

City of Laredo Landfill Permit Amendment 1693B
City of Laredo, Texas
Permit Amendment MSW Permit 1693B
Laredo, Texas
Webb County, Texas
August 2014
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PART IV
Site Operating Plan

**LAREDO LANDFILL
PART IV
Site Operating Plan**

TABLE OF CONTENTS

	<u>Page</u>
1.0 Introduction	1
2.0 Record Keeping Requirements	1
2.1 Annual Waste Acceptance Rate	3
2.2 Soil Liner Evaluation Report	3
3.0 Personnel Responsibilities and Training	4
3.1 Personnel Responsibilities	4
3.2 Personnel Training	7
4.0 Equipment	9
5.0 Site Development Sequence	10
6.0 Local, State, and Federal Regulations	10
6.1 Local Jurisdiction	11
6.2 State Jurisdiction	11
6.3 Federal Jurisdiction	11
7.0 Detection and Prevention of Disposal of Prohibited Wastes	12
7.1 Prohibited Waste Exclusion Program	12
7.2 Load Inspection Procedures	14
7.3 Managing Prohibited Wastes	14
7.4 Record Keeping	15
7.5 Training	15
8.0 Fire Prevention and Control	16
8.1 Fire Prevention	16
8.2 General Rules for Fire Incidents	17
8.3 Specific Fire Fighting Procedures	18
8.3.1 MSW Working Face Fire	18
8.3.2 Vehicle or Equipment Fire	18
8.3.3 Structure Fire	19
8.3.4 Tire Storage Area Fire	19
8.3.5 TCEQ Notification	19
9.0 Access Control	19
10.0 Safety/Unloading of Wastes	20
10.1 Site Safety	20
10.2 Unloading of Wastes	2021
11.0 Operating Hours	21
12.0 Site Signs	22
13.0 Control of Windblown Material	22
14.0 Protection of On-Site Utility and Easements	23
15.0 Benchmarks and Markers	23

16.0 Materials Along the Route to the Site	24
17.0 Disposal of Large Items	24
18.0 Air Criteria	25
18.1 Air Emissions	25
18.2 Odor Management Plan	25 26
19.0 Vector Control	26
20.0 Site Access Roads and Wet-Weather Operations	26
21.0 Salvaging and Scavenging	27
22.0 Endangered Species	27
23.0 Landfill Gas Management Plan	27
24.0 Abandoned Oil and Water Wells	28
25.0 Compaction of Waste	29
26.0 Daily, Intermediate, and Final Cover	29
26.1 Daily Cover	29
26.2 Intermediate Cover	30
26.3 Final Cover	30
26.4 Erosion of Cover	31
26.5 Cover Application Log	31
27.0 Surface Water Control	32
27.1 Ponding Water Prevention Plan	32
28.0 Special Wastes	32
28.1 Disposal of Industrial Wastes	32 33
28.2 Screening Plan	33
28.3 Leachate Handling	33
28.4 Inspection and Maintenance Schedule	34
29.0 White Goods & Tire Area (WGTA)	36
29.1 Acceptance & Analysis	36
29.2 Facility Generated Waste	36
29.3 Contaminated Water Management	36
29.4 Storage Requirements	37
29.5 Approved Containers	37
29.6 Record Keeping and Reporting Requirements	37
29.7 Fire Protection	37
29.8 Access Control	37
29.9 Unloading of Waste	38
29.10 Spill Prevention and Control	38
29.11 Control of Windblown Material and Litter	38
29.12 Overloading and Breakdown	38
29.13 Maintenance and Sanitation	38

28.4

List of Tables

Table IV.1 Training Requirements	8
Table IV.2 Laredo Landfill Equipment List	9
Table IV.3 Inspection and Maintenance Schedule	35

List of Figures

Figure IV.1: Organizational Chart

5

List of Attachments

- IV-1 Special Waste
- IV-2 Alternate Daily Cover
- IV-3 Forms

Demonstration of Stockpile adequacy: As noted, the typical size of the working face will be approximately 30,000 square feet. For covering this size of working face, the required stockpile will be 560 cubic yards.

The soil will be transported to the working face by scrapers or other on-site earth movers. The dozers will be used to distribute the soil across the working face to smother the fire within one hour of being detected. These pieces of equipment are maintained on-site as part of daily operations.

The following assumptions and calculations demonstrate the required distance from the working face that soil should be stockpiled to provide a 6" layer within one hour.

Calculations for demonstrating on-site storage and equipment sufficient to cover any waste not covered with six inches of earthen material within one hour as required by 30 TAC 330.129.

- Working Face is typically 30,000 square feet
- Six inches of cover over 30,000 square feet = 560 cubic yards
- Available equipment – 2 scrapers @ 20 cubic yards per scraper = 40 cubic yards
- Number of trips 560 cubic yards / 40 cy per trip = 14 trips per scraper
- Average speed = 10 miles per hours
- Time to cover working face 60 minutes
- Minutes per trip to cover in 60 minutes = 4.28 (60/14)
- Distance per trip (4.28/60) = 7.13% of an hour
- 7.13% x 10 miles per hour = 3765 feet covered per trip in 4.28 min
- 3765 feet / 2 for round trip = 1882' max distance to stockpile to cover 30,000 square feet with two scrapers with 560 cubic yards
- ~~Volume of daily cover: 560 cubic yards~~
- ~~Size of scraper: 20 cubic yards~~
- ~~Number of scrapers: 2~~
- ~~Number of trips: 28 (14 round trips per scraper)~~
- ~~Average Scraper speed: 10 miles per hour~~
- ~~Time to cover working face: 60 minutes~~
- ~~Distance from working face: 1,885'~~

8.2 General Rules For Fire Incidents

All site personnel will observe the following general rules in the event that a fire is detected at the site:

- Contact Solid Waste Manager or Landfill Supervisor.
- Contact the City of Laredo Fire Department by calling 911.
- Alert other facility personnel.
- Assess extent of the fire and possibilities for the fire to spread and alternatives for extinguishing the fire.

25.0 Compaction of Waste

Compaction of waste will be accomplished by repeated passages of a compactor over the waste material. Adequate compaction will be accomplished to minimize future consolidation and differential settlement and provide for the proper application of daily, intermediate and final cover. The compactor will compact and shape the waste in a working lift thickness of approximately 2' to 3' and will track on the material sufficiently to minimize voids to produce a compact mass.

Equipment will not be allowed to travel directly over the composite liner system or the granular leachate drainage system, but must move around to temporary access roads, placed waste, or the protective soil cover. The first 5' of waste placed over the liner and leachate collection system will be carefully placed and compacted to prevent any damage to the composite liner system, or the leachate piping system. To protect the liner, for the first 5' of waste over the liner, the City will avoid disposing of large construction materials or bulky waste.

26.0 Daily, Intermediate and Final Cover

26.1 Daily Cover

Cover will be placed each day of operation at a minimum of once per 24 hours on the top and sides of the exposed waste placed in the latest working area in the Type I disposal cells. Prior to converting the Type IV disposal area (Phase IV) to a Type I operation, and if only construction and demolition materials are disposed in this area, daily cover will be placed over the waste material at a minimum of once per week. The cover material will be comprised of 6" of clean, uncontaminated soil supplied to the working face site that is well-compacted and not previously mixed with garbage, rubbish or other solid waste. Alternative daily cover as described in the Alternative Daily Cover Operating Plan (See Appendix to this SOP) is also an approved daily cover option. The City is authorized to utilize posi-shell as an alternative daily cover. The approved plan and test results are presented in the appendix to the Alternative Daily Cover Plan. For soil material, a nominal thickness of 6" of daily cover material will be placed in one lift and compacted sufficiently to minimize rutting and erosion, prevent the blowing of waste materials, minimize odors and prevent access to the waste by insects, rodents, and other animals. Run-off from daily cover soil will be consistent with TCEQ rules. A more detailed discussion of interim run-on and run-off control is discussed in Attachment III-15. The smallest practical working face will be maintained during operations. To provide adequate daily cover of the working face the following procedures will be implemented by the Solid Waste Manager:

- The daily cover will be sloped to drain.
- The daily cover will be compacted with a minimum of two passes by a bulldozer or compactor to minimize infiltration of storm water, graded to drain and will not have waste visibly protruding through it.
- Visually verify during placement that an ADC (as approved by TCEQ) or soil a minimum of 6" of clean soil cover (compacted thickness) has been placed. The Solid Waste Manager (or his designee) will document, on a daily basis, the cover thickness and condition in the Cover Application Log.

the Solid Waste Manager or Landfill Supervisor that the work was accomplished as stated in the record.

Inactive areas with 6 inches of daily cover will be inspected monthly for erosion, ponded water seeps, protruding waste, or other detrimental conditions that may cause contaminated runoff from the daily cover. After a period of 180 days an additional 6 inches of earthen material not previously mixed with garbage, rubbish or other solid waste will be placed over the daily cover. This 12-inch thick layer of cover soil will be classified as "intermediate cover."

Table IV.3
INSPECTION AND MAINTENANCE SCHEDULE

Item	Task	Schedule
Fence/Gate	Inspect perimeter fence and gate for damage, gaps, intrusions, etc. Make temporary repairs within 24 hours (weather permitting) and permanent repairs within the time frame approved by the TCEQ regional office.	Quarterly
Emergency Equipment	Inspect availability of equipment for staff; fire extinguisher status; other required equipment	Quarterly
Emergency Equipment	Emergency & monitoring equipment, and communications or alarm systems	Quarterly
Windblown Waste	Inspect working fence area, wind fences, access roads, entrance area and perimeter fence for windblown waste. Clean up upon detection	Daily
Waste Spilled en route to the Landfill	Inspect entrance area, Highway 359 at least 2 miles in either direction from the site entrance for loose trash. Clean up upon detection	Weekly
Landfill Markers	Inspect all landfill markers for damage, color coding and general location. Correct or replace damaged markers within 15 days of discovery	Monthly
Site Access Road	Inspect access road for damage from vehicle traffic, erosion, or excessive mud and/or waste accumulation. Maintain, as needed with crushed rock or stone	Daily (Wet Weather)
Dust Control	Inspect for proper placement and presence of waste. Remedy deficiencies as needed.	Daily (Dry Weather)
Daily Cover	Inspect for proper placement and presence of waste. Remedy deficiencies as needed	Daily
Intermediate Cover	Inspect for erosion, vegetation or approved alternative and for presence of exposed waste. Remedy deficiency within 5 days, weather permitting	Monthly
Final Cover	Inspect for vegetation or approved final cover erosion, and for presence of exposed waste. Maintenance will be ongoing throughout the post-closure care period. Remedy deficiencies within 5 days, weather permitting.	Monthly
Erosion Control	Inspect the intermediate and final cover for signs of erosion. Damaged areas will be repaired within 5 days (weather permitting) of detection by restoring cover material, grading, compaction and / or seeding or sodding, or placement of approved erosion control measures.	Monthly
Disease Vector Control	Inspect landfill facility for insects and rodent populations and report them to the Solid Waste Manager.	Weekly
Ponding Water	Inspect landfill cover for potential ponding water locations. Grade and compact potential areas within seven days, weather permitting.	Weekly (following wet weather conditions)
Leachate	Measure depth of leachate in sump(s) or more frequently as required by the TCEQ	Once per quarter.

29.0 White Goods & Tire Area (WGTA)

The City has maintained areas at the Landfill for the acceptance of white goods for recycling and tires for temporary storage, chipping and recycling. In 2014, the City reported that it accepted 911 tons of used tires and 81 tons of white goods. The City does not anticipate any major changes in these quantities, except for increases generally associated with an increase in the population of the area. The City is expanding the permit boundary by approximately 3.1 acres for the location of its leachate storage tank, as well as areas for the acceptance and management of both white goods and used tires. The following section provides a description of how white goods and tires will be managed in this area which is referred to as the WGTA.

29.1 Acceptance & Analysis

The Gate Attendant has the responsibility to direct all vehicles entering the Landfill. Upon inspection of each load, the Gate Attendant will direct the driver to the appropriate location for disposal of the load. If either white goods or tires are detected in the load, the driver will be directed to either the Landfill or the White Goods & Tire Chipping Area (WGTA). The WGTA will be open during regular landfill operating hours.

The WGTA is secured through a fence located around the facility. The only access to the WGTA is an access road that requires the hauler to go through the scale house. Trained inspectors will direct the driver to the appropriate area for unloading of the white goods or tires. These inspectors will evaluate the white goods to assure they meet the requirements that only acceptable white goods as defined in 330.4. White goods are defined as large household appliances such as refrigerators, stoves, washing machines or dishwashers.

Tires will be accepted at the tire storage area. A trained inspector will assure that only acceptable automobile or truck tires are accepted at the Landfill. The City accepts passenger, truck and tractor trailer or special size tires. The employee has the authority to have unauthorized materials removed by the transporter, assess appropriate disposal fees, and have any unauthorized material removed by on-site personnel.

29.2 Facility Generated Waste

No white goods will be generated on-site. On a periodic basis, tires for trucks or other equipment will wear-out. Generally, these tires are replaced at the collection service center. These tires are then disposed of at the tire storage and chipping area.

