

MUNICIPAL SOLID WASTE PERMIT
MAJOR AMENDMENT

Part IV Application for Permit Amendment

(TAC Title 30 Rule §330.65))



NAME OF PROJECT: Beck Landfill

MSW PERMIT APPLICATION NO.: 1848AA

OWNER: Nido, LTD (CN603075011)

OPERATOR: Beck Landfill (RN102310968)

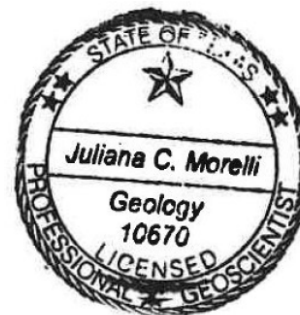
CITY, COUNTY: Schertz, Guadalupe County

Major Amendment: September 2023

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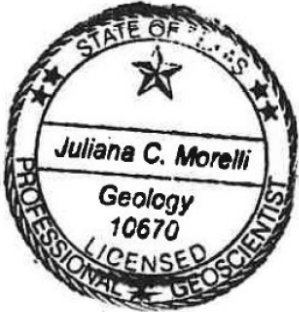
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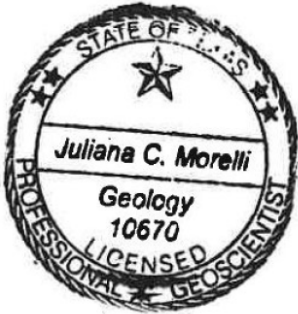
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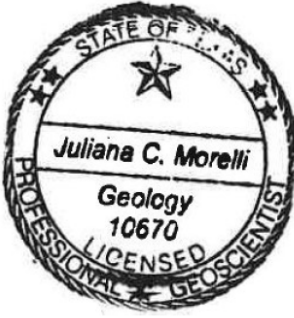
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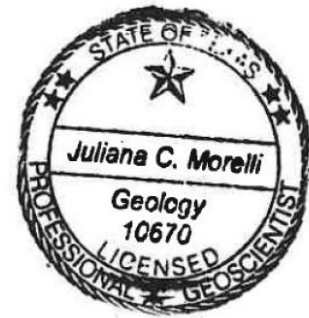
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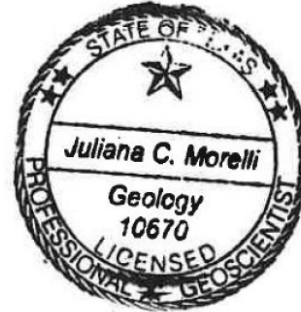
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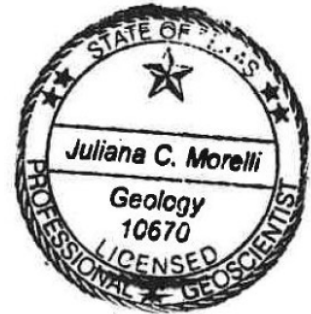


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1.0 INTRODUCTION

1.1 Introduction (§330.127)

The Beck Landfill Site Operating Plan (SOP), in accordance with 30 TAC §330.127, includes provisions for site management and site operating personnel to meet the general and site-specific requirements of for the day-to-day operation of the Beck Landfill. This SOP will be retained onsite throughout the active life of the Beck Landfill and throughout the post-closure care maintenance period. This SOP also includes provisions for site management and site operating personnel to meet the general and site-specific requirements for the waste acceptance rate established in the SOP.

The operational requirements for Beck Landfill, including the existing Site Development Plan (SDP), Site Operating Plan (SOP), Final Closure Plan, Post-Closure Maintenance Plan (PCMP) and all other documents and plans required by this chapter are defined in the previously approved TCEQ Permit No. 1848A. Additional TCEQ approved revisions and/or required documents shall be incorporated into the operational requirements and shall be considered a part of the operating record of the Beck Landfill.

1.2 General Information

Beck Landfill is an existing Type IV landfill (TCEQ Permit No. MSW-1848A) operated by Beck Landfill, Nido, LTD. (Beck Landfill or BLF). Beck Landfill is a privately owned and operated Type IV landfill that provides Type IV acceptable waste disposal capacity primarily for Guadalupe and Bexar Counties, and surrounding areas. Beck Landfill is located in southwestern Guadalupe County, Texas. The facility is located at 550 FM 78, Schertz, TX 78154, primarily within the south part of the City of Schertz, 1,400 feet southeast of the junction of FM 1518 and FM 78.

1.3 Wastes Authorized for Disposal

Beck Landfill is a Type IV landfill unit and may only accept brush, construction and/or demolition waste (C&D waste), and/or rubbish, as described in 30 TAC §330.5(a)(2).

In accordance with 30 TAC §330.171 (Disposal of Special Wastes) and §330.173 (Disposal of Industrial Wastes) Beck Landfill may also accept special wastes consistent with the limitations of 30 TAC §330.5(a)(2) and the Waste Acceptance Plan required by §330.61(b). Special wastes must be handled in accordance with waste-specific provisions, as described in the Waste Acceptance Plan. Special wastes may include, but are not limited to:

- Non-regulated asbestos-containing materials (non-RACM)
- Soils contaminated by petroleum products ,crude oils, or chemicals in concentrations of greater than 1,500 milligrams per kilogram (mg/kg) total petroleum hydrocarbons; or contaminated by constituents of concern that exceed the concentrations listed in Table 1, §335.521(a)(1) (subject to provisions of 30 TAC §330.171(b)(4))
- Class 2 industrial solid waste
- Class 3 industrial solid waste

1.4 Pre-Operation Notice (§330.123)

Beck Landfill will provide ongoing cell construction notification to the TCEQ MSW Permits Section, in the form of a “30-DAY NOTICE OF CELL COMPLETION” letter. This notification will include a site layout map identifying the area(s) being excavated, along with acknowledgement that the cell has been excavated into the gray shale formation. The notification submittal will be in triplicate (one original and two copies), one copy being sent to the appropriate TCEQ Regional Office. The executive director has 14 days to provide a verbal or written response. If no response has been received by the end of the fourteenth day following the executive director's receipt of the report, the operator may begin placing waste in the new cell areas.

The entire liner system for the landfill has been constructed and 30-Day Notice of Cell Completion letters have been submitted for all of the disposal cells. In the event that the soil liner needs to be repaired as described in Attachment D-7 in the future, written notice in the form of a soil liner evaluation report (SLER), as described in §330.341, will be submitted to the TCEQ at the completion of the liner construction.

2.0 RECORDKEEPING REQUIREMENTS (30 TAC §330.125)

During the operating life of the landfill, Beck Landfill will maintain a written site operating record (SOR). This record will be retained for the life of the facility including the post-closure care period. The SOR is a complete collection of facility permit documents, designs, operating procedures, monitoring data and waste receipt information as required by 30 TAC §330.125.

2.1 Documents (§330.125(a))

Beck Landfill will maintain the SOR on site. Consistent with §330.125(a), copies of documents that are part of the approved permitting process that are considered part of the SOR are listed in **Table 1**.

TABLE 1 DOCUMENTS THAT ARE PART OF THE SOR (FORMERLY TABLE 2.1)

Site Operating Records	Frequency
Access Control Inspections	Monthly
Access Control Repairs not completed within 8 hours	As required
Alternate Schedules	Per Occurrence
Closure and Post-Closure Plans	Submittal of PA and within 7 days after receipt of TCEQ approval of changes
Cost Estimates for Closure and Post-Closure	As required and within 7 days after receipt of TCEQ approval of changes
Cover Inspection Reports	Daily on days when cover soil being placed
Facility Operation, PM Approvals, and Technical Assistance Correspondence & Responses	Per occurrence and within 7 days after receipt of TCEQ approval of changes or receipt from TCEQ
Financial Assurance Documents for Closure & Post-Closure including Inflation Adjustments	Annually and within 7 days after receipt of TCEQ approval of changes
Fire Occurrence Notices	As needed
Gas Monitoring Results	Quarterly and within 7 days of completion
Groundwater Monitoring and Corrective Action Demonstration, Certification, Monitoring, Testing & Analytical Data, if applicable	Monitoring – Semi-Annual, Corrective Action – as required and within 7 days of completion or receipt of analytical data
Landfill Gas Management Plan	Submittal of PA and after receipt of TCEQ approval of changes
Landfill Inspections	As required
Landfill Marker Inspections	Monthly
Leachate and Contaminated Water Plan	Submittal of PA and after receipt of TCEQ approval of changes
Litter Pickup	As required
Location Restriction Demonstrations	Submittal of PA and after receipt of TCEQ approval of changes
Other Documents specified in the Permit or by the ED	Submittal of PA and after receipt of TCEQ approval of changes
Personnel Operator Licenses	As required
Personnel Training Records 335.586(d)-(e)	As required
Pesticide Use for Vector Control	As required
Ponded Water Inspection Records	Monthly
Post-Closure Monitoring, Testing and Analytical Data, if applicable	As required and within 7 days of completion or receipt of analytical data
Quarterly and Annual Waste Receipt Reports	Quarterly

Site Operating Records	Frequency
Remediation Plans for Explosive and Other Gasses, if applicable	As required within 7 days after receipt of TCEQ approval of changes
SDP	Submittal of PA and after receipt of TCEQ approval of changes
Site Permit	After approval of Permit Application
SOP	Submittal of PA and after receipt of TCEQ approval of changes
Special Waste Documentation, Manifests, and all other documents relating to Special Waste	As required
Spray Applied Alternate Daily Cover (ADC) Material	Not applicable
Surface Water Protection and Drainage Plan Required Receipts and Submittals	As required
Unauthorized Waste Receipts/Removal	As required
Unauthorized, Regulated/Hazardous, and Prohibited PCB Waste Inspection Records, Training, Receipt, Removal, and Notification Reports	As required and within 7 days after completion

2.2 Analytical Data (§330.125(b))

Beck Landfill, in accordance with §330.125(b), within seven working days following completion or receipt of analytical data, will record and retain in the SOR those items as listed in **Table 1**.

