as delivering unacceptable waste to the Facility more frequently than other haulers. There were 78 recorded instances of unacceptable waste delivery to the Facility from 1/1/07 through 12/14/07 with over 12,000 waste deliveries during the same time period. One inspection documented the delivery of unacceptable waste which was not noted in the unacceptable waste log.

### **3. ASSESSMENT OF OPERATIONS**

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The waste acceptance and rejection procedures, as observed at the Facility on December 17, 2007, meet the Best Management Practice (BMPs) standards utilized at solid waste disposal facilities, and are compliant with the New Hampshire Code of Administrative Rules for the prevention of the disposal of unauthorized solid waste. These procedures include the recognition of registered customers, on-site communications, attention to waste characterization and inspections of waste.

NCES personnel were observed to be generally attentive in characterizing waste while the waste was being discharged and applied to the active face. The observed inspection was thorough and methodical.

An assessment of customer compliance with disposal restrictions finds that the majority of customers are compliant with restrictions on acceptable waste. A small number of delivery vehicles associated with local routes have a higher occurrence of unacceptable waste delivery to the Facility. This is not a surprising result as waste delivered from a transfer facility has already been put through a cursory inspection, at minimum, while local routes may include unsecured and unmonitored containers. The Facility appears to have responded by inspecting some of these vehicles handling local routes more frequently.

### **4. RECOMMENDATIONS**

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#### **4.1 DOCUMENTATION**

1. The characterization of authorized and prohibited wastes should be done in a clear and consistent manner through all Facility documentation and signage. This will reduce the potential confusion caused by unclear or contradictory descriptions of authorized or prohibited wastes. Should the Facility choose to list prohibited items which are not explicitly listed in the Facility permit, its list should remain consistent through all documentation and signage which convey information on prohibited wastes to customers or employees.
2. The Plan should document a time period within which or a date on which all customers who have vehicles registered at the Facility will be contacted if there are any changes to the lists of either authorized or prohibited wastes. The Plan should also incorporate the requirement of annual registration and renewed agreement to the Facility Rules for all customers that is currently required, though only noted in the Rules.

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3. The Facility Plan should provide specific instruction for proper inspection procedures. The Facility Plan should provide specific instruction as to how common unacceptable wastes (e.g. tires, electronic wastes, white goods) are disposed of when the hauler is unknown or unavailable to remove the items from the Facility. The quantities of these wastes should be documented when they are removed from the Facility premises.
4. The Plan should require that response letters are generated when prohibited waste is brought to the Facility for disposal. The letter should inform the generator and/or hauler of the delivery of unacceptable waste and remind the customer of the Rules regarding disposal at the Facility.
5. The Facility Plan should specify the quantity or percentage of prohibited waste in a delivered load that will result in a determination that a load "fails" and cannot be accepted for disposal at the Facility.
6. The Facility Plan should require that the following records be maintained:
  - a) quantities of rejected or diverted waste;
  - b) records of customer contact regarding prohibited waste; and,
  - c) records of fines or penalties imposed to offending customers.
7. The Facility may consider requiring additional documentation from local route generators/haulers producing C&D for disposal at the Facility. Requiring the following documentation would provide the operator on the active face foreknowledge of what type of waste to expect at the face. This foreknowledge would allow the operator to quickly determine whether the load has the potential for certain prohibited wastes and if the load was accurately described. This documentation could include:
  - a) statement from the hauler/generator that the C&D is either new construction debris or demolition/renovation debris; and,
  - b) if the debris is demolition/renovation debris, an affidavit from an asbestos inspector as identified in Env-A 1804.01(b), stating that the source of the debris does not contain asbestos.

## **4.2 COMMENTS ON THE DRAFT PLAN**

NCES drafted improvements to their operating plan and provided the proposed revisions for review and comment. Revisions pertinent to our review include:

- Section 2.2 Prohibited Wastes;
- Section 3.2 Access Control and On-Site Traffic Patterns;
- Section 3.3 Waste Review, Unloading and Inspection Procedures;
- Section 6.6 Receipt of Prohibited Waste;



- Section 7.0 Employee Training Program;
  - Section 8.0 Record Keeping and Reporting.
1. Section 2.2 Prohibited Wastes is improved by adding clearly stated contact information for the removal and disposal of unauthorized waste.
  2. The description for procedures to follow in the event of receipt of prohibited waste in Section 6.6 should replace the similar description in Section 2.2.
  3. Section 3.2 Access Control and On-Site Traffic Patterns more accurately describes the procedures in place than the current version of the Plan.
  4. Section 3.3.2.2 Special Waste Handling notes that “NCES staff” will visually inspect the special waste. Due to the nature of special wastes, BC recommends that an experienced operator with a Level III (or higher) New Hampshire DES Solid Waste Operator Certification (SWOC) be assigned to inspect special wastes.
  5. Section 3.3.5 Waste Unloading and Routine Inspection improves on the current Plan by expanding the routine inspection process to include all wastes.
  6. Section 3.3.6 Random Load Inspection requires a Level IV SWOC to implement the inspection. NCES currently has inspections of waste carried out by properly qualified individuals who have been trained to recognize prohibited wastes. A Level II SWOC with experience operating on the active face of the landfill should be qualified to handle routine Random Load Inspections. Being excessively restrictive of who is qualified for the task will result in delays in carrying out inspections and a general decrease in efficiency of Facility operations. Generally, the description of Random Load Inspections is a significant improvement over the current Plan.
  7. Section 6.6 Receipt of Prohibited Waste is improved through the description of the proper management of non-hazardous prohibited waste. Prohibited waste which leaves the site should be documented for weight and type of waste.
  8. Section 7.0 Employee Training Program is a significant improvement in formalizing the training administered to NCES employees. BC recommends that the Plan only specify certifications required by Rule (i.e. SWOC), unless the certification is intended to be a prerequisite to taking the job. Additional care should be taken to match the specific regulatory language describing staffing requirements.
  9. Section 8.0 Record Keeping and Reporting should include new documentation as described above.

### **4.3 OPERATIONS**

1. The Facility should provide the location of a disposal facility for disposal of prohibited waste to haulers carrying prohibited waste.
2. The Facility should require that response letters are generated when prohibited waste is brought to the Facility for disposal. The letter should inform the generator and/or hauler of the delivery of unacceptable waste and remind the customer of the Rules regarding disposal at the Facility.
3. The Facility should work to identify specific routes which have a higher tendency of producing unacceptable wastes for disposal at the Facility. If routes, or specific generators, are identified as "repeated offenders", the Facility should approach the generator for the purpose of educating the generator about prohibited wastes, including any alternative disposal sites for prohibited wastes routinely generated by the customer.
4. The inspection frequency should be further examined by the Facility to determine if the inspection rates for given periods of time matches the load frequency for that time period.


This concludes the Waste Control Evaluation Report for NCES.

It is our understanding that NCES will arrange a meeting between NCES, NHDES and BC to discuss the findings in the Report and any proposed revisions to the recommendations. If you have any questions concerning our findings, please do not hesitate to call myself, Barry Van Laarhoven, or J R Frey at (508) 923-0879.

Very truly yours,

BROWN AND CALDWELL



Alan Kirschner, P.E.   
Vice President

ARK:jrf

cc: Karen Flanders, Director of Environmental Compliance, NCES  
Chuck Myette, P.E., Vice President