29.3 Contaminated Water Management

The WGTA is designed to prevent storm water from entering the area through berms constructed around the area. These berms have been designed to prevent water from the 24 hour, 25 year storm event. The WGTA is also designed to prevent any storm water that comes in contact with either white goods or tires from running off into the storm water system. Any water that comes in contact with either tires or white goods is not considered “contaminated water” and will be allowed to drain off the site.

29.4 Storage Requirements

The 3.1 acres reserved for the leachate storage tank and the WGTA. It is estimated that approximately 3 tons of tires are accepted at the Landfill on a daily basis. Tires may be stored on-site for a period of 30 days before either being chipped, shredded or haul to a private processor. Ninety tons of tires, assuming a combined density .24 tons per cubic yard requires approximately 375 cubic yards of storage. An area approximately 50' x 50' can store approximately 770 cubic yards of tires, assuming a height of 25 feet.

A white goods storage area approximately 25' x 25' will also be reserved within the WGTA. The Landfill accepts an average of .22 tons (440 pounds) of white goods per day. The average weight of white goods is 170 pounds according to a Massachusetts Department of Environmental Protection Study. The 25' x 25' area will be sufficient to store over half a year's supply of white goods. The City will remove the white goods within a 30 day period of acceptance. They will be hauled to a processor or to the material recovery facility.

Any non-white goods or tire waste that is deposited at the WGTA will be taken to the landfill if it meets the definition of municipal solid waste. Unacceptable wastes, including refrigerators with refrigerants still in place, will not be accepted and the generator will be required to take the material out of the Landfill.

29.5 Approved containers

The only containers associated with the WGTA will be a small roll-off container for any incidental MSW accepted along with either tires or white goods. This material will be sent to the Landfill for disposal.

29.6 Record Keeping and Reporting Requirements

The City will maintain a record of the quantities of tires and white goods accepted and recycled on a quarterly basis. This information is reported in the quarterly report filed with the TCEQ as tons of material diverted. Annual reports will include the specific tons of tires and white goods diverted from the Landfill.

29.7 Fire Protection

Refer to the Fire Protection Plan in this SOP for details on fire protection at the WGTA.

29.8 Access Control

Access will be controlled to the WGTA through two means. First the area will be secured with a gated fence. Access into the area will only be allowed after the generator has been directed by the Gate Attendant to enter the WGTA. Trained inspectors will direct the generator to the appropriate location and monitor disposal of either tires or white goods.

29.9 Unloading of Waste

It is the responsibility of the generator to unload either the white goods or the tires. The inspector will have the responsibility to inspect loads and make sure that only acceptable tires or white goods are accepted. Periodically, the City will arrange for loads of either tires or white goods to be hauled from the storage area to either the material recovery facility or to a private processor.

29.10 Spill Prevention and Control

Spills of contaminated materials are not anticipated at the WGTA.

29.11 Control of Windblown Material and Litter

The only anticipated windblown material associated with either the tire storage or chipping operation and white goods storage area would be any incidental waste that would be in the roll-off container. This container will have a cover to reduce the potential of windblown material.

29.12 Overloading and Breakdown

There is no operational equipment associated with the white goods storage area.

The City has not selected a specific piece of equipment for the tire chipping or shredding operation. Once a piece of equipment has been selected, the City will undertake personnel training to properly operate and maintain the equipment. Equipment operating and maintenance documents will be placed in the Site Operating Plan.

29.13 Maintenance and Sanitation

On a daily basis, the WGTA will be inspected for any non-white good or non-tire wastes that may have been inadvertently disposed of at the site. These materials will be disposed of at the Landfill if they meet the definition of acceptable waste as defined in the SOP. Prohibited Wastes will be managed in accordance with the provisions of the SOP.

Any equipment that is required to be operated for the WGTA will be maintained in accordance with manufacturer requirements.

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**PART IV
Attachment 1
Site Operating Plan
Special Waste Management**

LAREDO LANDFILL

PART IV Attachment 1

TABLE OF CONTENTS

	Page
1.0 Introduction	1
2.0 Special Waste	1
3.0 Evaluation	2
3.1 Hazardous Waste Determination	2
3.1.1 Listed Wastes	23
3.1.2 Characteristics of Hazardous Wastes	3
3.2 Special Waste Acceptance Criteria	5
3.2.1 The Special Waste Form	67
3.2.2 Site Specific Evaluation	67
4.0 Pre-receipt and Record Keeping	78
5.0 Recertification Frequency	78
6.0 Disposal Procedures	78
6.1 Inspections	8
6.2 Disposal of Special Wastes	89
6.2.1 Leachate and Gas Condensate Disposal	89
6.2.2 Petroleum Contaminated Soils and Sorbents	13
7.0 Unauthorized and Rejected Waste Procedures	121 14
8.0 Emergency and Spill Contingency Summary 30 TAC § 330.171(b)(2)(D)	131 15
9.0 Record Keeping and Reporting	131 16
 List of Tables	
Table IV-A1 Special Waste Management Practices	91 10
Table IV-A2 Acceptable Petroleum Contaminated Soils	13

1.0 Introduction

The following Special Waste Acceptance Plan (SWAP) is designed to provide guidance to facility operators related to the acceptance, inspection and management of special wastes. The City is authorized to accept municipal solid waste as defined in TAC 303.3. The SOP defines actions to be undertaken for inspection, acceptance and disposal of municipal solid wastes. The SWAP specifically relates to the management of those wastes defined by TCEQ as “special wastes.” These special wastes are defined as “solid waste or combination of solid waste that because of its quantity, concentration, physical or chemical characteristics, or biological properties requires special handling and disposal to protect the human health or the environment.”

The TCEQ rules specifically state that the receipt of treated medical waste, dead animals, asbestos and certain empty containers do not require prior written approval, if managed in accordance with the provisions stated in the rules. Special waste not identified in 330.171 (c)-(d) require prior written approval from the ED before being accepted at the Landfill. It is understood that approvals will be waste-specific.

The SWAP addresses requirements of the TCEQ rules that allow site-specific authorization to accept special waste meeting acceptance criteria set forth in the SOP. ~~In general wastes determined to be nonhazardous as defined by the USEPA in 40 CFR Part 261 or by applicable state solid waste regulations including all applicable permit conditions for the facility, and meeting the acceptance criteria of the SWAP may be accepted at the Landfill.~~

The City understands that failure to operate the site in compliance with TCEQ rules or any special conditions imposed by the ED may result in revocation of the authorization to accept Class 1 Waste.

2.0 Special Waste

~~Special wastes that are allowed to be accepted at the Landfill include the following:
–Special waste as defined in 30 TAC 330.3(148) include the following:~~

- Hazardous waste from conditionally exempt small-quantity generators meeting the requirements of 30 TAC § 335.78
- Class 1 industrial non-hazardous waste
- Untreated medical waste
- Municipal waste water plant sludge, other types of domestic sewage treatment plant sludge and water-supply treatment plant sludge
- Septic tank pumpings
- Grease and grit trap wastes
- Wastes from commercial or industrial wastewater treatment plants; air pollution control facilities and tanks, drums or containers used for shipping or storing any material that has been listed as a hazardous constituent in 40 CFR Part 261, Appendix VII but has not been listed as a commercial chemical product in 40 CFR 261.33 (c) or (f);
- Slaughterhouse wastes;

- Drugs, contaminated foods, or contaminated beverages, other than those contained in normal household wastes
- Pesticides (insecticide, herbicide, fungicide or rodenticide) containers
- Discarded materials containing asbestos
- Incinerator ash
- Soil contaminated by petroleum products, crude oils, or chemicals in concentrations of greater than 1,500 milligrams per kilogram total petroleum hydrocarbons; or contaminated by constituents of concern that exceed the concentrations listed in Table 1 of 335.521(a)(1);
- Used oil;
- Waste from oil, gas, and geothermal activities subject to regulations by the Texas Railroad Commission when those wastes are to be processed, treated, or disposed of at a solid waste management facility; Waste generated outside the boundaries of Texas that contains:
 - Any industrial waste
 - Any waste associated with oil, gas, and geothermal exploration, production, or development activities; or
 - Any items listed as a special waste in this paragraph
- Used oil filters from internal combustion engines

3.0 Evaluation

Before accepting special waste for disposal at the facility, the waste generator must have the following: (1) TCEQ waste code (for industrial wastes), (2) TCEQ registration number (for industrial waste) (3) TCEQ authorization (if applicable), and (4) approved special waste form (a copy is attached to this Appendix). The Special Waste Form (SWF) can be obtained for the Laredo Solid Waste Department or online from the City's webpage. A completed copy of the SWF must be furnished to the City prior to delivery of the special waste. Each special waste must be evaluated to ensure that is acceptable for disposal at the Landfill. The following guidelines are provided to assist in reviewing special wastes.

3.1 Hazardous Waste Determination

Only waste determined to be nonhazardous as defined by the USA EPA in 40 CFR 261 or by applicable state solid waste regulations will be accepted at the Landfill.

Receipt of the following wastes does not require the strict review detailed in the Special Waste Evaluation Criteria as described in the SOP, provided the waste is handled in accordance with the operational procedures listed in Table IV-A1 - Special Waste Management Practices. The special waste identified below will be accepted in accordance with requirements of 330.171(b) and (c), and Part IV, Section 7.0 - Detection and Prevention of Disposal of Prohibited Wastes. Each waste will be visually observed and transporter shipping documents will be reviewed as required.

- Special waste from healthcare-related facilities treated in accordance with the procedures specified in 30 TAC 330.2101-330.1221 (related to Medical Waste

Management)

- Dead animals and/or slaughterhouse waste
- Deregulated asbestos-containing material (RACM) as defined in 40 CFR 61.
- Empty containers that have been used for pesticides, herbicides, fungicides or rodenticides
- Municipal hazardous waste from a conditionally exempt small quantity generator (CESQG), provided the amount of waste does not exceed 220 pounds (100 kilograms) per month per generator
- Sludges, grease trap waste, grit trap waste, or liquid wastes from municipal sources will be disposed of at the working face of the landfill, provided material has been, or is to be, treated or processed and the treated/ processed material has been tested, in accordance with Method 9094 (Pint Filter Liquids Test) as described in “Test Methods for evaluating Solid Wastes. Physical/Chemical Methods” (EPA Publication Number SW-846), as amended, and is certified to contain no free liquids.

Special wastes that may be accepted at the Landfill may include the following, with the provision that any ED approvals have been secured, the materials have been properly tested and screened and that they have been disposed of in accordance with methods outlined in Section 6.0 of this Special Waste Management Plan.

- Class 2 Industrial Wastes
- Class 3 Industrial Wastes
- Class 1 Industrial Wastes
- Materials from oil, gas and geothermal activities
- Soil and sorbent material contaminated by petroleum substances

3.1.1 Listed Wastes

“Listed wastes” are industrial wastes listed by name as hazardous by the USEPA. Any Listed Waste defined by the USEPA or TCEQ as “hazardous” will not be accepted at the Landfill. Listed Wastes are categorized by the USEPA in the CFR as the following:

- 40 CFR 261.31 lists 13 hazardous wastes resulting from non-specific sources. These include spent solvents, sludges, and similar materials. It is important to closely evaluate dried paints, paint strippings, and spray paint booth waste for the potential to fall under this category. If a waste falls under this category it is considered an F-listed waste.
- 40 CFR 261.32 lists 76 hazardous wastes resulting from non-specific sources. These wastes include various types of sludges, still bottoms spent catalysts, and other materials from specific industrial operations. If a waste falls under this category it is considered a K-listed waste.
- 40 CFR 261.33(e) lists 196 chemical products defined as acute hazardous wastes. If a waste falls under this category it is considered a P-waste.
- 40 CFR 261.33 (f) lists 200 chemical products that are classified as toxic wastes. If a waste falls under this category it is considered a U-waste.

3.1.2 Characteristics of Hazardous Wastes

6.1 Inspections

Each load of special waste delivered to the Landfill for disposal will receive a visual QA/QC inspection to verify contents and characteristics of the waste. The frequency of inspections is consistent with 40 CFR 264.303. In addition to visual QA/QC inspections, additional QA/QC testing, such as pH, ignitability and reactivity with water, may be performed on representative samples of the waste. QA/QC results will be recorded and maintained at the landfill office. The City recognizes that the ED may require visual screening as part of the Special Waste approval.

Wastes containing free liquids (as determined using the EPA Method 9095 Paint Filter Liquids Test) will be required to be stabilized to pass the paint filter test prior to acceptance and disposal in the Landfill.

The gate house personnel will contact the Landfill Supervisor that special waste has been delivered and the specific type of waste that has been accepted.

6.2 Disposal of Special Wastes

The following provides a description of management practices for all special wastes that may be accepted at the Landfill. Table IVA-1 provides a description of the waste and a description of management practices, including whether special equipment or personnel are required to manage the specific special waste types. The wastes identified in Table IVA-1 are listed under 330.171 (c) and may be accepted at the Landfill.

Wastes with strong odors, which may include dead animals and slaughterhouse wastes, shall be placed in a select area at the working face and covered with at least three feet of other solid waste or two feet of soil immediately upon receipt.

All requests for approval to accept special waste, including Class 1 waste, must include an operational plan and a contingency plan as required by 30 TAC §330.171(b)(2).