2.3 Notification (§330.125(c))

Beck Landfill, in accordance with §330.125(c), will place the items included in **Table 1** into the SOR within the specified time period. Beck Landfill will maintain the SOR in an organized format, where information is easily locatable and retrievable. The SOR will be furnished to the executive director upon request, and will be made available on site for inspection by the authorized TCEQ representatives.

2.4 Record Retention (§330.125(d))

Beck Landfill, in accordance with §330.125(d), will retain all information contained within the SOR and all plans required for the life of the site, including the post-closure care period.

2.5 Personnel Training Records and Licenses (§330.125(e)(f))

In accordance with §330.125(e), Beck Landfill will maintain personnel training records in accordance with §335.586(d) and (e). Personnel training requirements will be consistent with Section 3.1 of this SOP, “Personnel and Training”. Personnel training records for current Beck Landfill personnel will be maintained until closure of the site. Records of former employees will be maintained for three years from the date the employee last worked at the Beck Landfill. Records for each personnel will include name, job title, job description, introductory training, continuing training, and documentation of training. In accordance with §330.125(f), the Beck Landfill will maintain personnel operator licenses issued in accordance with Chapter 30,

Subchapter F, relating to Municipal Solid Waste Facility Supervisors. Personnel training records and operator licenses will be maintained in the SOR.

2.6 Annual Waste Acceptance Rate (§330.125(h))

Beck Landfill will maintain, as part of the SOR, documentation of the annual waste acceptance rate for Beck Landfill in accordance with §330.125(h). Records will include maintaining the quarterly solid waste summary reports and the annual solid waste summary report as required by §330.675. The annual waste acceptance rate, as established by the sum of the previous four quarterly summary reports, will be evaluated by Beck Landfill to determine if the waste acceptance rate exceeds the rate estimated in the approved permit and SDP. Should an increase in waste acceptance be established, the Beck Landfill will determine if the increase is due to a temporary occurrence. Should the waste acceptance rate exceed that established in the approved permit, a permit modification will be prepared in accordance with the current applicable TCEQ regulations to propose changes, if required, to manage the increased waste acceptance rate.

Beck Landfill anticipates that the site's waste acceptance rate will increase during the life of the site. Based on the volumes submitted for inclusion in the Beck Landfill TCEQ "FY 2011 MSW Annual Report", Beck Landfill accepted 182,267 tons for FY 2011.

This SOP includes variable provisions to manage the increased waste acceptance rate to protect public health and the environment.

3.0 PERSONNEL AND TRAINING (30 TAC §330.127)

Beck Landfill will provide on-site management of the landfill operations. The level of employment at the landfill will be determined by the waste acceptance volume, and shall be sufficient to comply with the requirements of the site-operating plan and with the provisions of the site permit.

3.1 Personnel (§330.127(1))

Beck Landfill will be staffed with qualified individuals experienced with municipal solid waste disposal operations and/or earthmoving construction projects. See Table 2, which outlines landfill staffing levels.

TABLE 2 LANDFILL STAFFING LEVELS (FORMERLY TABLE 3.1)

Landfill Position	Min #	Max #
Landfill Facility Manager (LFM)	1	1
Landfill Supervisor (LS)	1	1
Equipment Operators	3	5
Gate Attendants	1	2
Landfill Spotters	2	5
Other Personnel (laborers)	1	3

3.1.1 Landfill Facility Manager (LFM)

The LFM is the individual having managerial oversight of the landfill and is responsible for management of the entire site. The LFM is responsible for assuring that adequate personnel and equipment are available to provide for site operations in accordance with SDP, SOP, and TCEQ regulations. The LFM will, at a minimum, have a high school diploma or equivalent, experience in municipal solid waste disposal operations.

3.1.2 Landfill Supervisor (LS)

Under the general direction of the LFM, the Landfill Supervisor (LS), is responsible for daily operations, site personnel, administration of the SOP, and will also serve as the emergency coordinator. The LS may designate other personnel to assist with the daily site operating requirements. The LS will designate an individual to fulfill his duties in the event that they are unavailable during waste acceptance hours. When the LS is unavailable during waste acceptance hours, the LS's designee will have the same basic on-site training as required for the LS. The LS and his alternate, at a minimum, will have experience in earthmoving operations, and experience in municipal solid waste disposal operations. The LS and his alternate will obtain and maintain a license consistent with the requirements of §§30.201, 30.207, 30.210, and 30.212.

3.1.3 Equipment Operators

Equipment operators are responsible for the safe operation of their equipment, and depending on their job responsibility, may be trained to recognize unauthorized waste. Equipment operators, when necessary,

will monitor and direct the unloading of vehicles, and they may also perform random load inspections, general site maintenance, construction, litter abatement, and general site cleanup. Equipment operators will participate as necessary to prevent accidents and report unsafe conditions to the LS.

At a minimum, all applicable equipment operators shall be qualified to safely and effectively operate equipment normally operated at Type IV landfills, have the ability to be trained to operate other heavy equipment on-site, and have the ability to receive and comprehend on the job training in landfill operations, health and safety, and waste identification.

3.1.4 Gate Attendants

Gate attendant(s) stationed at the gatehouse, under the direction of the LS, are primarily responsible for maintaining records of vehicles and solid waste entering the landfill. Gate attendants will be trained in site safety procedures, to visually check for unauthorized wastes, to determine waste volumes, and to collect disposal fees. A gate attendant will be present during hours that the landfill is open to the public. Gate attendants will report to the Landfill Supervisor, and at a minimum, will have a basic understanding of landfill related accounting principles, and communication skills.

3.1.5 Landfill Spotters

Landfill Spotters may be employed at the landfill working face. These personnel shall be responsible for the directing of trucks backing up for unloading. The spotters will also be responsible for visually screening each load as it is unloaded. In the event that unauthorized or prohibited waste is observed, procedures outlined in section 5.0 of this SOP will be followed by applicable site personnel.

3.1.6 Other Personnel

Other site personnel and/or laborer(s) may be employed from time to time in other categories such as maintenance, construction, litter abatement, and general site cleanup. These personnel must have appropriate training for the tasks to which they are assigned. Site personnel may be permanent, part-time or temporary employees.

3.2 Training (§330.127(4))

Beck Landfill personnel will be trained consistent with the applicable training requirements as defined in §335.586(a) and (c). Personnel will receive training through a combination of on-the-job training, company-provided training and classroom instruction as necessary. The training program will be directed by a person trained in waste management procedures and will include instruction that teaches facility personnel waste management procedures, including contingency plan implementation, relevant to the position(s) in which they are employed.

At a minimum, the training program will be designed to ensure that personnel are able to respond effectively to emergencies by familiarizing site personnel with emergency procedures, emergency equipment, and emergency systems.

Facility personnel must successfully complete the program required within six months after the date of their employment or assignment to a new position at the facility, whichever is later. Employees must not work in unsupervised positions until they have completed the training requirements.

Beck Landfill will ensure that facility personnel take part in an annual review of the initial training as required.

4.0 EQUIPMENT (§330.127)(2)

Sufficient equipment will be provided to conduct site operations in accordance with the site design and permit conditions. Equipment requirements may vary in accordance with landfill operations and/or the waste acceptance rate at any given time. Other equivalent types of equipment may be substituted on an as-needed basis. A description, including the minimum number, size, type, and function, of the equipment to be utilized at the facility based on the estimated waste acceptance rate and other operational requirement is listed in **Table 3**. Provisions for back-up equipment during periods of breakdown or maintenance of equipment listed in **Table 3** include the onsite availability of a comparable or alternately acceptable piece of equipment to ensure the continuation of site operations in accordance with permit conditions. As a back-up provision, in the case that such equipment is not readily available, appropriate equipment will be rented until such a time that company owned or leased equipment is available.