6.2.1 Leachate and Gas Condensate Disposal

Leachate and gas condensate may be recirculated at the Landfill in areas that have a standard Subtitle D liner. The recirculation plan is described in the Leachate and Contaminated Water Plan. In summary, these wastes are managed through one of the following methods.

Leachate can be managed through recirculation at the Landfill; however there are certain constraints on where the recirculation can occur and the quantities which can be recirculated. As discussed in 30 TAC 330.177, leachate may only be recirculated to cells which have a composite liner system consisting of a minimum of two-foot thick clay liner and a synthetic liner. Leachate may only be recirculated with alternative liner designs.

The recirculation will be accomplished by reintroducing the collected leachate back into the disposal unit. Typical recirculation methods include but are not limited to spray application on the working face, saturation fields and drip irrigation. Clean surface water or groundwater will

not be recirculated. The recirculation will be accomplished in a manner that prevents ponding or significant accumulations of leachate in any one area.

A typical approach for recirculation of leachate is as follows:

- A tanker truck such as a 3,000 gallon capacity water truck with a spray bar is filled either directly from the sump or from a temporary or permanent leachate storage tank;
- The tanker truck sprays leachate within the active area;
- The leachate truck is used to accept more leachate from sumps as necessary and process is repeated; and
- Leachate truck is emptied so potential for leachate or spillage is nonexistent.

Table IV-A1 presents a summary of management practices for special wastes that may be accepted at the Landfill.

Table IV-A1
Special Waste Management Practices

Waste	Description	Management Practices
Sludges	Sludges, grease trap waste, grit trap waste, or liquid waste from municipal sources will be accepted if the material has been treated or processed and has passed the paint filter test and is certified to contain no free liquids	Disposed at the active face of the Landfill consistent with the provisions of control and unloading of waste as described in the SOP.
Dead Animals	Dead animals or slaughterhouse waste	Dead animals and slaughterhouse wastes will be buried at the working face and covered with a minimum of 3 feet of other solid waste or a minimum of 2 feet of soil immediately upon receipt and disposal. Additional waste or soil cover will be added if objectionable odors are created by the disposed dead animals or slaughterhouse wastes.
Empty Containers	Empty containers, which have been used for pesticides, herbicides, fungicides or rodenticides will be accepted and disposed of in accordance with 330.171(c) (5)	Empty containers accepted at the working face will be covered by the end of the same working day they are received. Those containers for which triple-rinsing is not feasible or practical (e.g., paper bags, cardboard containers) may be disposed of by placing them in the working face and covering them with three feet of waste by the end of the day they were received. Containers from industrial locations must be classified as a

		Class 2 or Class 3 waste.
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Non-regulated Asbestos-Containing Materials	<p>Non-regulated asbestos containing materials</p> <p>RACM will not be accepted at the facility</p>	These non-RACM may be accepted for disposal provided the wastes are placed on the active working face and are covered in accordance with the SOP. Under no circumstances shall any material containing non-RACM be placed on any surface or roadway which is subject to vehicular traffic or disposed of by any other means by which the material could be crumbled into a friable state.
Class 2 Industrial Waste	<p>Class 2 Industrial waste is any individual solid waste or combination of industrial solid wastes that cannot be described as Class 1 or Class 3, as defined in 335.506. Examples of Class 2 Industrial Waste include “plant trash” or waste originating in the facility offices or plant production areas that re composed of paper and/or wooden packaging materials, glass, aluminum foil, aluminum cans, aluminum scrap, stainless steel, steel, iron scrap, plastics Styrofoam, rope, twine, uncontaminated rubber, uncontaminated wooden materials, equipment belts, wiring, uncontaminated cloth, metal buildings, empty containers with a holding capacity of five gallons or less, uncontaminated floor sweepings, or food packaging, that are produced as a result of plant production.</p>	Class 2 Industrial wastes as described in this table will be managed as municipal solid waste. As a Special Waste, however, they are subject to notification and screening protocols described in this Special Waste Management Plan.

Class 3 Industrial Wastes	Class 3 Industrial Solid Waste is defined as any inert and essentially insoluble industrial solid waste, including materials such as rock, brick, glass, dirt and certain plastics and rubber, etc. that are not readily decomposable as defined in 335.507 (related to Class 3 waste determination.	Class 3 industrial wastes that are accepted will be inspected per the requirements of this Special Waste Management Plan. Materials will be managed as municipal solid waste if found to be acceptable.
Class 1 Industrial Solid Waste	Class 1 Industrial Solid Waste that is defined as Class 1 only because of its asbestos content will be accepted	Disposed in the manner defined in this SOP <u>Class 1 non-hazardous industrial wastes will be inspected per requirements of this Special Waste Management Plan. The City will request ED approval prior to acceptance. Wastes will be managed as MSW if found to be acceptable.</u>
Health Care Facility Waste	Special Waste from Health care related facilities that have been treated in accordance with procedures specified in Subchapter Y of TCEQ regulations	Following inspection and screening, these materials will be accepted and managed as municipal solid waste
Materials from oil, gas and geothermal activities	Materials subject to regulation by the Texas Railroad Commission when these materials are to be processed, treated or disposed of at the facility	Disposed of at the active face consistent with the SOP. No specific equipment is required for disposal of this material.
Soil and sorbent material contaminated by petroleum substances	Materials as defined in 30 TAC 335.1 (related to definition of petroleum substances) or chemicals listed in 30 TAC 335.521(a)(1) related to constituents of concern and their maximum leachable concentrations)	Dispose of at the active face consistent with the SOP <u>6.2.2 of this section.</u>

Municipal hazardous waste from conditionally exempt small quantity generators	Hazardous waste from conditional small quantity generators meeting the requirements of 30 TAC 330.3(148)A	Disposed of at the active face consistent with the SOP
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Nonhazardous drugs, contaminated foods, and contaminated beverages	Nonhazardous drugs (not including manufacturing wastes) and contaminated food and beverages other than those continue d contained in normal household waste	Verify a minimum of 1 foot of waste or 6 inches of soil is placed over nonhazardous material.
Incinerator ash	Ash produced from incinerators	Verify disposal of ash material occurs on non-windy days
Abrasive wastes	Blasting grit, steel shot, etc.	Disposed of at the active face consistent with the SOP
Demolition debris contaminated with lead	Demolition debris contaminated with lead for structured which have received one or more coats of lead based paint	Disposed of at the active face consistent with the this SOP

6.2.2 Petroleum Contaminated Soils and Sorbents

Soil contaminated by petroleum products, crude oils, or chemicals (also referred to as petroleum contaminated soils) may be accepted for disposal without specific TCEQ approval only if they are tested as being under the limits specified in the following table.

Table IV-A2
Acceptable Petroleum Contaminated Soils

<u>CONTAMINANT</u>	<u>CONSTITUTENTS OF CONCERN</u>	<u>MAXIMUM CONTAMINANT LEVEL MUST BE LESS THAN</u>	<u>MINIMUM LANDFILL CRITERIA</u>
<u>Automotive Gasoline</u>	<u>Benzene</u> <u>TPH</u> <u>Lead²</u>	<u>0.5 mg/l¹</u> <u>1500 mg/kg</u> <u>1.5 mg/l¹</u>	<u>Dispose only in cells lined with an approved Subtitle D liner or a 3 foot clay liner</u>
<u>All Fuels</u>	<u>Benzene</u> <u>TPH</u> <u>Lead²</u>	<u>0.5 mg/l¹</u> <u>1500 mg/kg</u> <u>1.5 mg/l¹</u>	<u>Dispose only in cells lined with an approved Subtitle D liner or a 3 foot clay liner</u>
<u>Used Motor Oil from an Internal Combustion Engine</u>	<u>Benzene</u> <u>TPH</u> <u>Lead²</u>	<u>0.5 mg/l¹</u> <u>1500 mg/kg</u> <u>1.5 mg/l¹</u>	<u>Dispose only in cells lined with an approved Subtitle D liner or a 3 foot clay liner</u>

¹ An analysis of total contaminant level may be used as a screening tool prior to Toxicity Characteristic Leaching Procedure (TCLP). To determine the maximum total contaminant level at which a TCLP is not necessary, multiply the table limit by a factor of twenty. This formula is extrapolated from a twenty to one dilution factor when preparing TCLP samples for analysis (Title 40 Code of Federal Regulations, Part 261, Appendix II). If a contaminant total level exceeds twenty times the table limit (e.g. total lead >30 mg/kg, total benzene >10mg/kg, etc), then TCLP must be performed. Please note that this extrapolation is applicable only to solids.

² If it is known, through process knowledge, that the Automotive Gasoline and fuels did not contain lead, it is not necessary to test for lead.

To determine whether or not a soil meets the criteria listed in the table, one composite sample will be taken for every 50 cy of contaminated soil. The composite sample should be comprised of 4 separate grab samples from within the 50 cy. The person taking the sample should strive to obtain the most representative sample possible. All samples must be analyzed for total petroleum hydrocarbon (TPH). When additional parameters are required (benzene or lead) it is only necessary to analyze the sample which is determined to contain the highest level of TPH from each 200 cy of waste. For example, if there is 400 cy of contaminated soil, there should be eight samples tested for TPH, and the two samples with the highest TPH level from those samples should be analyzed for the additional parameters of concern. Laboratory detection limits must be less than or equal to the maximum contaminant levels listed in the preceding table for the analysis to be considered valid.

Acceptable soils contaminated with petroleum will be disposed at the active face in the same manner as other municipal solid waste. Additionally, the soil may be used as described in the approved Alternate Daily Cover Operating Plan. Soils which exceed the maximum allowable levels listed in Table IV-A2 of this report will not be accepted at the landfill.

Other soils contaminated by petroleum products, crude oils, or chemicals (not addressed in the table) will require specific authorization on a case-by-case basis prior to disposal at the Laredo Sanitary Landfill. Requests for authorization to dispose of contaminated soil will be accompanied by analytical data (including signed laboratory reports, chain-of-custody information, Quality Control Data, and a sampling plan) or data as required by the TCEQ.

7.0 Unauthorized and Rejected Waste Procedures

If it is determined that following the inspection of the waste, it is determined to be unacceptable, the hauler will be notified. Reasons for non-acceptance may include:

- An industrial or special waste arrives without a required waste manifest
- An industrial or special waste arrives and the waste material does not match the description on the waste manifest
- An industrial or special waste arrives and the waste differs from the approved waste based on the QA/QC review or other monitoring
- The volume of the waste is not consistent with the manifest for the load

The gate house attendant, Landfill Supervisor or Landfill Superintendent and waste generator shall work together to try and resolve waste discrepancies. All discrepancies must be resolved before the waste may be accepted for disposal.

In the event that a special waste load at the landfill gate is detained for possible rejection, the Landfill and the waste generator shall work together to try and resolve waste discrepancies. All discrepancies must be resolved before the waste may be accepted for disposal.

In the event that a special waste load at the landfill gate is detained for possible rejection, it will be detained at the landfill entrance. If the discrepancies cannot be resolved with the generator or hauler, the load will be rejected. The generator is then fully responsible for the load and its management.

In the event that a special waste load is found to be unauthorized upon its unloading, the waste will be segregated and/or isolated. The generators will be contacted to remove the unauthorized waste and any other materials contaminated by the unloading of the waste. If the rejected load could jeopardize the protection of human health or the environment, immediate containment and isolation of the waste will be conducted. The generator will be notified and the TCEQ Regional Office will be informed. Both the generator and the TCEQ will be involved in preparing the removal and remediation plan.

8.0 Emergency and Spill Contingency Summary 30 TAC § 330.171(b)(2)(D)

The following summary is presented for actions to be taken with respect to the possible special waste spills and or emergency situations. In the event that a special waste load is spilled in an area that is not the approved disposal area, the waste will be segregated and/or isolated. If the waste is approved for disposal, on-site equipment will be utilized to reload the spilled waste and any ground surface contamination by the waste, and transported to the approved disposal area. If the waste is found to be an unauthorized waste for disposal, the generator will be contacted to remove the unauthorized waste and any other contamination caused by its spilling. If the spilled waste could jeopardize the protection of human health or the environment, immediate containment and isolation of the waste will be conducted. The generator will be notified, a record will be made in the SOR and the TCEQ Regional Office will be informed. Both the generator and the TCEQ will be involved in preparing the removal and remedial action plan.

For incidental spills that do not pose a threat to waters of the state, operations staff will contain and clean up the spill using appropriate equipment at the direction of the landfill manager. For solids, site staff will use shovels, brooms, and/or heavy equipment to pick up spilled materials. For liquids, typical cleanup, materials would include oil dry, absorbent pads, or other available materials to contain the spilled material. Spill cleanup kits are maintained on site. Pumps might also be used, when appropriate, to transfer liquid material from the spill area into containers.

For larger spills, or where there is potential for the waste to impact waters in the state, the landfill manager will assess the situation and determine the appropriate means to contain and collect the material. If spilled material threatens to impact storm water discharge from the site, the landfill manager will use booms or diversionary dikes or excavate holes or pits as needed to contain the spilled material. Equipment typically available for spill response includes excavators, backhoes, dozers, pumps and haul trucks. In the event of a spill that cannot be picked up using handheld tools, this equipment will be used as needed to contain and collect spilled material. For larger spills, emergency cleanup contractor or vacuum truck company may be contracted to assist with cleaning up the spill. Once the liquids are removed, a visual

inspection of the spill area will be made, and soils observed to be potential impacted will be over-excavated and disposed with the collected material

9.0 Record Keeping and Reporting

Any and all documents, manifests, shipping documents, trip tickets, etc. involving special waste shall be maintained in the SOR.

**City of Laredo Landfill Permit Amendment 1693B
City of Laredo, Texas
Permit Amendment MSW Permit 1693B
Laredo, Texas
Webb County, Texas
August 2014**

**PART IV
Attachment 2
Alternate Daily Cover Operating Plan**

**LAREDO LANDFILL
PART IV
Attachment 2
Permit Amendment**

TABLE OF CONTENTS

	Page
1.0 Introduction	1
2.0 Description and Thickness of the Alternative Material	2
3.0 Effect on Vectors, Fires, Odors, and Windblown Litter	4
4.0 Application and Operational Methods	6
5.0 Chemical Composition of the Material	8
6.0 ADC Verification and Inspection Procedures	9

LIST OF APPENDICES

Appendix A Material Safety Data Sheets

Appendix B Posi-Shell ADC Demonstration

Appendix C Approved Alternative Daily Cover Plan and Demonstration

**LAREDO SANITARY LANDFILL
PERMIT NO. MSW-1693A
WEBB COUNTY, TEXAS**

ALTERNATE DAILY COVER OPERATING PLAN

PART IV - APPENDIX A

Prepared for:

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April 2006
Revision 2

SCS Project No. 16205024.00

(Note: Revision 1, August 9, 2002, was signed and sealed by J. Brian Dudley, P.E.)

TABLE OF CONTENTS

APPENDIX A - PART IV - ALTERNATE DAILY COVER OPERATING PLAN

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION.....	1
2.0 DESCRIPTION AND THICKNESS OF THE ALTERNATIVE MATERIAL	2
3.0 EFFECT ON VECTORS, FIRES, ODORS, AND WINDBLOWN LITTER.....	6
4.0 OPERATIONAL METHODS UTILIZED AT THE SITE WHEN USING THE ALTERNATIVE MATERIAL	9
5.0 CHEMICAL COMPOSITION OF THE MATERIAL AND MATERIAL SAFETY DATA SHEET(S) FOR THE ALTERNATIVE MATERIAL.....	12
6.0 OTHER FACTORS RELATED TO THE USE OF THE ALTERNATIVE MATERIAL.....	14

LIST OF APPENDICES

Appendix

- A Material Safety Data Sheets
- B Posi-Shell ADC Demonstration

1.0 INTRODUCTION

The Laredo Sanitary Landfill is operated by the City of Laredo. This document presents the Alternate Daily Cover (ADC) Operating Plan for the facility. This document is prepared in accordance with the requirements set forth in 30 TAC §330.133(c) and has several references to the EPA document entitled *The Use of Alternate Materials for Daily Cover at Municipal Solid Waste Landfills* by Frederick G. Pohland and Johannes T. Graven, July 1993.

The ADC operating plan includes the following as required by state regulations:

1. A description and minimum thickness of the alternate material to be used,
2. Its effect on vectors, fires, odors, and windblown litter and waste,
3. The application and operational methods to be utilized at the site when using this alternative material,
4. Chemical composition of the material and the Material Safety Data Sheet(s) for the alternative material, and
5. Any other pertinent characteristic, feature, or other factors related to the use of this alternative material.

The evaluation of the effectiveness of the different ADC materials will generally be based on comparisons with soil cover.

Alternate daily cover materials proposed to be used at this site are:

1. Synthetic material tarps, both reusable and sacrificial,
2. Shredded brush material,
3. Shredded or chipped tires,
4. Commercial foam products,
5. Dried water treatment screenings,
6. Construction-demolition wastes,

7. Petroleum contaminated soils, and
8. Slurry Tackifier (Hydromulch) or Cementitious Slurry.

Also, 30 TAC §330.133(c) requires submittal of quarterly status reports on a two-month basis for the ADC during the temporary authorization period. The duration of the temporary authorization period will be specified by the TCEQ. The quarterly status reports are to include information regarding the effectiveness of the alternative material, any problems that may have occurred, and corrective actions required as a result of such problems. In accordance with 30 TAC §330.133(c)(2), quarterly status reports will be eliminated if no unresolved problems occur during the temporary authorization period after four consecutive quarters of ADC use.

ADC may be used to cover waste except when the landfill is to be closed for a period greater than 24 hours, with the exception of Posi-Shell (cementitious slurry). Posi-Shell may be utilized as an ADC for periods greater than 24 hours, but less than 72 hours. A demonstration describing the effectiveness of Posi-Shell as an ADC for periods greater than 24 hours is provided in Appendix B of this ADC Operating Plan.

2.0 DESCRIPTION AND THICKNESS OF THE ALTERNATIVE MATERIAL

1. Re-Usable Synthetic material tarps. There are many re-usable synthetic tarps on the market. ENSTAR, manufactured by ENSTAR or an equivalent type-tarp will be utilized as long as it provides for the same vector and odor control, fire protection and control of windblown litter. A safety band is sewn around the edge to give the tarp extra strength for lifting. The typical thickness for this type of tarp (ENSTAR 6.5 oz) is 22 mils. The ENSTAR 6.5 oz tarp is a high density woven polyethylene coated fabric. Another synthetic tarp that provides equivalent waste coverage is DuraShield 12,000FR manufactured by THOR Tarp. This tarp also is woven polyethylene coated fabric that contains a fire retardant. Material Safety Data Sheets for any tarp materials used at the site will be kept at in the site Operating Record.

2. **Sacrificial Synthetic Tarps.** Sacrificial tarps of adequate thickness and durability such as ~~In-Line Plastics' 2-mil Advantage Cover~~ may also be used. ~~This material~~ Sacrificial tarps ~~is~~ are rolled out from equipment attached to landfill machinery to cover the waste. Edges are held in place by soil placed on the cover. The sacrificial tarps ~~cover is~~ are not removed prior to placing additional waste on the working face.
23. **Shredded brush material.** Brush material consists of shredded tree trimmings, grass clippings, and other garden wastes. The brush material will be shredded down to a size such that it has properties similar to that of a soil material. A 6-in layer of shredded brush material will be applied to the working face when used as a daily cover. This material will be mixed with on-site soils or petroleum contaminated soil (soil as outlined in Section 7-5.0 of this appendix) in order to reduce its potential as a fire hazard prior to its application at the working face.
34. **Shredded or chipped tires.** Used shredded or chipped tires will be shredded or chipped to a maximum size of 6 inches. Shredded tires may be processed at the landfill in accordance with Part IV, Appendix B – Tire Storage and Processing Facility (TSPF) Operating Plan. A 6-inch thickness will be utilized for this alternate daily cover material. This material will be mixed with on-site soils or petroleum contaminated soil (soil as outlined in Section 7-5.0 of this appendix) in order to reduce its potential as a fire hazard prior to its application at the working face. Alternatively, soil cover will be placed over the working face area at least every fourth day for additional fire protection.
45. **Commercial foam products.** Several foam manufacturers are available in the commercial market. Both hardening and non-hardening foams are available. The foam layers are effectively destroyed by the placement of additional wastes on the next operating day. Foams are applied mechanically to the working face by different methods depending on the product. The exact thickness will depend on the specific foams' specification for use. Examples of foams that may be utilized at the landfill include Rusmar and SaniFoam. The thickness used,

however, will be such that the waste is completely covered and fire, vectors, odors and windblown wastes are controlled.

56. **Dried water treatment screenings.** Dried screenings from water treatment plants (water treatment sludge) may also be utilized as an alternate daily cover. This material must be dried to a degree that it can pass the paint filter test and such that it has soil-like properties with regard to being "spreadable". The screenings will be placed to a 6-inch thickness.

Prior to acceptance of dried water treatment screenings from any source, the screenings must be properly documented as being acceptable for disposal at the Laredo Sanitary Landfill under the permit provisions (as described in Part IV, Appendix D – Special Waste Acceptance Plan) and TNRCC-TCEQ regulations. The screenings may be stockpiled prior to use ~~in any~~ over approved lined areas which will not conflict with operation of the surface drainage system. Runoff from stockpiles of screenings will be contained using berms and managed as leachate in accordance with Attachment 15.

67. **Construction-demolition wastes.** Construction-demolition wastes are defined as those wastes resulting from construction or demolition projects including all materials that are directly or indirectly the by-products of construction work or that result from demolition of buildings and other structures, including, but not limited to paper, cartons, gypsum board, wood, excelsior, rubber and plastics. No putrescible wastes will knowingly be included in any construction-demolition waste used as alternate daily cover.

Construction-demolition wastes have been sub-divided into three categories for this discussion since the required properties of the construction-demolition wastes used as daily cover depend on the incoming waste materials themselves.

If the incoming material consists of asphalt, rock, concrete, brick or other material the material should have an average size less than six inches and should be applied to a thickness

no less than 12-inches. If these materials have an average size under three inches or is are mixed with soil, a six-inch layer will suffice.

If wood products such as paper, wood, cardboard or cartons are utilized, the material should be ground or shredded to an average size of no more than three inches. Soil will need to be mixed with this material as necessary to ensure that control windblown cover waste is not a problem and the This material would need to be applied to a 6-inch thickness.

Plastic materials must be reduced to an average size not to exceed three inches when utilized as alternate daily cover material similar to the requirement above for wood construction-demolition wastes. A 6-inch layer of this material would need to be applied as an alternate daily cover.

In any case where potentially flammable construction-demolition wastes are to be used as alternate daily cover material, the material will be mixed with either on-site soils or petroleum contaminated soils (soils as outlined in Section 7-5.0 of this appendix), or Additionally, soil cover will be placed over the working face area at least every fourth day. This will reduce the material's potential fire hazard at the working face.

78. **Petroleum Contaminated Soil.** Soil contaminated by petroleum products, crude oils, or chemicals (also referred to as petroleum contaminated soils) may be used as alternate daily cover at the Laredo Sanitary Landfill. The criteria for acceptance of these soils for ADC is identical to the required criteria to accept the soils for disposal (as described in Part IV, Appendix D – Special Waste Acceptance Plan). Refer to Section 5 of this ADC Operating Plan for a specific description of the threshold limits for which petroleum contaminated soils can be utilized. When used as ADC, these soils will be applied in a 6-inch minimum thickness.

89. **Slurry Tackifier (Hydromulch) or Cementitious Slurry.** These materials form slurry when mixed with water and will be applied to the landfill working face by spraying with equipment

similar to a commercial hydro-seeder. The material coats and binds the surface waste materials.

The slurry tackifier material consists of cellulose fiber mulch and a binding agent. The fiber mulch is typically manufactured from recycled fiber stock (mixed papers or wood) and the binding agent may be composed of guar gum powder. Additives such as bentonite may be used in addition to the cellulose fiber mulch. Various mulch products such as Quick Cover, Con-Cover, Top Coat Caryl Corp. tackifier or other equivalent products may be used as desired. The hydro mulch material is typically packaged in 50-pound plastic bags, with a nominal bag size of 15" x 12" x 46". The tackifier is sprayed as a coating layer of sufficient thickness to completely cover the wastes, and thereby fires, vectors, odors and windblown wastes are controlled. Fire retardant is dependent on manufacture's formulation.

A typical cementitious slurry is Posi-Shell manufactured by the Landfill Service Corporation. Similar products may also be used. The cementitious slurry is a sprayed product with mineral binder, cellulose fibers and pozzolonic material acting as a binding agent. The finished cover for cementitious slurry (Posi-Shell) should be $\frac{1}{8}$ to $\frac{3}{16}$ inches in thickness. This thickness applies to short-term coverage application rates, as described in Section 4.0.

Material safety data sheets for any fiber mulch and binding agent used at the site will be kept at in the site Operating Record.

3.0 EFFECT ON VECTORS, FIRES, ODORS, AND WINDBLOWN LITTER

As a general overview, each of the proposed alternate daily cover materials will ~~provide for~~ exhibit the functions (i.e. control of odors, vectors, windblown waste, and fires) of soil daily cover in ~~at the~~ same similar manner that soil does.

1. **Synthetic material tarps.** Tarps provide for adequate waste coverage so that problems with windblown waste, vectors, or odors are not observed. The material is not flammable and

although it may not have the same fire retarding properties of soil, should provide adequate protection since the tarps provide uniform waste coverage.