TABLE 3 LANDFILL EQUIPMENT LIST (FORMERLY TABLE 4.1)

Equipment Description	Number of Units per		Equipment Size	Equipment Function
	< 1.5 million cyds/yr	>1.5 million cyds/yr		
Landfill Compactor	1	2	Minimum weight of 50,000 pounds	Waste compaction and fire protection
Bulldozer	1	1	Caterpillar D6 or equivalent	Waste spreading, waste compaction, cover soil spreading, slope maintenance and fire protection
Excavator	1	1	Minimum weight of 20,000 pounds	Cover soil excavation, cell excavation construction, and fire protection
Front End Loader	1	2	John Deere 544 Equivalent or larger	Loading of soil, fire protection, retrieval of recyclable materials and removal of non-conforming wastes from working face, road maintenance
Dump Truck	1	2	Minimum heaped capacity of 10 cubic yards	Hauling of cover soil, hauling of excavated cell materials and fire protection
Motor Grader/Maintainer	1	1	Minimum weight of 10,000 pounds	Site road maintenance, slope maintenance
Water Pump	1	1	4" or 6" Pump	Removal of below grade stormwater and perched groundwater
Water Truck	1	1	Minimum 1,500 gallon tank capacity	Site maintenance, dust control, and fire protection
Sweeper	1	1	Minimum 4-ft broom width	Site maintenance, hard surface sweeping, dust and mud control

5.0 DETECTION AND PREVENTION OF DISPOSAL OF PROHIBITED WASTES (30 TAC §330.127(5))

5.1 General Procedures

Beck Landfill, in accordance with 30 TAC §330.127(5), has established procedures for the detection and prevention of the disposal of unauthorized or prohibited wastes, including regulated hazardous waste, and polychlorinated biphenyls (PCB) wastes. The detection and prevention program will include training of site personnel to recognize and reject prohibited wastes, how to perform a random inspection, how to control site access, what training will be provided for site personnel, and what procedures are required in the event of identification of prohibited wastes.

The detection and prevention program includes the following steps:

- Observation of each load that is disposed of at the active face.
- Random inspections of incoming loads.
- Records of inspections.
- Training for appropriate landfill personnel to recognize unauthorized, prohibited waste, regulated hazardous waste, and PCB waste.
- Notification to the TCEQ Executive Director of any incident involving the receipt or disposal of regulated hazardous waste or PCB waste.
- Provisions for remediation of the incident in accordance with applicable regulations.
- Signs prohibiting the receipt of unauthorized and prohibited wastes including hazardous waste and PCB waste will be posted on-site.
- Informing waste haulers of wastes unauthorized and/or prohibited for acceptance and disposal at the site.

5.2 Load Inspection at the Active Face (§330.127(5)(A))

Loads at the active working face of the landfill will be directed by a trained landfill spotter or equipment operator. These personnel will visually inspect waste as it is unloaded from vehicles. Should any indication of unauthorized and/or prohibited waste be detected, appropriate landfill personnel will stop the unloading of the vehicle to allow for a thorough inspection of the load. The driver will be directed to a load inspection area located near the working face, where the load will be discharged from the vehicle. The load inspector will break up the waste pile and inspect the material for any unauthorized, prohibited and/or regulated hazardous waste.

5.3 Random Inspections (§330.127(5)(A))

Beck Landfill will perform documented random inspections as required by §330.127(5)(A) on a minimum of 1% of incoming loads. Loads selected for random inspections will be directed to a specified area close to but separate from the active waste disposal area. The load will be inspected by the Landfill Supervisor and/or qualified landfill personnel. The random load inspector(s) will manually and visually inspect the

load and take appropriate action(s) based on the inspection findings. Conforming loads that have been randomly inspected will be sent for final disposal at the landfill active face. In the event that non-conforming materials are discovered during the random inspection, those materials will be properly and safely segregated and handled appropriately as detailed in section 5.7 of the SOP. The random inspection will be documented on a Random Inspection Form as specified in **Appendix A (Forms)**.

5.4 Recordkeeping (§330.127(5)(B))

The LS is required to maintain and include in the SOR the following:

- Load inspection reports
- Records of regulated hazardous or PCB waste notifications
- Personnel training records

Load inspection reports will be completed for each inspected load. The reports will include at a minimum, the date and time of inspection, the name and address of the hauling company, driver name, the type of vehicle, the size and source of the load, contents of the load, indicators of unauthorized and/or prohibited waste, and results of the inspection.

5.5 Training (§330.127(5)(C))

The LFM, LS, equipment operators, and gate attendants will maintain a thorough understanding of waste screening procedures and will be trained as necessary in the following areas:

- Load inspection procedures
- Identification of unauthorized, prohibited and regulated hazardous and/or PCB wastes
- Waste handling procedures
- Health and safety procedures
- Recordkeeping

Documentation of this training will be placed in the SOR.

5.6 Notification (§330.127(5)(D))

TCEQ notification is required if regulated hazardous waste or PCB waste is received or disposed of in the landfill. When notification is required, records of the notifications will be kept in the SOR and will include the date and time of notification, the individual contacted, and the information reported.

5.7 Managing Prohibited Wastes (§330.127(5)(E))

Unauthorized and/or prohibited waste detected during inspections will be returned immediately to the waste hauler. If the waste hauler is not available, the prohibited waste will be stored in such a manner to protect human health and the environment until provisions for proper removal can be arranged.

In the event that regulated hazardous or PCB wastes are detected, the TCEQ will be notified and as soon as is practical, the hauler will be required to properly contain and remove the hazardous or PCB waste from the site.

In the case of putrescible waste being detected, the putrescible waste may either be returned to the waste hauler at time of unloading or if hauler is unavailable, the putrescible waste may be temporarily managed in an appropriate Type I waste container onsite. Putrescible waste will not be disposed of onsite and will be removed from the facility and disposed of at a facility authorized to accept such waste within 24 hours.

5.8 Special Procedures for Waste in Enclosed Containers or Enclosed Vehicles

As indicated in 30 TAC §330.169, stationary compactors permitted in accordance with 30 TAC

§330.7 and municipal transporter routes permitted in accordance with 30 TAC §330.103 are exempt from the requirements identified in 30 TAC §330.169(1)-(3) and transporters will be allowed to discharge waste from these stationary compactors at the Beck Landfill. However, the landfill will obtain, from the transporter, load documentation for a municipal transporter route or a stationary compactor, as appropriate, prior to allowing discharge of the waste at the landfill. The load documentation will be maintained as a part of the SOR.

Other waste received in enclosed containers or enclosed vehicles will only be accepted per provisions identified in 30 TAC §330.169(1)-(3).

6.0 SITE SAFETY (30 TAC §330.127(6))

6.1 General Site Safety

Site safety will be promoted by properly trained personnel using well-maintained equipment to perform standard work procedures. Site safety will be enhanced by limiting access to the active areas only to authorized personnel. In the event of an emergency, planned emergency response procedures will be followed.

All site personnel will receive site-specific training consisting, but not limited to, the following:

- Safe work practices
- Nature of anticipated hazards
- Equipment and vehicle safety
- Site access controls
- Hazardous material identification and communication
- Fire safety
- Emergency response
- Employee rights and responsibilities

A record of training will be maintained in each employee's personnel file to confirm that each employee has received the proper training.

In the event of an emergency, site personnel will assess the situation, notify the LS or designated supervisor, and take appropriate actions. Emergency numbers will be posted in the landfill gatehouse as indicated below.

6.1.1 Emergency Numbers

Office	Phone
Ambulance	911 or 210-619-1400
Schertz Fire Department	911 or 210-619-1300
Schertz Police Department	911 or 210-619-1200
Guadalupe County Sheriff's Office	911 or 830-379-1224

6.2 Preparedness and Prevention Measures

Preparedness and prevention measures have been developed to minimize both frequency and severity of accidents and emergency situations. These measures depend on the attentiveness and state of readiness of site personnel. Preparedness and prevention measures have been developed for one general category and two specific areas of the site: the gatehouse and the onsite access routes. These preparedness and prevention measures are detailed in the following sections.

6.2.1 General

General preparedness and prevention measures that will be followed shall include:

- Employee breaks or rest periods will be provided to minimize fatigue, improve alertness, and thereby reduce accident potential.
- Access controls will provide for the safety of non-landfill personnel.
- Routine preventive maintenance of equipment will be provided.
- Daily and weekly site inspections of the working areas will be performed by the Landfill Supervisor or designated employee.
- Appropriate personal protection equipment (PPE) will be kept onsite and maintained in good repair.
- Adequate turning area for hauling vehicles will be provided.
- Scavenging and unauthorized salvaging will not be allowed.
- Waste unloading will be restricted to designated areas only.
- Site personnel will be alert for possible hazardous or other unauthorized wastes.
- Unauthorized and/or prohibited wastes will be controlled or contained and removed as necessary.

6.2.2 Gatehouse

Preventative measures that will be followed in the gatehouse include the following:

- Verbally and/or visually screen all incoming waste loads for unauthorized wastes.
- Monitor to see that all incoming wastes loads are adequately covered, or otherwise protected or contained.
- Visually observe incoming vehicles for evidence of improper operation, faulty equipment, or other conditions that could be hazardous to personnel or other persons onsite.
- Maintain access to appropriate emergency equipment and first-aid materials.
- Display signs warning transporters that wastes including regulated hazardous wastes and other non-allowable wastes are prohibited.