2. **Shredded brush material.** A layer of shredded brush material meets cover criteria relating to the control of vectors and odors, since pPutrescible wastes normally causing these odors and vector attractions will not be adequately covered with the minimum thickness described in Section 2.0~~included in the materials~~. The shredded brush material is combustible, however, moisture retention in addition to the brush material tends to reduce oxygen transfer to the working face as well as will reduce the possibility of fire, especially since the material is only used on a daily basis. In addition, as outlined in the Site Operating Plan, a soil stockpile will be located near the active face at all times to provide fire control materials as described in Section 1.7 of the SOP. On-site soil or ADC petroleum contaminated soils will be mixed with the material to minimize fire concerns. The smaller size and soil-like qualities of the material will also minimize windblown wastes.
3. **Shredded or chipped tires.** When properly placed as a 6-in layer, shredded tires are effective at controlling vectors, litter, and odors because of their soil-like properties. This will provide sufficient cover of and the absence of putrescible wastes, specifically when mixed with onsite soils. The materials are flammable. However, the possibility of the tires combusting is minimal since the tire material will be covered daily with waste during landfill operations on the following day, thus minimizing exposure to heat. In addition, onsite soils or ADC petroleum contaminated soils will also be mixed with the tires prior to their application as alternate daily cover to provide more protection against fire. Provisions are also included in this plan to size tire stockpiles in a way that will minimize fire hazards mimicking the requirements for tire storage facilities. In addition, as outlined in the Site Operating Plan, Section 1.7, a soil stockpile will be located near the active face at all times to provide fire control materials.
4. **Commercial foam products.** The foams when applied completely to cover the working face, deter insects and birds from landing on the working face, and deter animals from

digging into the waste. Foams diminish a vector's ability to sense food among the wastes. Foams also form a barrier that minimizes the release of odor transfer of atmospheric oxygen to the working face limiting odors. Foams readily adhere to the wastes when applied, containing ~~them the waste~~ and preventing blowing litter. Foams are also manufactured to be fire resistant giving them fire control properties similar to soil cover. Fire retardant properties are dependent on the manufactures formulation.

5. **Dried water treatment screenings.** These screenings will be used based upon their soil-like properties and as such should be as effective as soil cover in providing control of wind-blown waste and fires. Odor and vector control will also be provided as this material will be applied at a minimum thickness, as described in Section 2.0, for adequate waste coverage. Screenings will not contain putrescible wastes.
6. **Construction-demolition wastes.** ~~Since the~~ The construction-demolition wastes which would be used as alternate daily cover do not contain putrescible wastes. Construction-demolition waste will be applied to sufficiently cover the working face, and therefore odors and vectors should be adequately controlled. This control will be provided by the sizing requirements specified in Section 2.0 of this ADC operating plan which will make the materials similar to soils. The sizing requirements are also meant to aid in the minimization of windblown waste from these types of cover. Fire control will be dependent on the type of materials utilized, however, most construction-demolition wastes will be fire resistant. In addition, as outlined in Section 1.7 of the Site Operating Plan, a soil stockpile will be located near the active face at all times to provide fire control materials.
7. **Petroleum contaminated soils.** These soils will provide the same effective control as clean soil ensuring protection from vectors, fires, odors, and windblown litter and waste. The low allowable petroleum product concentrations (i.e., less than 1,500 ppm TPH) limit flammability and odors while the soil properties aid in vector and windblown waste control.

8. **Slurry Tackifier (Hydromulch) or Cementitious Slurry.** When properly applied, the slurry will control vectors, windblown papers and odors. None of the materials used for forming the mix are reactive, ignitable or corrosive.

4.0 APPLICATION AND OPERATIONAL METHODS UTILIZED AT THE SITE WHEN USING THE ALTERNATIVE MATERIAL

1. **Synthetic material tarps.** Using standard landfill equipment and site personnel, the tarp is typically placed over the waste and secured along the sides and ends with soil, rock, or other heavy items. The tarps are removed in the mornings using landfill equipment and site personnel. Some tarp brands are "disposable" or bio-degradable and may be filled overcovered with waste on the following day as opposed to being removed. If the active face has an irregular shape or is larger than can be covered with available tarps, soil cover must be applied to the active face perimeter to "square it" down to appropriate dimensions prior to applying the tarp. To minimize tears, the tarp will not be forcibly dragged across the active face. Tarps should overlap each other on the active face perimeter. Up slope tarps should lap over down slope tarps like roof shingles.
2. **Shredded brush material.** This material will be placed much like soil using standard landfill equipment (i.e. dozers, compactors, etc.). The material will either be the proper size upon arrival at the facility or a grinder at the facility will be used to further reduce it to a sufficient size. On-site soils or petroleum contaminated soils suitable for use as ADC will be mixed with this material prior to its use as an ADC in order to reduce its potential flammability. Operator care will be taken to ensure that the material is spread uniformly a minimum of six inches in thickness and that the working face is completely covered. Stockpiles of this material will not be placed closer than 200 feet from the working face to reduce fire concerns with respect to the active face.
3. **Shredded or chipped tires.** This material will also have soil-like properties at the acceptable size range for use as daily cover. The material will be processed prior to arrival at

the site or at the landfill consistent with Part IV, Appendix B – TSPF Operating Plan. On-site soils or petroleum contaminated soils suitable for use as ADC will be mixed with this material prior to its use as an ADC in order to reduce its potential flammability. Operator care will be taken to ensure that the tire chips are spread uniformly a minimum of six inches in thickness and that the working face is completely covered. This ADC will be applied using standard landfill equipment.

Tire piles at the site consisting of shredded tire pieces or scrap tires shall be no greater than 15 feet high nor shall the pile cover an area greater than 8,000 square feet. There shall be a minimum 20-foot lane totally encircling all tire piles. This will act as a fire lane and shall be kept clear at all times. Tire piles will be no closer than 500 feet from the active face and a buffer of 100 feet will be maintained between tire piles and permit boundary.

4. **Commercial foam products.** Most of the foam products are applied with equipment that either sprays or lays a foam layer of sufficient thickness to cover the waste as the equipment traverses the working face. Operator care will be taken to ensure that foam is applied in a continuous layer that completely covers the working face.
5. **Dried water treatment screenings.** This material will have a size and moisture content such that its properties will be similar to that of standard soil daily cover. It will be spread in an identical manner as soil using standard landfill equipment, with care taken to spread the material in a continuous 6-inch layer over the working face.
6. **Construction debris.** This material will be spread in a similar fashion to standard soil daily cover using standard landfill equipment. The variability of the materials which fall into this category will dictate to a great degree how it is applied as daily cover. The important operational requirement for the use of this material is that it be applied to apply the debris at an appropriate thickness (see Section 2 of this Operating Plan). The construction debris will be distributed in a uniform fashion over the entire working face. This will insure its effectiveness as a control for odors, vectors and windblown waste. If the construction-

demolition debris to be used as ADC is flammable, on-site soils or petroleum contaminated soils suitable for use as ADC will be mixed with this material prior to ~~its use in order to application~~. This will reduce its the potential flammability of the material. Stockpiles of any flammable construction-demolition material for use as ADC will not be placed closer than 200 feet from the working face to reduce fire concerns with respect to the active face.

7. **Petroleum contaminated soils.** This material will be applied to the active face using standard landfill equipment. This alternate daily cover material will be spread in an identical manner as standard soil daily cover. Care will be taken not to commingle the contaminated soils with uncontaminated soils outside of use as daily cover.

8. **Slurry Tackifier (Hydromulch) or Cementitious Slurry.** The slurry will be applied with a trailer-mounted device (Finn Model T-90 ADC applicator, PSA 2000 applicator or similar hydromulch applicator). The applicator is to be pulled by a pickup truck, bulldozer or other landfill equipment. The slurry is mixed within the reservoir of the application equipment.

A typical tackifier mixing ratio is approximately one 50-pound bag of fiber mulch and 1.25-pounds of binding agent to every 100 gallons of water. The materials are mixed by mechanical agitation until they form a smooth homogenous slurry. The materials stay in suspension after they are mixed allowing a uniform spray application. The slurry dries to form a uniform coating on top of the waste. Drying time is typically 30-minutes to one-hour depending on weather conditions.

The following procedures will be used for the daily application of the slurry tackifier mix:

- Fill the ADC application equipment with water;
- Add a minimum of one 50-pound bag of fiber mulch and approximately 1.25-pounds of binding agent to every 100 gallons of water, or an amount as directed by the manufacturers;
- Allow the materials to mix until they form a homogeneous slurry, 15 minutes is typically sufficient;

- Apply to the compacted refuse by spraying directly on the working face. Use proper application nozzle to provide consistent coverage.

The spray slurry mix is not recommended to be applied if it is raining. ~~However, once it is applied it will serve its purpose even it may rain afterwards~~ the slurry coverage will be maintained (through binding agents) during rain events. In windy conditions the slurry may need to be sprayed from two directions to ensure proper coverage (i.e. apply an additional layer perpendicular to rows of the first layer). The materials may be sprayed up to 150 feet.

Cementitious slurry (Posi-Shell) will be formulated in loads ~~up from 2,500 to 2,000~~ 3,350 gallons which may cover up to about ~~1620,000~~ square feet. This application rate is for short-term coverage or durations of 24 hours or less. Application rates for medium-term coverage (durations greater than 24 hours) are described in Appendix B – Posi-Shell Cover Demonstration. The mix design will be as recommended by the supplier based on the cementitious component used.

5.0 CHEMICAL COMPOSITION OF THE MATERIAL AND MATERIAL SAFETY DATA SHEET(S) FOR THE ALTERNATIVE MATERIAL

1. Synthetic material tarps. A material safety data sheet for ENSTAR (a typical synthetic tarp) and DuraShield 12,000FR is attached as Appendix A.
2. Shredded brush material. This material is outlined in Section 2 of this ADC Operating Plan.
3. Shredded or chipped tires. This material is outlined in Section 2 of this ADC Operating Plan.
4. Commercial foam products. ~~A material safety data sheets for Rusmar and SaniFoam (a typical alternate daily cover foam) is~~ are included in Appendix A.

5. Dried water treatment screenings. This material is outlined in Section 2 of this Site ADC Operating Plan.
6. Construction-demolition wastes. These materials are outlined in Section 2 of this ADC Operating Plan.
7. Petroleum contaminated soils. All soils used as alternate daily cover material will meet the TNRCC-TCEQ soils policy or policies applicable to the site at the time of application, or Only soils that have been specifically authorized for use as an alternative cover material by TNRCC the TCEQ will be used as ADC. The following table presents the maximum limits for soil acceptance as alternate daily cover.

CONTAMINANT	CONCENTRATION	MAXIMUM CONTAMINANT LEVEL MUST BE LESS THAN	MINIMUM LANDFILL CRITERIA
Automotive Gasoline	Benzene TPH Lead ²	0.5 mg/l ¹ 1500 mg/kg 1.5 mg/l ¹	Type I, TCEQ approved liner or Constructed Clay Liner ³ and Groundwater Monitoring
All Fuels	Benzene TPH Lead ²	0.5 mg/l ¹ 1500 mg/kg	Type I, TCEQ approved liner or Constructed Clay Liner ³ and Groundwater Monitoring
Used Motor Oil from an Internal Combustion Engine	Benzene TPH Lead ²	0.5 mg/l ¹ 1500 mg/kg 1.5 mg/l ¹	Type I, TCEQ approved liner or Constructed Clay Liner ³ and Groundwater Monitoring

Table Notes:

¹ An analysis of total contaminant level may be used as a screening tool prior to Toxicity Characteristic Leaching Procedure (TCLP). To determine the maximum total contaminant level at which a TCLP is not necessary, multiply the table limit by a factor of twenty. This formula is extrapolated from a twenty to one dilution factor when preparing TCLP samples for analysis (Title 40 Code of Federal Regulations, Part 261, Appendix II). If a total contaminant level exceeds twenty times the table limit (e.g. total lead >30 mg/kg, total benzene >10 mg/kg, etc), then TCLP must be performed. Please note that this extrapolation is applicable only to solids.

² If it is known, through process knowledge, that the Automotive Gasoline and fuels did not contain lead, it is not necessary to test for lead.

³ Landfill liner is three feet of compacted clay or soil or in-situ clay or a Subtitle D landfill that meets the requirements in 30 TAC Chapter §330.200. The minimum protection liner will be a composite liner as defined in §330.200 (b) or an alternate design approved by the Executive Director.

8. Slurry Tackifier (Hydromulch) or Cementitious Slurry. The slurry tackifier material is a fiber and binding agent slurry as previously described in Section 2. The cementitious slurry is similar to the tackifier only with an additional pozzolonic material. A copy of Material Safety Data Sheets for any ADC material used will be kept in the landfill Operating Record.

6.0 OTHER FACTORS RELATED TO THE USE OF THE ALTERNATIVE MATERIAL

Upon use of the alternate daily cover materials specified above, some of the following issues should be considered when determining which ADC to utilize. These decisions are best determined by the operator-Landfill Superintendent depending on conditions, past experience and the ADC material.

- Construction-demolition wastes, tire chips, some foams, and to a certain extent, brush materials allow large amounts of infiltration into the waste mass. Soil should be mixed with the ADC materials, where applicable, or an alternate ADC utilized during wet weather if this is a concern.
- Wet weather may also be a concern with respect to ease of application of ADC materials. For example, dried water treatment screenings may become overly slick when wet; however, tire chips are known to be unaffected by wet conditions.
- If tire chips are utilized, steel reinforcement material from the tires may damage equipment and should be taken into consideration. The same is true with construction-demolition wastes.