6.2.3 Landfill Entrance Road, Haul Road, and Access Road

Landfill haul road and access road preventative measures include the following:

- Display speed limit, directional, and other precautionary signs.
- Provide road passable for two-way traffic.
- Maintain roadway free from obstructions.

7.0 FIRE PROTECTION PLAN (30 TAC §330.129)

A Fire Protection Plan (FPP) shall be established and followed as shown in the following subsections.

7.1 Fire Prevention Procedures

The following steps will be taken regularly by designated landfill personnel to prevent fires:

- Open burning of waste is prohibited at all times.
- Burning waste from incoming waste loads will be prevented from being dumped in the active area of the landfill. The gate attendant and equipment operators will be alert for signs of burning waste such as smoke, steam, or heat being released from incoming waste loads.
- Fuel spills will be contained and cleaned up immediately.
- Landfill equipment will not remain directly on the active working face of the site overnight.
- Dead trees, brush, or vegetation adjacent to the active waste disposal area will be removed, and grass and weeds managed so that forest, grass, or brush fires cannot easily spread to the landfill.
- Smoking is not allowed on the active areas of the landfill.
- Waste material will be properly compacted and covered with compacted earthen material.

The site will be equipped with fire extinguishers of a type, size, location, and number as recommended by the local fire department. Each fire extinguisher will be fully-charged and ready for use at all times. Each extinguisher will be inspected on an annual basis and recharged as necessary. These inspections will be performed by a qualified service company, and all extinguishers will display a current inspection tag. Inspection and recharging will be performed following each use. At a minimum, the gatehouse, equipment and maintenance area, and all landfill equipment and vehicles will be equipped with fire extinguishers.

A soil stockpile and site equipment (e.g., front-end loaders, haul trucks, excavators) will be maintained at all times to extinguish an onsite fire. A soil stockpile will be provided within 1,000 feet of the active working face and any other areas actively receiving materials for disposal, processing, temporary storage or recycling. Loaders and haul trucks will be used together to deliver sufficient soil to extinguish the fire.

The stockpile(s) of earthen material available will be sized to cover the working face with a minimum six-inch layer of earthen material within one hour as shown in **Table 5**.

TABLE 5 FIRE PROTECTION STOCKPILE CALCULATION (FORMERLY TABLE 7.1)

Size of Working Face		Area of Working Face			Total of Stockpile Size
L	W	LxW (Sq Ft)	Cu Ft	Cu Yd	Cu Yd x 1.15
150	100	15,000	7,500	278	320
150	125	18,750	9,375	347	400
150	150	22,500	11,250	417	480

The Fire Suppression Calculations below are based upon the use of:

Two (2) five cubic yard loaders = 10 cubic yards transfer capacity

15 cubic yard haul truck and 25 cubic yard haul truck = 35 cubic yards haul capacity

TABLE 6 FIRE SUPPRESSION SOIL REQUIREMENTS (FORM TABLE 8.1)

Length (feet)	Height (feet)	Depth (feet)	Volume of Soil (cubic yards (CY))
100	50	0.5	93
150	100	0.5	278
200	150	0.5	556

Response Time Calculation Scenarios Assumptions:

Front End Loader Capacity is 10 CY Haul Truck

Capacity is 35 CY

Haul Truck Speed is 10 MPH

Distance to soil stockpile is 1,000 feet (0.19 miles) Load time for trucks is 2 minutes

Therefore:

Travel time = 0.19 miles / 10 miles per hour = 1.14 minutes per load (one way)

= 1.14 minutes round trip + 2 minute load time = 3.14 minutes per load

93 CY / 35 CY/Load = 2.7 Loads x 3.14 minutes = 8.3 minutes

278 CY/35 CY/Load = 7.9 Loads x 3.14 minutes = 24.7 minutes

556 CY/35 CY/Load = 15.9 Loads x 3.14 minutes = 49.9 minutes

7.2 Specific Fire-Fighting Procedures

The following procedures will be followed in the event of a fire:

If a fire occurs on a vehicle or piece of equipment, the equipment operator should bring the vehicle or equipment to a safe stop. If safety of personnel will allow, the vehicle must be parked away from fuel supplies, uncovered solid wastes, and other vehicles. The engine should be shut off and the brake engaged to prevent movement of the vehicle or piece of equipment. Fire extinguishers should be used to extinguish fire, if possible, without undue risk to the equipment operator.

If a fire is in the working face, the working face should immediately be covered with earthen material from the stockpile to smother the fire.

Firefighting methods include smothering with soil, separating burning material from other waste, and spraying with water from the water truck or water pumped from nearby water sources. If detected soon enough, a small fire may be fought with a hand-held fire extinguisher. A fire extinguisher will be located at the gatehouse and on each piece of equipment.

7.3 General Rules for Fires

The following rules will be implemented in the event of a fire at Beck Landfill:

- Contact the City of Schertz Fire Department by calling 911.
- Immediately contact the gatehouse and LS.
- Equipment operators will be equipped with two-way radios or cell phones.
- Alert other site personnel.
- Assess extent of fire, possibilities for the fire to spread, and alternatives for extinguishing the fire.
- If it appears that the fire can be safely fought with available firefighting devices until arrival of the Fire Department, attempt to contain or extinguish the fire.
- Upon arrival of Fire Department personnel, direct them to the fire and provide assistance as appropriate.
- Do not attempt to fight the fire alone.
- Do not attempt to fight the fire without adequate personal protective equipment.
- Be familiar with the use and limitations of firefighting equipment available onsite.

7.4 Fire Protection Training

Landfill personnel will be trained in the contents of the FPP. The following topics will be addressed:

- Fire prevention
- Fire safety
- Firefighting procedures

7.5 TCEQ Notification

Beck Landfill will make every reasonable effort to contact the TCEQ regional office immediately upon detection of a fire, if the fire is not extinguished within ten minutes of detection. At a minimum, the TCEQ regional office will be contacted no later than four hours by phone, and in writing within 14 days of the fire. The notification will include a description of the fire and resulting response.

8.0 OPERATIONAL PROCEDURES (30 TAC §330.127(3))

8.1 Access Control (§330.131)

Various measures are in place to control access to the Beck Landfill and other operations located within the facility boundary. Access controls are designed to prevent unauthorized access to operational areas in an effort to protect human health and safety and the environment. Additionally, site security measures are in place in an effort to reduce vandalism or disruption of Beck Landfill operations caused by unauthorized site entry.

Public access to the landfill is permitted via a gated entrance from Farm to Market Road (FM)

78. This gate will remain closed and locked when the facility is closed for business. Chain link fencing is installed parallel to FM 78. The Beck Landfill direct entrance is located approximately 630 feet southeast of FM 78, south of the co-located ready mix concrete facility. A scale and office are positioned such that all traffic entering and exiting the Beck Landfill can be monitored by site personnel.

No other public roadway intersects the Beck Landfill facility boundary. The operational areas of the landfill are located approximately 1,230 feet south of FM78. The site is surrounded by Cibolo Creek to the southwest and south. Zuehl Road parallels Line A of the landfill perimeter. Barbed wire fencing, expanded metal fencing and debris screens provide limited access controls from Zuehl Road to the northwest of the operational area. Barbed wire fencing is also currently installed around the entire perimeter of the active areas of the Beck Landfill.

8.1.1 Site Security

Unauthorized entry into the site is minimized by controlling access to the landfill site with perimeter fencing and a lockable steel security gate at the entrance.

Entrance to the landfill is monitored by a gatehouse attendant during site operating hours. Outside of normal operating hours, the site access gate will be locked and/or monitored by onsite personnel. Security cameras are installed to record vehicle traffic at the scalehouse.

Entry to the active disposal area of the site is restricted to designated personnel, approved waste haulers, and properly identified persons whose entry is authorized by appropriate site personnel. Visitors may be allowed in active areas only when accompanied by a site representative.

8.1.2 Traffic Control

Public access to the landfill site is provided via the main public entrance road from FM 78. Signs are located along the entrance road, directing traffic to the gatehouse. The gate attendant will restrict site access to authorized vehicles and direct vehicles appropriately. To minimize incoming landfill traffic from queuing on FM 78, landfill personnel may direct traffic to form multiple lines upon entering the main access gate, prior to ticket processing at the gatehouse.

Authorized waste haulers will be directed to the appropriate waste disposal area by signs located along the designated landfill haul road and/or access road. Authorized waste transporters will deposit their loads as

directed and depart the site via the main site entrance/exit road. Site personnel will provide traffic directions as necessary to facilitate safe movement of vehicles.

Roads not being used for access to disposal areas will be blocked or otherwise marked for no entry.

8.1.3 Inspection and Maintenance Schedule

The LFM and the LS conduct daily perimeter inspections along the perimeter of the operational areas of the Beck Landfill. Maintenance is conducted, as necessary, to ensure the effectiveness of perimeter controls.