Appendix A
Material Safety Data Sheets

Revision 2

A-1

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SCS ENGINEERS
April 2006

Appendix B
Posi-Shell ADC Demonstration

Revision 2

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A-2

SCS ENGINEERS

April 2006

**LAREDO SANITARY LANDFILL
PERMIT NO. MSW-1693A
WEBB COUNTY, TEXAS**

**ALTERNATE DAILY COVER OPERATING PLAN
APPENDIX B - POSI-SHELL COVER DEMONSTRATION**

Prepared for:

City of Laredo
Department of Solid Waste
5512 Thomas Avenue
Laredo, TX 78041
(956) 795-2500

Prepared by:

SCS ENGINEERS
1901 Central Drive, Suite 550
Bedford, Texas 76021
(817) 571-2288

April 2006

SCS Project No. 16205024.00

TABLE OF CONTENTS

INTRODUCTION	B-1
MATERIAL DESCRIPTION	B-2
APPLICATION AND OPERATION METHOD	B-2
COMPARISON OF POSI-SHELL VERSUS SOIL	B-3

Attachments

- 1 Comparison of Posi-Shell versus Soil
- 2 Material Safety Data Sheet (MSDS)
- 3 Manufacture's Coverage and Application Rates
- 4 Analytical Data
- 5 Posi-Shell Demonstration Inspection Report Form

SECTION 1
POSI-SHELL COVER DEMONSTRATION

1.0 INTRODUCTION

Consistent with the approval of the TCEQ, dated September 11, 2002, the City of Laredo Sanitary Landfill (landfill) currently uses Posi-Shell as an alternate daily cover (ADC). This ADC has been used at the landfill since this timeframe. Consistent with previous status reports submitted to the TCEQ, in accordance with 30 TAC 133(c)(2), landfill personnel have not experienced any problems with Posi-Shell, during application. Furthermore, Posi-Shell has been effective in controlling vectors, odors, and windblown waste and in preventing fires.

TCEQ regulations, specifically 30 TAC 330.133(c), limit the use of ADC to 24 hours. However, consistent with 30 TAC 330.133(c)(3) the City of Laredo is requesting the authorization to utilize Posi-Shell as an ADC for periods greater than 24 hours, but less than 72 hours. This program has been developed to demonstrate the adequacy of Posi-Shell to meet the requirements of daily cover for a 72-hour period. Application and operation methods for using Posi-Shell as an ADC for up to a 72-hour period are described in Section 1.2 of this Appendix.

Additionally, the City of Laredo is requesting authorization to use Posi-Shell as intermediate cover over areas of the landfill that have been inactive for over 180 days. Posi-Shell will be used as a substitute to the additional 6-inch soil cover over daily cover typically installed to develop intermediate cover. Posi-shell will be applied as intermediate cover at the manufacturer's recommended application rate for long-term cover. Application and operation methods for using Posi-Shell for intermediate cover are described in Section 1.3 of this Appendix.

This demonstration provides the following in relation to the Posi-Shell cover material:

- A detailed description of the Posi-Shell material.

- Manufacturer's recommended application rate for medium-term and long-term cover (refer to Attachment 3 for application rates) for control of windblown litter, erosion, and odor.
- Comparison of soil cover to Posi-Shell cover, and supporting photographic and analytical data for extended coverage durations.
- A protocol and related forms for summarizing the results of the demonstration program and reporting the results to the TCEQ.

1.1 MATERIAL DESCRIPTION

Posi-Shell is a fibrous cement mortar product that is comprised of a mineral binder, cellulose fibers and Polyethylene Terephthalate (P.E.T.) fibers (Posi-Pak), and a liquid base. These three materials form an aqueous alkaline slurry that is applied directly to waste, as described in Section 1.3. The liquid base component for Posi-Shell may be leachate or uncontaminated water.

The mineral binder component is a non-specific pozzolonic material containing variable quantities of mineral compounds as described on the Material Safety Data Sheet provided in Attachment 2. This mineral binder hardens similar to cement, and provides a relatively impermeable surface until waste disposal activities resume. Prior to resuming waste filling over the area covered with Posi-Shell, a dozer or compactor will break up the Posi-Shell surface allowing percolation of liquids prior to the placement of subsequent lifts of waste.

1.2 APPLICATION AND OPERATION METHOD FOR USING POSI-SHELL FOR UP TO 72-HOUR PERIOD FOR DAILY COVER

In applying Posi-shell for use as daily cover for an extended period of time (i.e., up to 72 hours), the following procedure will be implemented:

- Prior to the application of Posi-shell, the surface of the working face will be compacted to the optimal level promoting a relatively smooth surface.
- The Posi-Shell materials will be mixed at the landfill to form the aqueous alkaline slurry.
- The slurry will be applied using specifically designed equipment that contains a spray-on applicator.
- Posi-Shell will be applied consistent with the manufacturer's recommendations for medium-term coverage for durations greater than 24 hours (application rates for periods of 24 hours or less are provided in the Part IV, Appendix A - ADC Operating Plan. See also the manufacturer's coverage and application rates for Posi-Shell in Attachment 3.).
- The Landfill Superintendent (or his designee) will inspect the area where Posi-Shell has been applied for the 72-hour duration and record his observations (including weather conditions, especially precipitation recorded at the landfill) in the Site Operating Record. Photographs of the inspected area will be taken and included in the Site Operating Record (see attached suggested inspection form).
- The Engineer and the Landfill Superintendent will communicate on a monthly basis during the six-month demonstration period. In particular, the adequacy of Posi-Shell to meet the objectives of daily cover will be discussed.
- The Landfill Superintendent will forward the results of the demonstration to the Engineer on a monthly basis.
- The Engineer will review the Site Operating record, including the photographs, and make an inspection of the areas where Posi-Shell has been applied for the 72-hour duration.

- At the conclusion of the six-month demonstration period, the Engineer will compile the data and forward a summary of the demonstration to the TCEQ with recommendation for approval or denial of this application of Posi-Shell.

1.3 APPLICATION AND OPERATION METHOD FOR USING POSI-SHELL AS INTERMEDIATE COVER

Prior to the application of Posi-shell as an intermediate cover, the following procedure will be implemented:

- The Landfill Superintendent (or his designee) will delineate the area of the landfill scheduled to receive immediate cover (i.e., the area of the landfill that has not received waste greater than 180 days prior to the time of this inspection).
- The Landfill Superintendent (or his designee) will inspect this area of the landfill to determine the need for grading to achieve a smooth surface suitable for the application of Posi-Shell.
- Areas of the landfill will be graded, as needed, to achieve appropriate pre-application conditions. This grading will include the application of additional soil, as appropriate.
- The Posi-Shell materials will be mixed at the landfill to form the aqueous alkaline slurry.
- The slurry will be applied using specifically designed equipment that contains a spray-on applicator.
- Posi-Shell will be applied consistent with the manufacturer's recommendations for long-term coverage for durations greater than six months (See the manufacturer's coverage and application rates for Posi-Shell in Attachment 3.).

- Posi-Shell will be applied by spraying in perpendicular paths to achieve the appropriate thickness.
- On a monthly basis, the Landfill Superintendent (or his designee) will inspect the areas where Posi-Shell has been applied as intermediate cover and record his observations (including weather conditions, especially precipitation recorded at the landfill) in the Site Operating Record. Photographs of the inspected area will be taken and included in the Site Operating Record (see attached suggested inspection form).
- The Engineer and the Landfill Superintendent will communicate on a monthly basis during the six-month demonstration period. In particular, the adequacy of Posi-Shell to meet the objectives of intermediate cover will be discussed.
- The Landfill Superintendent will forward the results of this demonstration to the Engineer on a monthly basis.
- The Engineer will review the Site Operating record, including the photographs, and make an inspection of the areas where Posi-Shell has been applied as intermediate cover.
- At the conclusion of the six-month demonstration period, the Engineer will compile the data and forward a summary of the demonstration to the TCEQ with recommendation for approval or denial of this application of Posi-Shell.

1.4 COMPARISON OF POSI-SHELL VERSUS SOIL

For this demonstration, the City of Laredo, proposes to develop evidence that the Posi-Shell material will maintain the following functions when utilized (1) as an ADC for durations greater than 24 hours and (2) as intermediate cover:

- control of vectors, odors, and windblown waste;

- fire protection;
- prevention of erosion of the cover; and
- prevention of exposed waste and contaminated water

As provided in Attachment 1 of this demonstration, Table 1 describes the comparisons of soil cover to Posi-Shell cover. Photographic and analytical evidence will be provided for the Posi-Shell cover's performance for durations greater than 24 hours, but less than 72 hours. Additionally, photographic and analytical evidence will be provided for the Posi-Shell cover's performance as intermediate cover. Photographs will be taken to document the Posi-Shell cover's hard impermeable layer and ability to control windblown litter, vectors, and erosion. Additionally, the photographs will document the cover's resistance to various weather conditions including dry and wet weather. The analytical data described in Table 1, is provided in Attachment 4.

Furthermore, TCEQ regulation 30 TAC 133, allows soil daily cover (6-inch-thick) to remain on inactive areas up to 180 days. The photographic evidence in this demonstration also will provide supporting data that Posi-Shell has physical properties similar to soil, and therefore provides similar protection over extended durations of coverage.

ATTACHMENT 1

COMPARISON OF POSI-SHELL VERSUS SOIL

Revision 0

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B-7

SCS ENGINEERS
April 2006

Prepared by: RRK

**LAREDO SANITARY LANDFILL
WASTE COVER MATERIAL
COMPARISON OF POSI-SHELL VERSUS SOIL**

August 2005

TCEQ Regulation	Regulation Requirement	Soil Cover	Posi-Shell Cover	Comments
330.125(b), 330.133	Control of Odors	Reduces air emission by application of soil after waste placement.	Substantially reduces air emission of odorous compounds over extended periods.	Refer to Reference 1, emission rates from Posi-Shell were reduced by 89 to 97% over three weeks.
330.126, 330.133	Control of Vector	Minimizes vector attraction by (due to reduced odors and exposed waste) application of soil after waste placement.	Provides hard surface over the refuse thereby creating a barrier to vectos.	Photos will depict the hardened surface for daily cover (i.e. periods less than 72 hours) and intermediate cover.
330.120(1), 330.133	Control of Windblown Waste	Reduces windblown waste by application of soil after waste placement.	Contains a mineral binder that adheres to the waste surface preventing windblown waste.	Photos will depict no exposed or windblown waste for daily cover (i.e. periods less than 72 hours) and intermediate cover.
330.115, 330.133	Fire Protection	Provides fire protection by application of soil after waste placement. Soil is non-flammable.	Posi-Shell is non-flammable.	Refer to Reference 2 and 3 which states Posi-Shell is non-flammable.
330.133(f)	Control of Erosion	Soil is susceptible to erosion. After significant rain events, regrading and compaction is required.	Posi-Shell is non-erodable.	Refer to Reference 4 - Mineral Binder Report (shower tests), which indicates no impact from rainfall. Also Photos will depict the Posi-Shell surface condition before and after rainfall.
330.133	Exposure of Waste	Application of soil provides complete coverage of waste (depending on thickness), and prevents runoff of contaminated water.	Contains a mineral binder that prevents exposure of waste, and prevents contaminated runoff when prepared with water (i.e., no leachate).	Refer to Reference 4. Photos will depict no exposed waste or damage to the Posi-Shell cover.

References:

1. "Assessment of Soil Cover Application to Reduce Air Emissions from Hazardous Waste"; Rowan Williams Davies and Irwin Inc.; Guelph, Ontario, December 22, 1997.
2. Material Safety Data Sheet, Landfill Service Corporation, Apalachin, NY, September 1997.
3. Heat and Visible Smoke Release Rates for Posi-Shell, American Standard Testing Bureau, New York, NY, July 1995.
4. Mineral Binder Report, Landfill Service Corporation, Midlothian, TX, November 2000.

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SCS ENGINEERS

ATTACHMENT 2

MATERIAL SAFETY DATA SHEET (MSDS)

Revision 0

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B-6

SCS ENGINEERS

April 2006

ATTACHMENT 3

MANUFACTURER'S COVERAGE AND APPLICATION RATES

Revision 0

B-9

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SCS ENGINEERS
August 2005

ATTACHMENT 4

ANALYTICAL DATA

ATTACHMENT 5

POSI-SHELL DEMONSTRATION INSPECTION REPORT FORM

Revision 0

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B-11

SCS ENGINEERS

April 2006

**CITY OF LAREDO LANDFILL
WEBB COUNTY, TEXAS
POSI-SHELL DEMONSTRATION INSPECTION REPORT FORM**

Date and Time of Inspection: _____

Inspector's Name: _____

**OBSERVATIONS OF AREAS USING POSI-SHELL FOR UP TO 72-HOUR PERIOD
FOR DAILY COVER**

Amount of rainfall since last inspection: _____

Any observed erosion in area covered with Posi-Shell? _____

Any waste protruding through Posi-Shell? _____

Preventative or corrective action implemented? _____

Other observations? _____

Inspector's Signature: _____

**CITY OF LAREDO LANDFILL
WEBB COUNTY, TEXAS
POSI-SHELL DEMONSTRATION INSPECTION REPORT FORM**

Date and Time of Inspection: _____

Inspector's Name: _____

OBSERVATIONS OF AREAS USING POSI-SHELL FOR INTERMEDIATE COVER

Amount of rainfall since last inspection: _____

Any observed erosion in area covered with Posi-Shell? _____

Any waste protruding through Posi-Shell? _____

Preventative or corrective action implemented? _____

Other observations? _____

Inspector's Signature: _____

Kathleen Hartnett White, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
Larry R. Soward, *Commissioner*
Margaret Hoffman, *Executive Director*



MSW/1693A/AP

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
Protecting Texas by Reducing and Preventing Pollution

May 10, 2004

Mr. Oscar J. Medina, Director
Department of Solid Waste
City of Laredo
P.O. Box 1965
Laredo, Texas 78044-1965

Re: Municipal Solid Waste (MSW) - Webb County
City of Laredo Landfill - MSW Permit No. 1693A
Alternate Daily Cover Report - First Quarter 2004 / Second Report
Mail Log No. 04-5076; WWC No. 10563343
RN 102327582 / CN 600131908

Dear Mr. Medina:

This is in response to your letter, dated April 6, 2004, and received in our office April 8, 2004, submitting the required quarterly Alternate Daily Cover Report for the first quarter of 2004, (January through March), for the subject facility. This report is hereby acknowledged as the second report of your alternate daily cover and will be placed in the file for this facility.

In your future Alternate Daily Cover Reports we request that you designate how many reports you have previously submitted. We want to mention that we appreciate the detail of your alternate daily cover report. We encourage you to continue with like reports so that we can make an accurate evaluation of this material.

If you have any questions concerning this letter or if we may be of any assistance to you regarding municipal solid waste, you may contact me at MC-124, P.O. Box 13087, Austin, Texas 78711; telephone number (512) 239-1268.

Sincerely,

A handwritten signature in cursive script, appearing to read "John Demaree".

John Demaree, Environmental Permit Assistant III
Team I, Municipal Solid Waste Permits Section
Waste Permits Division

JD/fe



P.O. Box 13087 • Austin, Texas 78711-3087 • 512/239-1000 • Internet address: www.tceq.state.tx.us

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CITY OF LAREDO

DEPARTMENT OF SOLID WASTE

P.O. BOX 1965

LAREDO, TEXAS 78044-1965

(956) 795-2510 PHONE

(956) 796-1105 (FAX)

RECEIVED
APR 08 2004

MSW PERMITS SECTION
TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

April 6, 2004

Mr. Jeff Holderread, P.E.

TCEQ

Municipal Solid Waste Division (MC 124)

12100 Park 35 Circle, Bldg F/1

Austin, Texas 78753

RE: Quarterly Status Report of the Effectiveness of an Alternate Daily Cover Material
City of Laredo Landfill
MSW Permit No. 1693A

Dear Mr. Holderread:

Your office authorized the use of Posi-Shell as an alternate daily cover at the City of Laredo Landfill on September 11, 2002. This purpose of this report is to document the effectiveness of this alternate daily cover on a quarterly basis for a period of one year.

The use of Posi-Shell as an alternate daily cover (ADC) commenced on October 8, 2003. Throughout this reporting period (January 2-March 30, 2004), the cementitious slurry material was applied following the manufacturer's suggested minimum standards for "short term cover" to a working face area scheduled to receive additional municipal solid waste the following day within 24 hours as indicated in the landfill's permit. The minimum formulation and standard used for a 2,000 gallon load of the ADC is as follows: 1,300 gallon water, 5 tons +/- mineral binder (cement kiln dust), and two Posi-Paks (synthetic fiber). The formulation creates an average coverage area of 16,000 ft² with a finished cover of 1/8 to 3/16 inch in thickness.

Daily usage reports are maintained at the landfill documenting the date and usage amount of the Posi-Shell in the landfill's daily cover log (see attachment). Also, a worksheet was developed for the landfill operators to ensure that adequate amount of Posi-Shell is applied to the working face (see attachment). This worksheet provides planning and eliminates the guess work of how much material is needed for the day.

Throughout this reporting period, the use of Posi-Shell was evaluated for effectiveness in controlling vectors, windblown litter, odors, fires, scavenging, erosion, dust, and its use through adverse weather condition. The statement and effectiveness of each area of evaluation are detailed below:

Page 1 of 4

MAIL LOG# 5067

WWC# 10563343

NO RESPONSE ☐ STAFF
TEAM ☒ I ☐ II ☐ III

4/12/03

Vector Control

Statement: Posi-Shell forms a sealed layer that isolates food sources and inhibits flies from additional larvae. Posi-Shell also discourages other vectors such as birds, rodents and small animals. Given the material's effectiveness in controlling odors, animals are less likely to be attracted to the waste.

Effectiveness: No evidence of disturbance by animals to the Posi-Shell cover system. There has been a dramatic decrease in the number of birds on site since the commencement of Posi-Shell. However, there is a direct correlation between the thickness of the Posi-Shell and number of birds present. The thicker the material, the fewer the birds. On the other hand, there was no evidence of other animals and flies.

Litter Control

Statement: Posi-Shell is highly effective for litter control. Due to the cementitious properties and stucco-like consistency of the Posi-Shell material, a layer is formed to prevent litter from being blown away from the working face. Posi-Shell can be used to temporarily reduce the size of the working face to minimize wind blown litter generated during the normal operations of unloading and compacting waste.

Effectiveness: Excellent control of wind blown litter.

Odor Control

Statement: Posi-Shell is highly effective for odor control. The alkaline Posi-Shell formulation has an inherent capability to suppress odors. By applying the material as a daily cover, typical landfill odors will be reduced by the calcium oxide (lime) content of the mixture.

Effectiveness: Excellent odor control. A major reduction in the level of odor is noted after each application of Posi-Shell material over the waste. Posi-Shell is far superior to conventional soil cover for odor control.

Fire Control

Statement: Posi-Shell is an extremely effective fire control material. First, the coating effectively seals the waste from the atmospheric surface causing the underlying waste to potentially become oxygen depleted and less susceptible to ignition. Secondly, the Posi-Shell material is nonflammable. In tests performed by the manufacturer, when an acetylene torch is applied directly to the Posi-Shell cover, ignition of the cover or the underlying waste does not occur. Posi-Shell passes the ASTM E-1354 and D-4982 standards for non flammable.

Effectiveness: No landfill fires occurred during this reporting period.

Scavenging

Statement: Posi-Shell reduces general animal scavenging due to its cover system that seals and reduces odors and covers potential food sources. Scavenging by humans is inhibited by the complete coverage of the waste and through strict enforcement of the no scavenging policy.

Effectiveness: The use of Posi-Shell has demonstrated to be very effective in deterring scavenging.

Erosion

Statement: Posi-Shell forms as a hard cover (similar to cement) and becomes resistance to rain erosion.

Effectiveness: The use of Posi-Shell has demonstrated to be very effective for erosion control at the working face for ADC. An area outside the active working face was applied with Posi-Shell during the demonstration (employee training) period of the material and equipment in October 2003. The Posi-Shell is still intact after six months. Some areas of erosion occurred from heavy rains due to undermining of the Posi-Shell cover from the top of the landfill slope. This is correctable by reapplying Posi-Shell over the areas of erosion.

Dust

Statement: The Posi-Shell material is applied to the working face as a slurry in the appearance and consistency of wet cement. Dust is not generated at the working face. Dust associated with mixing process are controlled by the enclosed horizontal silo's dust collection system. Adding water to the applicator prior to loading the mineral binder (cement kiln dust) controls dust generated during mixing. The mineral binder is loaded into the applicator through flexible pipe into a tightly fitted opening. The waster in the applicator absorbs the dust.

Effectiveness: The "wet state" of the Posi-Shell eliminates any concerns for dust at the working face. Dust at the mixing stage is generated at the beginning of the mixing process which becomes minimal as the mineral binder becomes wet.

Weather

Statement: The Posi-Shell cover requires approximately of 2-3 hours curing time. Once cured, it forms a highly effective cover and water barrier. Posi-Shell cannot be placed during or immediately prior to a rain event. During a hard rain event or if the forecast calls for a heavy rain event, conventional soil is to be used to as cover.

Effectiveness: The use of Posi-Shell has demonstrated to be very effective cover. Several hard rain events has occurred at the site after curing time of the material with no evidence of failure of the cover over the working face.

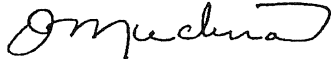
In summary, Posi-Shell has been demonstrated to an effective alternate daily cover. In addition, the use of Posi-Shell has saved valuable airspace and reduced soil consumption for daily cover.

The next report (April 2004 - June 2004) is scheduled for July 2004.

We have sent one copy of the report to the TCEQ Region 16 Office located in Laredo.

If you have any questions regarding this matter, please contact Randall Kippenbrock, P.E. at (956) 795-2510.

Sincerely,

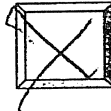
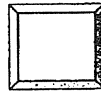












Oscar J. Medina
Director

cc: TCEQ Regional 16 Office (Laredo)

file: C:\LANDFILL\TCEQ-Letters\TCEQ040604.2.wpd

**Posi-Shell Application Minimum Requirements
for
Short Term Cover
(Daily Cover)**

Application Date	2-24-04	Weather Conditions	overcast/ windy
Application Time	5:00pm	Ambient Temperature	
Working Face Dimension	Length 276'	Width 104'	Calculated Coverage Area 29,704 ft ²
Coverage Area	16,000 ft ² per load	Number of Loads = Calculated Coverage Area Divided by 16,000 ft ²	1.8 2 Loads
Slurry Mixture	2,000 gallon load: 1,300 gallons water, 5 tons+/- mineral binder, 2 Posi-Paks End consistency of slurry has an "oatmeal" texture	Acceptable 	Unacceptable 
Coverage Method	Apply from two directions to eliminate spray shadow	Acceptable 	Unacceptable 
Coverage Thickness	Finished cover should be 1/8 to 3/16 inch	Acceptable 	Unacceptable 
Coverage Appearance	No waste visible from any angle	Acceptable 	Unacceptable 
Cover Maintenance	None. Waste is placed over Posi-shell cover the next day	Acceptable 	Unacceptable 
Operator Signature		Supervisor Signature	

DAILY COVER LOG FOR THE CITY OF LAREDO LANDFILL - MSW PERMIT No. 1693A. (Revised 08/02/01).

DATE	SOLID WASTE (TONS)	GRID		LAYER (LIFT)	SOIL COVER (CYD)	ALTERNATE DAILY COVER			SIGNATURE
		LETTER	NUMBER			TYPE	AMOUNT	COMMENT	
1-5-04	1608	E	12	12	2208	Posi-Shell	5 ton	16000	G. B. C.
1-6-04	3414	E	10	12	805	Posi-Shell	5	16,000	G. B. C.
1-7-04	1984	D	10	12	2001	Posi-Shell	5	16,000	G. B. C.
1-8-04	1154	D	10	12	2001	Posi-Shell	5	16,000	G. B. C.
1-9-04	1188	D	10	12	920	Posi-Shell	2.5	8,000	G. B. C.
1-10-04	486	R	12	12	1885	—	—	—	G. B. C.
1-11-04	5	Sun day							
1-12-04	1567	D	10	12	874	Posi-Shell	5	16,000	
1-13-04	1307	D	10	12	2093	Posi-Shell	5	16,000	G. B. C.
1-14-04	879	D	10	12	1909	Posi-Shell	5	16,000	G. B. C.
1-15-04	1073	D	10	12	2139	Posi-Shell	5	16,000	G. B. C.
1-16-04	918	D	10	12	1311	Posi-Shell	2.5	8000	G. B. C.
1-17-04	400	V	110	12	1725	—	—	—	G. B. C.
1-18-04		Sun day							
1-19-04	629	D	18	12	92	Posi-Shell	5	16000	G. B. C.
1-20-04	1364	D	18	12		Posi-Shell	5	16000	G. B. C.
1-21-04	1101	D	18	12	276	Posi-Shell	5	16000	G. B. C.
1-22-04	750	D	18	13	2311	Posi-Shell	5	16000	G. B. C.
1-23-04	712	D	18	13	598	Posi-Shell	5	16000	G. B. C.
1-24-04	144	D	18	13	1518	—	—	—	

DAILY COVER LOG FOR THE CITY OF LAREDO LANDFILL - MSW PERMIT No. 1693A. (Revised 08/02/01).