8.1.4 Access Breach

Breaches to perimeter fencing or road barricades will be repaired as soon as practicable. Temporary repairs will be installed within 24 hours of detection. If a permanent repair cannot be completed within 8 hours, the TCEQ Region 13 office (and any local pollution agency with jurisdiction that has requested notification) will be notified and a timeline for corrective action proposed. Permanent repairs that can be completed within 8 hours of detection do not need to be reported to the TCEQ Region 13 office.

8.2 Unloading of Waste (§330.133)

Trained personnel will monitor the incoming waste on the trucks at the gatehouse, prior to unloading. A trained staff person shall also be on duty during operating hours at each area where waste is being unloaded to direct and observe the unloading of solid waste. These personnel will be familiar with the rules and regulations governing the various types of waste that can or cannot be accepted for disposal.

The unloading of waste in unauthorized areas is prohibited. Waste unloading will be controlled to prevent disposal in locations other than those specified by site management. Any otherwise acceptable waste deposited in an unauthorized area will be promptly removed and properly disposed of at the working face. Signs with directional arrows and portable traffic barricades will help to restrict traffic to designated disposal locations.

Written procedures for the unloading of waste, in accordance with 30 TAC §330.133(f), will be retained onsite and made available for review by the executive director.

Refer to Section 5.0 of this SOP, "Detection and Prevention of Disposal of Prohibited Wastes" for additional waste handling procedures. The owner or operator is not required to accept any solid waste that the owner or operator determines will cause or may cause problems in maintaining full and continuous compliance with these sections.

8.2.1 Landfill Working Face (§330.133)

The unloading of solid waste shall be confined to as small an area as practical. The active landfill working face will be confined to an area consistent with the rate of incoming waste, while allowing for safe and efficient operation. The active landfill working face will be maintained not to exceed a maximum size of 150 feet by 150 feet.

8.2.2 Other Possible Unloading Areas

Designated Wet Weather Area
Designated Public Drop Off Area
Designated Asphalt Shingle Recycling Area
Designated C&D Recycling Area Designated
Wood Recycling Area

8.2.3 Transporter Requirements (§330.133(h))

As a requirement, it is the responsibility of all transporters to secure all incoming loads to prevent to occurrence of windblown wastes and to provide properly executed documentation, as necessary, for all incoming loads. This documentation includes, but is not limited to the following;

- Manifests for authorized Special Wastes
- Manifests for Non-Regulated Asbestos Containing Materials.
- Permits for enclosed containers

Penalties may, at the discretion of the operator, be imposed in the event transporters do not meet these requirements.

8.3 Hours of Operation (§330.135)

The waste acceptance hours for Beck Landfill will be from 7:00 a.m. to 7:00 p.m., Monday through Friday and 7:00am to 12:00pm on Saturday. The site is closed to the public on Sunday. Beck Landfill will post the authorized waste acceptance hours on the site sign as specified in §330.137.

There is no individual hourly limitation on conducting waste acceptance, filling, construction, earthmoving, or other activities that take place within the landfill waste acceptance hours. Operations separate from actual waste acceptance activity may be conducted as necessary except for between the hours of 9:00pm and 5:00am, seven days a week. As allowed in 30 TAC §330.135(c), temporary waste acceptance hours may be established for emergencies at the executive directors discretion. In the event of temporary waste acceptance hours are established, adequate records will be maintained per the requirements of 30 TAC §330.135(d)

Alternate operating hours for special occasions, special purpose events, holidays, or other special occurrences may be designated (up to five days per year).

8.4 Site Sign (§330.137)

A sign will be displayed at the gated entrance to the site. This sign will measure at least 4 feet by 4 feet, and have lettering of at least 3 inches in height. The sign will state the name of the site, type of site, hours and days of operation, and the TCEQ permit number. An emergency 24-hour contact phone number and the local emergency fire department phone number will also be included. The emergency contact phone number will reach an individual with the authority to obligate the Beck Landfill at all times the landfill is closed. The site sign will be readable from the site's main entrance.

Signs prohibiting receipt of prohibited wastes including putrescible waste, hazardous waste and PCB waste, closed drums, smoking, and un-tarped loads will be posted at the gatehouse.

8.5 Control of Windblown Solid Waste and Litter (§330.139)

The site will be operated in such a way as to minimize windblown material. The working face will be maintained and operated in a manner to control windblown solid waste. Windblown material and litter will be collected and properly managed to control unhealthy, unsafe, or unsightly conditions by the following methods:

- Waste transportation vehicles using this Beck Landfill will be required to use adequate covers or other means of covering and securing loads. The adequacy of covers or securing of incoming wastes will be checked at the gatehouse. A sign will be prominently displayed at the gatehouse stating that all loads shall be properly covered and secured.
- The active working face will be limited to as small an area as practical for the safe operation of the incoming waste hauling vehicles, and operation of compaction equipment, and delivery and placement of weekly cover soil.
- Excess working face area will be covered as frequently as needed, to assist with the control of windblown waste.
- The Beck Landfill will provide litter control fences, as necessary, at appropriate locations near the working face and elsewhere. The litter control fences will be constructed of wire or plastic mesh screens attached to portable or permanent frames or temporary fences. The litter control fence will be of sufficient height and will be located as close as practical to the active area to control windblown waste and litter.
- Windblown waste and litter along the entrance road, the gatehouse area, within the permit boundary, and that has accumulated along the permit boundary will be collected once a day and returned to the active working face. Should windblown waste cross the permit boundary onto adjacent property, landfill personnel, with landowner permission, will access the property and conduct litter pickup. Some adjacent properties around the landfill permit boundary is owned by Beck Landfill related companies, therefore permission is not required for personnel to enter those adjacent properties for litter pick- up,
- Adjacent filled areas and the landfill flood control dike system will provide protection from the prevailing winds. If additionally necessary, earthen berms will be used to assist in control of windblown wastes by providing a windbreak against prevailing winds.

8.6 Easements and Buffer Zones (§330.141)

8.6.1 Easements (§330.141(a))

Solid waste unloading, storage, disposal, or landfill operations will not occur within any easement, buffer zone, or right-of-way that crosses the site. No solid waste disposal will occur within 25 feet of the centerline of any utility line or pipeline easement, unless otherwise authorized by TCEQ. All easements will be clearly marked as specified in Section 8.7 of this SOP. Pipelines and utility easements will be marked with posts extending a minimum of six feet above ground surface at intervals that do not exceed 300 feet. There are currently no easements or right-of-ways located within the permit boundary.

8.6.2 Buffer Zones (§330.141(b))

The buffer zone is defined as the area between the permit boundary and the limit of waste disposal. The limit of waste is located along the inside edge of the perimeter road. No solid waste unloading, storage, disposal, or processing operations will occur within any buffer zone. The buffer zones will provide for safe passage for fire-fighting and other emergency vehicles. The buffer zones vary around the perimeter of the site, but in no case are they less than 50 feet. All buffer zones will be clearly marked as specified in Section 8.7 of this SOP.

8.7 Landfill Markers and Benchmark (§330.143)

Landfill markers will be installed to clearly identify significant features. The markers will be steel, wooden, or other durable material posts, and will extend at least 6-ft above the ground surface. The markers will not be obscured by vegetation and will be placed in sufficient numbers to clearly show the required boundaries. Markers will be inspected on a monthly basis and markers that are removed or destroyed will be replaced within 15 calendar days of discovering a marker does not meet regulatory requirements. A permanent concrete set benchmark monument, as required by 30 TAC §330.143(8) and indicated in **Figure 1** will be installed and maintained within the landfill permit boundary. Records of all marker and benchmark inspections will be maintained at the facility. Markers will also be repainted as needed to retain visibility. Guidelines for type, placement, and color-coding of markers are outlined below.

1. **Site Boundary:** Site boundary markers will be installed and will be painted black. The markers are placed at each corner of the site and along the permit boundary at intervals no greater than 300 ft.
2. **Buffer Zone:** Buffer zone markers will be painted yellow. Markers identifying the buffer zone will be placed a minimum of 50 ft from the permit boundary and at the buffer zone corners and along the buffer zone boundary at intervals of no greater than 300 ft.
3. **Easement and Right-of-Way:** If and where applicable, easement and right-of-way markers will be painted green. The markers will be placed along the boundary of easement and right-of-way. Markers will be placed at each corner within the site and at the intersection of the site boundary.
4. **Landfill Grid System:** Landfill grid system markers will be painted white. The grid system will consist of black lettered markers along two opposite sides and numbered markers along the other two sides. The markers will be spaced no greater than 100 ft apart measured along perpendicular lines. Intermediate markers will be installed in the case where markers cannot be seen from opposite boundaries.
5. **Flood Protection Markers:** If and where applicable, flood protection markers will be painted blue. The markers identifying the flood protection zone will be placed at each corner of the site and along the limits of the zone, at intervals of no greater than 300 ft.
6. **Point of Compliance for Groundwater Monitoring System (§330.403(a)(2)):** The Beck Landfill consists of individual waste cells situated within an elevated bermed perimeter. Impermeable slurry-walls constructed within the elevated bermed perimeter, creating a continuous barrier between the contents of the landfill and the surrounding environment. In order to determine whether the landfill has released contaminants to the uppermost aquifer, five (5) monitoring wells are installed along the exterior of the dike line perimeter and associated

piezometer wells are installed along the interior of the dike line perimeter. Annual water quality testing is conducted in each of the monitoring wells and the results are compared to historical data collected at these points. If an anomaly is detected from historical results, monitor wells are re-tested and additional testing may be performed at each of the associated piezometer wells to determine whether constituents of concern are detectable within the dike line. Additional sampling may be conducted in the Cibolo Creek, which surrounds the landfill on three sides to determine if constituents of concern are detectable in surrounding surface water.

FIGURE 1 BECK LANDFILL MARKERS AND BENCHMARK

8.8 Material along the Route to the Site (§330.145)

Beck Landfill will take steps to ensure that vehicles hauling waste to the site are covered with a tarp, net, or other means to properly secure the load. These steps are necessary to prevent the escape of any part of the load. Signs are posted at the landfill entrance gate and gatehouse notifying haulers of this requirement. Enforcement of this rule may include 1) reporting offenders to proper law enforcement officers, 2) adding surcharges, or 3) prohibiting haulers access to the landfill.

Beck Landfill will provide for the cleanup of Type IV compatible waste materials spilled along and within the right-of-way of FM 78 (or any future entrance to the landfill from a public access road) for a distance of 2 miles in either direction from the entrance road connection to FM 78. Cleanup for the spilled materials will be performed once per day. The LFM or LS will consult with TxDOT officials concerning cleanup of state highways and right-of-ways consistent with §330.145.

8.9 Disposal of Large Items (§330.147)

Most non-recyclable large items can be placed and compacted during normal site disposal operations. Large items that cannot be recycled may require crushing with a landfill compactor or bulldozer to reduce the potential for voids within the waste cell. If the handling and crushing of large items interferes with normal operations, the items shall be temporarily stored near the working face until scheduling allows for their proper disposal. Such items will be removed often enough to prevent the items from becoming a nuisance and to avoid an excessive accumulation of the items. All such temporarily stored items shall also be stored in an area so as to minimize interference with the working face operations.

Refrigerators, freezers, air conditioning units, or other items that may contain chlorinated fluorocarbon (CFC) refrigerant will be handled in accordance with 40 CFR §82.156(f). Refrigerators, freezers, air conditioning units, or other items containing CFC will not be accepted unless the CFC contained in the item has been captured and sent to an approved CFC disposal or recycling facility and the generator or transporter provides written certification that the CFC has been evacuated from the unit. Items such as electrical equipment, which may contain PCBs, will not be knowingly accepted for disposal or recycling.

8.10 Odor Management Plan (§330.149)

The Beck Landfill will implement an odor management plan (OMP) to control odors resulting from site operations. This OMP addresses the identification of potential sources of odors and includes methods to minimize odors or sources of odors.

8.10.1 Sources of Odor

Sources of odor that emanate from a landfill can vary considerably and may include the wastes being delivered to the landfill, the open working face, ponded water, or contaminated water. Since putrescible waste is not accepted at site, the potential generation of odors is limited.

8.10.2 Odor Minimization

The primary objective of this Odor Management Plan is to minimize odor generation and odor emissions. Methods used to achieve this objective include waste handling procedures, the placement of cover materials, contaminated water handling procedures, and the elimination of ponded water.

8.10.3 Waste Handling Procedures

Wastes are to be deposited at the working face, spread into layers that can be readily compacted and covered. While weekly cover is required at the site, wastes with odors may be placed at the working face in a manner that allows for immediate cover.

8.10.4 Cover

Weekly cover will limit odor generation by preventing air and water from further impacting the wastes. If odors persist, soil covers may be placed more frequently than weekly. If odors persist after placement of 6 inches of soil cover, additional cover soils may be placed.

8.10.5 Contaminated Water Handling Procedures

Contaminated water may become a source of odors and will be segregated from clean storm water. See section 8.23 of this SOP for details regarding the management of contaminated water.

8.10.6 Ponded Water

Water ponded over waste disposal areas may become a source of odors and should be eliminated prior to the occurrence of odors. Ponded water areas will be filled in and re-graded within 7 days of the detection, weather permitting.

8.11 Disease Vector Control (§330.151)

Type IV landfills, with proper compaction and adequate intermediate and monthly cover, will typically require minimal vector control under normal circumstances. Landfill personnel will be constantly appraising site conditions as they perform their regular duties and should report unusual circumstances or areas requiring maintenance to the landfill operator. The regular basis in order to appraise all circumstances ranging from windblown litter and the condition of drainage features to quality of buffers and fences.

Pest populations primarily including rodents, and mosquitoes, shall be an additional vector item. Currently such species exist at the site but are held within reasonable balance by natural conditions.

Landfill personnel will monitor ongoing operations and be prepared to take additional action should it be required.

These actions may include:

- Temporarily applying cover more frequently than weekly;

- Temporarily applying a thicker layer of weekly cover;
- Use of non-lethal bird control measures such as pyrotechnics, baiting, decoys, etc. to discourage birds at the site and scare them away if they become a nuisance; and
- Contracting with professional exterminators, if necessary, to control rodents or other pests that may appear at the site.

8.12 Site Access Roads (§330.153)

The main public landfill entrance road from FM 78 will consist of approximately 1200 feet of concrete surfaced road, from the entrance to the gatehouse, continuing to the main landfill dike- line entrance point. The main internal access roads beyond the end of the concrete surfaced road will be surfaced with crushed rock and secondary internal access roads will be constructed of and maintained with sand and gravel. Disposal operations may be suspended during periods of heavy rain at the discretion of the LFM and/or LS depending on the safe and efficient accessibility of the active disposal area.

Equipment utilized within the site will also be utilized to maintain roadways allowing proper grading and drainage as well as to minimize rutting. The landfill operator shall also be responsible for inspecting Highway 78 on a daily basis and during periods of inclement weather and will promptly clear any mud which has been tracked onto FM 78.

Dust control will similarly be the responsibility of the landfill operator. During periods of dry weather, the LS shall direct personnel to utilize a water truck as necessary to wet site roads.

Landfill haul roads, and access roads will be maintained in a reasonably dust-free condition by periodic spraying from a water truck. Grading equipment will be used as needed to control or remove mud accumulations on internal roads including the entrance road. Stockpiles of crushed stone, concrete rubble, used asphalt, masonry demolition debris, or other similar material may be utilized in maintaining passable internal access roads including re-grading to minimize depressions, ruts, and potholes. The site entrance road, landfill haul road, and access roads will be maintained in a clean and safe condition. Litter and debris along site access roads will be picked up daily and returned to the active working face.

8.13 Salvaging and Scavenging (§330.155)

Salvaging may be performed by landfill personnel under the direction of landfill management, and shall not be allowed to interfere with prompt sanitary disposal of solid waste or to create public health nuisances. Salvaged materials will be considered as potentially recyclable materials and will be stored in a safe and secure manner. All salvaged material shall be removed from the site as necessary to prevent an excessive accumulation of the material at the site. Salvaged material will be removed often enough to preclude the discharge of any pollutants from the area in accordance with 30 TAC §330.155.

Scavenging will be prohibited at all times.

8.14 Endangered Species Protection (§330.157)

No known endangered or threatened species were present at the site during the permitting process. Workers will be instructed to report the sighting of possible endangered species to the Landfill

Supervisor, who shall contact the U.S. Fish and Wildlife Service to help identify any potentially endangered species.

8.15 Landfill Gas Control and Management (§330.159 and §330.371)

The LS is responsible for executing the Landfill Gas Management Plan in order to ensure that the concentration of methane gas generated by the facility does not exceed 1.25% by volume in facility structures (excluding gas control or recovery system components, if any), and the concentration of methane gas does not exceed 5% by volume in monitoring points, probes, subsurface soils, or other matrices at the facility boundary defined by the legal description in the permit.

8.15.1 Type and Frequency of Monitoring

Beck LF determined the type and frequency of monitoring based upon the factors described herein.

Soil Conditions: Within the LF perimeter flood control dike and along Lines D, E, F, G, and the northeastern side of A, the dominant soil type is mapped as Sunev loam, 0 to 1 percent slopes. This well drained soil may be up to 72 inches deep, comprised of up to 70% calcium carbonate, and is defined as Hydrologic Soil Group B. Along the northwestern side of Line A, the dominant soils type is the Barbarosa silty clay (0 to 1 percent slopes). This well drained soil may be up to 72 inches deep, comprised of clayey alluvium, and is defined as Hydrologic Soil Group C. Along Lines B and C, the dominant soil type is the Bosque and Seguin soils, frequently flooded. This well drained soil is typical of floodplains and may be up to 62 inches deep, comprised of up to 20% calcium carbonate, and defined as Hydrologic Soil Group B. These soils are not hydric.