DATE	SOLID WASTE (TONS)	GRID		LAYER (LIFT)	SOIL COVER (CYD)	ALTERNATE DAILY COVER			SIGNATURE
		LETTER	NUMBER			TYPE	AMOUNT	COMMENT	
1-25-04	—	—	—	—	—	—	—	Closed	Summary
1-26-04	1717	F	17	13	1518	P.S.	5 tons	16,000 s.f.	RLK
1-27-04	1530	G	17	13	1840	P.S.	5 tons	16,000 s.f.	RLK
1-28-04	1080	G	16	13	1909	P.S.	5 tons	16,000 s.f.	RLK
1-29-04	1122	G	16	13	1012	P.S.	5 tons	16,000 s.f.	RLK
1-30-04	1264	G	15	13	1817	P.S.	5 tons	16,000 s.f.	RLK
1-31-04	608	J	11	11	759	P.S.	5 tons	16,000 s.f.	G. G. C.
2-1-04	136	J	11	11	1797	P.S.	—	—	G. G. C.
2-2	1552	G	16	13	759	P.S.	7 1/2 tons	24,360 s.f.	G. G. C.
2-3-04	1453	G	16	13	1932	P.S.	5 tons	13,800	G. G. C.
2-4-04	825	G	16	13	1886	P.S.	5 tons	9600	G. G. C.
2-5-04	1198	G	13	13	1357	P.S.	5 tons	8000	RLK
2-6-04	1103	G	13	13	1541	P.S.	5 tons	9600	BAC
2-7-04	5514	G	13	13	1771	P.S.	—	—	BAC
2-9-04	1370	G	13	13	1771	P.S.	5 tons	10,000	BAC
2-10-04	1467	G	13	13	1679	P.S.	5 tons	8940	G. G. C.
2-11-04	925	G	12	13	920	P.S.	5 tons	9600	BAC
2-12-04	1195	G	12	13	2622	P.S.	5 tons	12,000	G. G. C.
2-13-04	1253	G	12	13	1771	P.S.	5 tons	12,220	G. G. C.
2-14-04	362	G	12	12	1221	—	—	—	RLK

DAILY COVER LOG FOR THE CITY OF LAREDO LANDFILL - MSW PERMIT No. 1693A. (Revised 08/02/01).

DATE	SOLID WASTE (TONS)	GRID		LAYER (LIFT)	SOIL COVER (CYD)	ALTERNATE DAILY COVER			SIGNATURE
		LETTER	NUMBER			TYPE	AMOUNT	COMMENT	
2/15/04	5	Sunday							
2/16/04	736	G	12	12	1035	P.S.	5 ton	12960	G.G.C.
2/17/04	1558	G	12	12	2300	P.S.	5 ton	16,000	G.G.C.
2/18/04	1284	K	12	12	1840	P.S.	10 ton	47214	G.G.C.
2-19-04	1142	K	12	12	1288	P.S.	5 ton	33580	G.G.C.
2-20-04	1042	K	12	12	2208	P.S.	5 ton	23901	G.G.C.
2/21/04	537	J	11	13	1978	—	—	—	RLK
2-22-04		Sunday		—	—	—	—	—	—
2-23-04	1381	J	11	13	1725	P.S.	5 ton	12,000	G.G.C.
2-24-04	1034	F	13	12	598	P.S.	10 ton	29704	G.G.C.
2-25-04	900	F	13	12	759	P.S.	5 ton	22500	G.G.C.
2-26-04	1,210	F	13	12	1334	P.S.	5 ton	38150	G.G.C.
2-27-04	1249	F	116	12	2024	P.S.	5 ton	29,230	G.G.C.
2-28-04	654	+	126	12	3565	—	—	—	RLK
2-29-04		Sunday		NOT OPEN	1518	—	—	—	RLK
3-1-04	1340	M	10	10	0	P.S.	5 ton	30600	G.G.C.
3-2-04	1,434	L	11	12	0	P.S.	10 ton	32000	RLK
3-3-04	1567	L	11	12	0	P.S.	12 1/2 ton	36250	G.G.C.
3-4-04	1178	M	10	11	4761	—	—	—	G.G.C.
3-5-04	1167	M	12	12	1219	P.S.	7 1/2 ton	22500	G.G.C.

DAILY COVER LOG FOR THE CITY OF LAREDO LANDFILL - MSW PERMIT No. 1693A. (Revised 08/02/01).

DATE	SOLID WASTE (TONS)	GRID		LAYER (LIFT)	SOIL COVER (CYD)	ALTERNATE DAILY COVER			SIGNATURE
		LETTER	NUMBER			TYPE	AMOUNT	COMMENT	
3-6-04	673	M	12	12	2760	P.S.	5 Ton	13500F ²	BIC
3-7-04	249	M	12	12	—	P.S.	5 Ton	7000F ²	BIC
3-8-04	1473	L	11	12	—	P.S.	5 Ton	20720	G.B.C.
3-9-04	1301	L	11	11	—	P.S.	10 Ton	31500	G.B.C.
3-10-04	1106	L	11	11	2024	P.S.	7 1/2 Ton	24747	BIC
3-11-04	1269	L	11	11	1633	P.S.	5 Ton	24050	G.B.C.
3-12-04	830	L	11	11	1511	P.S.	5 Ton	12,500	BIC
3-13-04	146	L	11	11	1327	—	—	—	G.B.C.
3-14-04	5	Sunday		Closed	—	—	—	—	—
3-15-04	997	L	9	11	805	P.S.	5 Ton	12075	G.B.C.
3-16-04	1296	L	9	11	1242	P.S.	5 Ton	16050	G.B.C.
3-17-04	970	L	9	11	1886	P.S.	5 Ton	17600	RK
3-18-04	1406	L	14	11	1104	P.S.	5 Ton	16000	G.B.C.
3-19-04	1301	L	14	11	1288	P.S.	15	45000	G.B.C.
3-20-04	540	L	9	11	2093	—	—	—	RK
3-21-04	—	Sunday		—	—	—	—	—	—
3-22-04	1694	L	9	11	—	—	—	—	RK
3-23-04	1672	L	9	11	1472	P.S.	5 Ton	16,000	RK
3-24-04	1148	J	18	13	1794	P.S.	10 Tons	12,750	BIC
3-25-04	1458	K	17	13	1610	P.S.	5 Tons	17,200	BIC

[illegible]

Posi-Shell Records

Date	Ticket No.	Date Received	Bill of Lading	CKD (kg)	CKD (ton)	CKD DIFF.	CKD Landfill tons	Amount CKD Dispensed (ton)	Remaining CKD in Silo (ton)	Posi-Shell Used (bags)	Posi-Shell Inventory (bags)	Load Number	Area Applied	Application
01/02/04	237447	01/17/04	1970144	17160	18.915	0.44	18.47	0	30	0	235	*	I10LAYER11	*
01/02/04								5	25	2	233	67	E12LAYER12	ADC
01/03/04								5	20	2	231	68	E12LAYER12	ADC
01/04/04								2.5	17	1	230	69	E12LAYER12	ADC
01/05/04								5	12	2	228	70	E12LAYER12	ADC
01/06/04								5	7	2	226	71	E12LAYER12	ADC
01/07/04								5	2	2	224	72	R12LAYER12	ADC
01/08/04								5	-3	2	222	73	R12LAYER12	ADC
01/09/04								2.5	-5	1	221	74	R12LAYER12	ADC
01/10/04	240519	01/27/04	1974994	14640	16.138	0.05	16.19	0	11	0	221	*	*	*
01/12/04	?	01/27/04	1975164	31400	34.612	?	?	0	45	0	221	*	*	*
01/12/04					15.7			5	56	2	219	75	R12LAYER12	ADC
01/13/04								5	51	2	217	76	R12LAYER12	ADC
01/14/04								5	46	2	215	78	D10LAYER12	ADC
01/15/04								5	41	2	213	79	D10LAYER12	ADC
01/16/04								5	36	2	211	80	D10LAYER12	ADC
01/17/04	242544	01/30/04	1979226	35920	39.595	21.86	17.74	0	76	0	211	*	*	*
01/19/04								5	71	2	209	81	D18LAYER13	ADC
01/20/04								5	66	2	207	82	D18LAYER13	ADC
01/21/04								5	61	2	205	83	D18LAYER13	ADC
01/22/04								5	56	2	203	84	D18LAYER13	ADC
01/23/04								5	51	2	201	85	D18LAYER13	ADC
01/24/04	244141	02/11/04	1983069	13890	15.311	0.21	15.10	0	66	0	201	*	*	*
01/26/04								5	61	2	199	86	F17LAYER13	ADC
01/27/04								5	56	2	197	87	G17LAYER13	ADC
01/28/04								5	51	2	195	88	G16LAYER13	ADC
01/29/04								5	46	2	193	89	G16LAYER13	ADC
01/30/04								5	41	2	191	*	*	*
01/30/04	245860	02/17/04	1986280	15550	17.141	0.06	17.08	5	53	2	189	90	G15LAYER13	ADC
01/31/04								5	48	2	187	91	G15LAYER13	ADC
02/02/04								7.25	41	3	184	92	G15LAYER13	ADC
02/03/04								5	36	2	182	93	G15LAYER13	ADC
02/04/04								5	31	2	180	94	G13LAYER13	ADC
02/05/04	247778	02/25/04	1989526	12290	13.547	5.07	8.48	0	44	0	180	*	*	*
02/05/04								5	39	2	178	95	G13LAYER13	ADC
02/06/04								5	34	2	176	96	G13LAYER13	ADC
02/09/04								5	29	2	174	97	G13LAYER13	ADC

Posi-Shell Records

Date	Landfill Ticket No.	Date Received Invoice	Bill of Lading	CKD (kg)	CKD (ton)	CKD DIFF.	CKD Landfill tons	Amount CKD Dispensed (ton)	Remaining CKD in Silo (ton)	Posi-Shell Used (bags)	Posi-Shell Inventory (bags)	Load Number	Area Applied	Application
02/10/04								5	24	2	172	98	G12LAYER13	ADC
02/11/04	249794	02/26/04	1992744	12300	13.558	4.80	18.36	0	38	0	172	*	G12LAYER13	ADC
02/11/04								2.5	35	1	171	99	G12LAYER13	ADC
02/12/04								5	30	2	169	100	G12LAYER13	ADC
02/13/04	250505	03/03/04	1994399	16590	18.287	0.18	18.48	0	49	0	169	*	G11LAYER13	ADC
02/13/04								5	44	2	167	101	G11LAYER13	ADC
02/15/04	252254	03/09/04	1997320	16740	18.453	0.37	18.77	0	62	0	167	*	G11LAYER13	ADC
02/16/04								5	57	2	165	102	k12layer12	ADC
02/17/04								5	52	2	163	103	k12layer12	ADC
02/18/04								5	47	2	161	104	k12layer12	ADC
02/19/04								5	42	2	159	105	k12layer12	ADC
02/20/04								5	37	2	157	106	k12layer12	ADC
02/21/04	252987	03/09/04	1997321	16050	17.692	0.04	17.73	0	55	0	157	*	k12layer12	ADC
02/23/04								5	50	2	155	107	l13layer12	ADC
02/24/04								5	45	2	153	108	l13layer12	ADC
02/25/04								5	40	2	151	109	l13layer12	ADC
02/26/04								5	35	2	149	110	l13layer12	ADC
02/27/04	254656		2002667	16060	17.703	0.45	17.25	0	53	0	149	*	l13layer12	ADC
02/27/04								7.5	45	2	147	111	l13layer12	ADC
03/01/04								10	35	4	143	112	M10LAYER10	ADC
03/02/04								10	25	4	139	113	L11LAYER12	ADC
03/03/04								15	10	5	134	114	L11LAYER12	ADC
03/04/04								0	10	0	134	115	M10LAYER11	ADC
03/05/04	257055	03/26/04	2006532	17520	19.312	0.16	19.47	0	29	0	134	*	M10LAYER11	ADC
03/06/04	257421	03/26/04	500000170		23.06	0.47	22.57	0	52	0	134	*	M10LAYER11	ADC
03/06/04								5	47	2	132	116	M12LAYER12	ADC
03/07/04								5	42	2	130	117	M12LAYER12	ADC
03/08/04								5	37	2	128	118	L11LAYER11	ADC
03/09/04								10	27	4	124	119	L11LAYER11	ADC
03/10/04								7.5	20	3	121	120	L11LAYER11	ADC
03/11/04								5	15	2	119	121	L11LAYER11	ADC
03/12/04	260061	03/30/04	500000211		24.72	1.17	23.55	0	40	0	119	*	L9LAYER11	ADC
03/15/04								5	35	2	117	122	L9LAYER11	ADC
03/16/04								5	30	2	115	123	L9LAYER11	ADC
03/17/04								5	25	2	113	124	L9LAYER11	ADC
03/18/04	261150		2015426	10450	11.519	0.25	11.75	5	31	2	111	*	L9LAYER11	ADC
03/19/04								5	26	2	109	125	L9LAYER11	ADC

Posi-Shell Records

Date	Landfill Ticket No.	Date Received Invoice	Bill of Lading	CKD (kg)	CKD (ton)	CKD DIFF.	CKD Landfill tons	Amount CKD Dispensed (ton)	Remaining CKD in Silo (ton)	Posi-Shell Used (bags)	Posi-Shell Inventory (bags)	Load Number	Area Applied	Application
03/22/04								5	21	2	107	126	L9LAYER11	ADC
03/23/04								7.5	14	3	104	127	L9LAYER11	ADC
03/24/04	263613		500000285		22.95	0.05	22.90	0	37	0	104	*	*	*
03/24/04								10	27	4	100	128	J18LAYER13	ADC
03/25/04	263995		500000291		24.78	0.20	24.58	0	51	0	100	*	*	*
03/25/04								5	46	2	98	129	K17LAYER13	ADC
03/26/04								5	41	2	96	130	K17LAYER13	ADC
03/29/04								5	36	2	94	131	M12LAYER11	ADC
03/30/04								5	31	2	92	132	M12LAYER11	ADC
03/31/04	266267		500000318		23.11	0.76	22.35	0	54	0	92	*	*	*
03/31/04								5	49	2	90	133	M12LAYER11	ADC