Hydraulic and Hydrologic Conditions: The Landfill is constructed within an oxbow of the Cibolo Creek. The floor of the landfill is keyed into the Taylor-Navarro Shale, a clay formation that acts as a natural, impermeable liner. The landfill is enclosed by a slurry trench within a compacted clay embankment. The embankment and slurry trench were designed to isolate the landfill from communication with shallow, perched groundwater associated with the surrounding Cibolo Creek.

Location of Facility Structures and Property Boundaries: There are only three, permanent, enclosed structures within the facility boundary: the readymix plant office located approximately 885 feet from the toe of the embankment; the scalehouse located approximately 610 feet from the toe of the embankment, and an uninhabited house located approximately 1,030 feet from the perimeter embankment. All other structures at the facility are temporary. Monitoring of these enclosed structures is not proposed at this time. If the concentration of methane in the landfill gas monitoring probes approaches the LEL monitoring of these enclosed structures will be considered.

Utility Lines and Pipelines: There are two utility lines that approximately parallel the northwest side of the landfill (along Lines B and C). One is an old wastewater line, constructed of clay pipe, the other is a cast-iron water line. The clay pipe wastewater line is approximately 75 feet northwest of the toe of the flood-control dike along which the landfill gas monitoring probes will be installed. The water line is about 150 to 200 feet northwest of the toe of the flood control dike. The exact locations of these utility lines are unknown, even to the City of Schertz. Neither landfill gas monitoring probes nor vents along the utility lines are proposed at this time. These will be considered only if the concentration of methane in the landfill gas monitoring probes approaches the LEL.

8.16 Landfill Gas Management Plan

8.16.1 Introduction

This Landfill Gas Management Plan (“Plan”) was developed for the Beck Landfill, a Type IV landfill in Schertz, Texas, as required by 30 Tex. Admin. Code (TAC) §330.63(g). This Plan addresses the requirements set forth in 30 TAC §330.371. The Plan describes the system, including installation procedures, monitoring procedures, and procedures to assess the need for maintenance, repair, or replacement; and backup plans to be used if the monitoring system becomes ineffective or must be expanded. This Plan also outlines notification procedures and possible remediation activities, if required.

The requirements of this landfill gas management plan will be in effect through the remainder of the operating life of the landfill, landfill closure, and will continue for a period of 5 years after certification of final closure of the facility, unless altered by TCEQ. Any revisions to this plan will be submitted to TCEQ for review and approval.

8.16.2 Facility Boundary Monitoring Network

Six landfill gas monitoring probes are installed along the northwest exterior toe of the flood control dike surrounding the landfill opposite grid markers 5, 10, 15, 20, 25 and 30 (**Figure 1**). The nominal spacing between the landfill gas monitoring probes is 500 feet as measured along the top of the flood control dike. The probes are labeled as MM-1 through MM-6 in the order presented above. A single probe is specified at each location to accommodate the heterogeneity of the alluvial deposits through which landfill gas might migrate,

8.16.3 Gas Monitoring Probe Installation

The landfill gas monitoring probes were drilled and installed by Vortex Drilling, a driller registered in the state of Texas, under the supervision of Kevin K. Bryant (Terracon), a Texas-licensed professional geoscientist. The borings were advanced using hollow-stem augers with samples visually classified and logged in accordance with the Unified Soil Classification System (ASTM No. D-2487). As directed by the supervising geologist, boring were advanced in locations where subsurface materials encountered were not too impermeable to allow migration of landfill gas emissions.

The probes (**Figure 2**) are screened with factory fabricated 1/2-inch diameter 0.010 inch Schedule 80 PVC screen from the total depth of the probe, less an end cap, to no less than 4 or 5 feet below the ground surface (**Figure 3**). A solid Schedule 80 PVC riser extends upward from the screen to approximately 3 feet above the ground surface capped with a quick-connect device to allow purging and monitoring with the gas monitoring meter. All joints are either be threaded or use compression fittings; no glue or solvent-based welding is permitted.

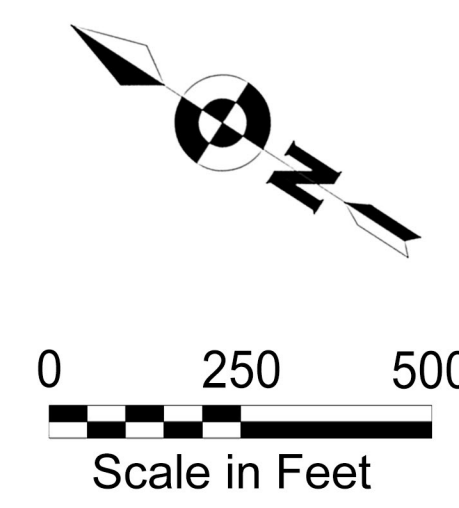
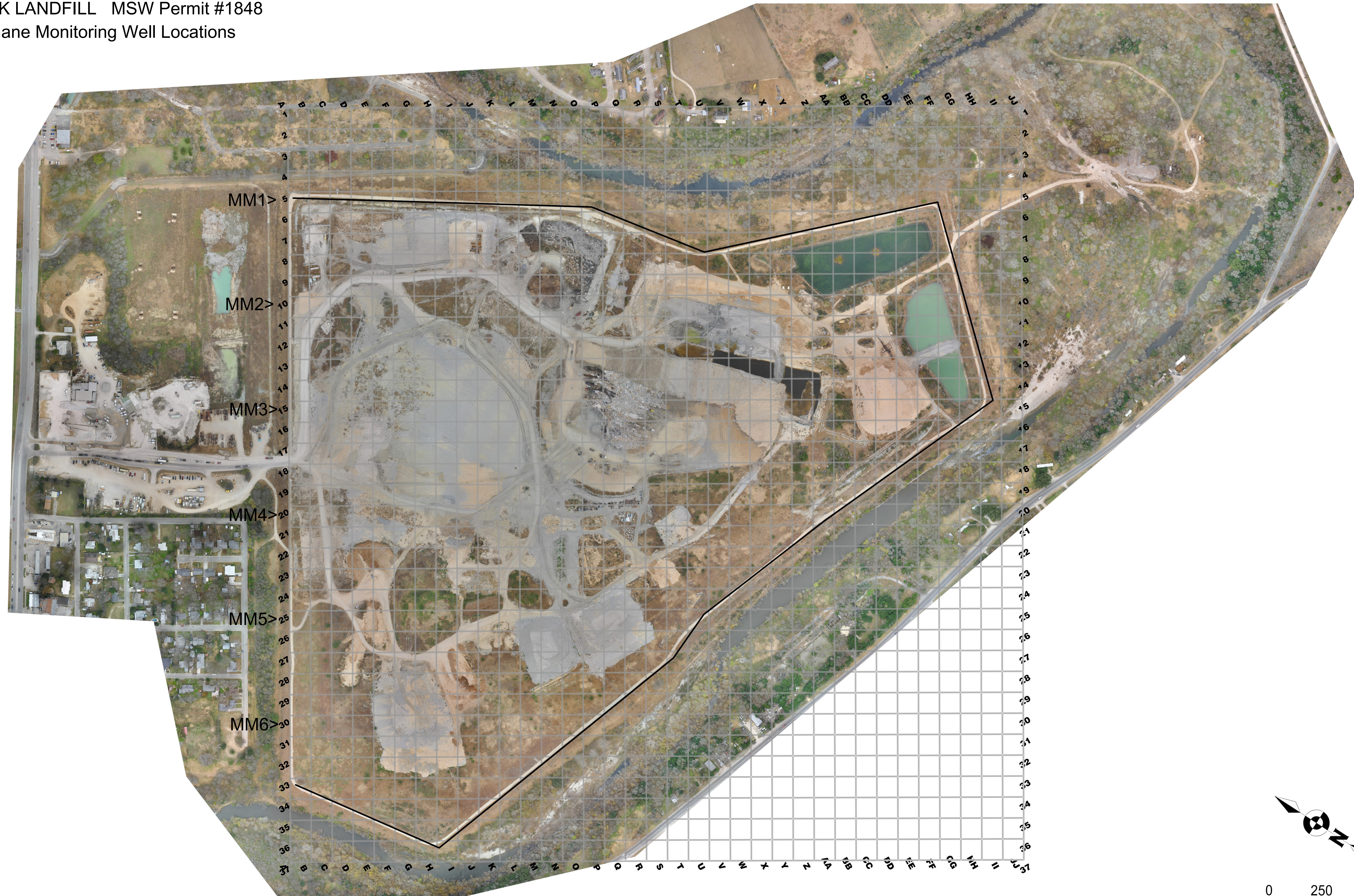
A 20-40 mix of silica sand or concrete sand (ASTM C-33), as available, was tremied around the probe screen to a minimum of 6 inches above the top of the screen, followed by hydrated bentonite pellets to 6 inches below the ground surface. A lockable steel well-head protector is installed over the riser and a 4-foot by 4-foot by 6-inch thick reinforced concrete pad is poured around the steel well-head protector to stabilize and protect the well head. Pea gravel, or the equivalent, is placed around the riser within the steel well-head protector to stabilize the monitoring probe, and one or more weep holes are drilled into the bottom of the steel well-head protector to allow drainage of excess moisture. Concrete filled steel

bollards are installed around the surface pad as deemed necessary to provide additional protection to the well-head.

Boring/completion logs for the landfill gas monitoring robes were prepared and submitted to TCEQ and to the Texas Department of Licensing and Regulation (DLR), and retained in the site operating record. A copy of this record is provided in **Appendix B**.

Installation of landfill gas monitoring probes around the remainder of the landfill is unnecessary. Should any landfill gas penetrate the slurry wall and flood control dike, it would either be discharged to the atmosphere or enter the vadose zone, which terminates at Cibolo Creek. The creek, then, is a barrier to landfill gas migration. Other than on the northwest side of the landfill, there are no structures in which landfill gas could accumulate between the landfill and the creek.

**FIGURE 2 LOCATIONS OF LANDFILL GAS MONITORING PROBES SHOWN ON AERIAL
PHOTO**



Vertical Datum: Local
Horizontal Datum: NAD83

This drawing is for illustration only and not for permitting, bidding or construction



Prepared For:
Beck Companies
550 FM 78
Schertz, TX 78154

Landfill Aerial and Grid
Beck Companies - Schertz Landfill
Flight Date: December 5, 2018

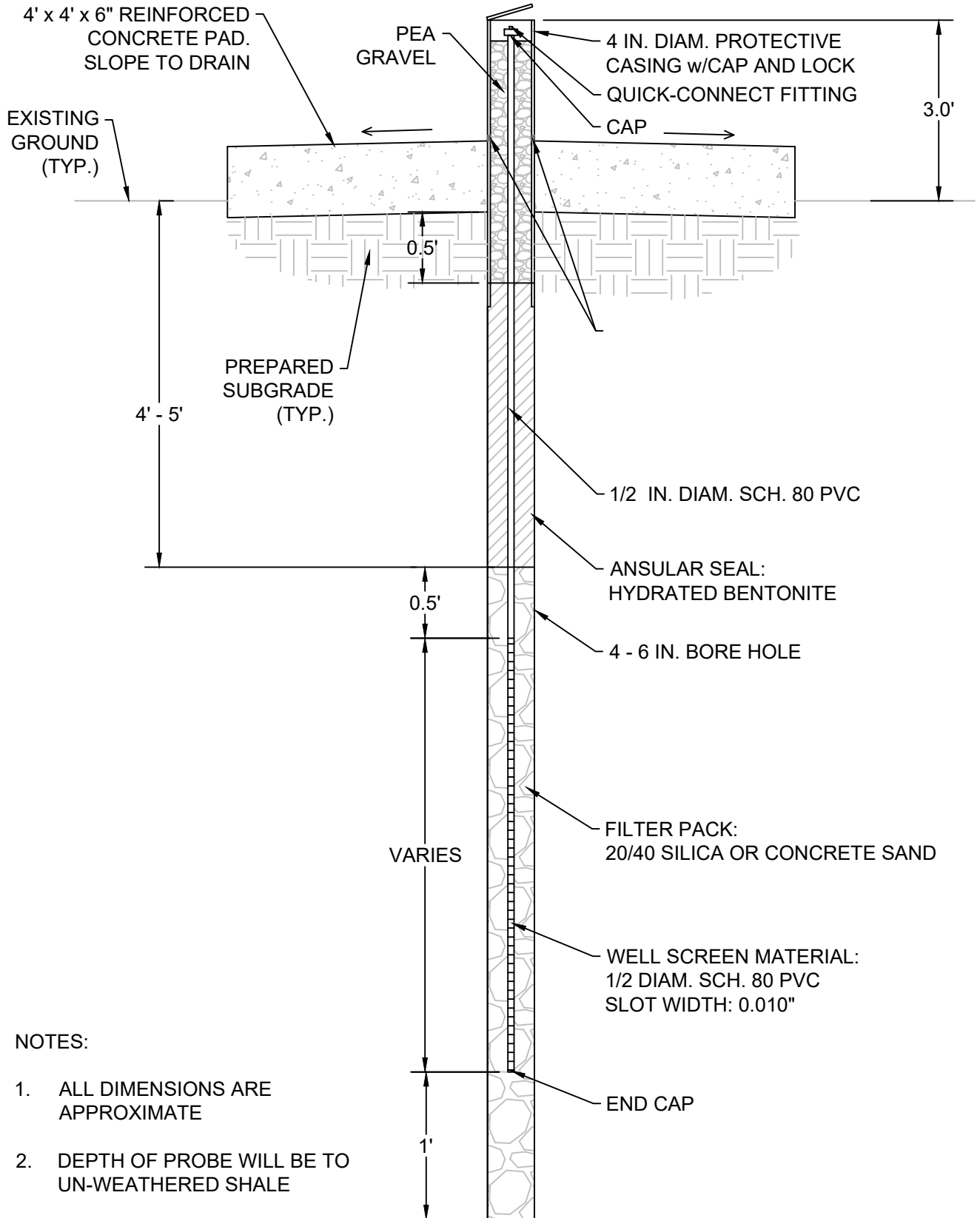


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FIGURE 3 SCHEMATIC DRAWING OF LANDFILL GAS MONITORING PROBE

THIS DRAWING WAS PREPARED BY POWER ENGINEERS, INC. FOR A SPECIFIC PROJECT, TAKING INTO CONSIDERATION THE SPECIFIC AND UNIQUE REQUIREMENTS OF THE PROJECT. REUSE OF THIS DRAWING OR ANY INFORMATION CONTAINED IN THIS DRAWING FOR ANY PURPOSE IS PROHIBITED UNLESS WRITTEN PERMISSION FROM BOTH POWER AND POWER'S CLIENT IS GRANTED.

REVI	ISSUE_FOR_CONSTRUCTION	08/20/19	SMT	JCM	JCM	
REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD



NOTES:

1. ALL DIMENSIONS ARE APPROXIMATE
2. DEPTH OF PROBE WILL BE TO UN-WEATHERED SHALE

POSTOAK_GASPROBE.DWG

		DSGN	JCM	08/19/19		BECK LANDFILL	JOB NUMBER	REV
		DRN	SMT	08/19/19		SCHERTZ, GUADALUPE COUNTY, TX	150051	1
		CKD	JCM	08/19/19				
N/A	N/A	SCALE:	NONE			PROPOSED LANDFILL GAS WELL DESIGN	DRAWING NUMBER	
REFERENCE DRAWINGS		FOR 8.5x11 DWG ONLY						

8.16.4 Landfill Gas Monitoring Procedures

The concentration of methane in the landfill gas monitoring probes will be measured on a quarterly basis per calendar year, with two of those monitoring times, to the extent possible, corresponding with sampling of the ground water monitoring wells at the landfill. The integrity and labelling of the monitoring probes, including the integrity of the steel, well-head protectors, locks, and concrete pads, will be inspected during or before each monitoring event and repairs or replacement made as needed. Repair or replacement of any landfill gas monitoring probes will be documented and retained in the site operating record.

Beck Landfill uses a QRAE 3 wireless four-gas monitoring instrument, -- carbon monoxide, hydrogen sulfide, and oxygen in addition to methane and the LEL. This instrument is suitable for surface monitoring and for sampling the landfill gas monitoring probes. Operation of the device should be in accordance with the instrument manual. If at any time the instrument fails, it will be repaired or replaced, TCEQ will be informed in writing, and the repair or replacement noted in the site operating record. Results of all methane monitoring events, including purge volumes, will be retained in the site operating record.

8.16.5 Landfill Gas Monitoring Exceedance Record Keeping and Reporting

Results of landfill gas monitoring will be kept in the site operating record; however, If during any monitoring event, the volumetric methane concentration in any landfill gas monitoring probe exceeds the LEL, the probe will be resampled within 24-hours, and again within 7 days to confirm the exceedance. Reporting will be in accordance with 30 TAC §330.371(c). Notifications will be as follows:

MSW Permits Section, MC-124
Texas Commission on Environmental Quality
PO Box 13087
Austin, TX 78711-3087
512-239-6784 (O); 512-239-6000 (Fax)

TCEQ Region 13 – San Antonio Waste Section
14250 Judson Road
San Antonio, TX 78233-4480
210-490-3096 (O); 210-545-4329 (Fax)

Guadalupe County EMS at 911

Schertz EMS
1400 Schertz Parkway, Building 7
Schertz, TX
830-619-1400

A plan to address the exceedance will be formulated and implemented, with TCEQ approval, if possible within 60 days. The precise nature of the plan will depend on which probes show exceedances; those opposite near-by residences or those opposite of commercial businesses. . The potential remedial actions may include precisely locating the utility trenches to install monitoring probes and/or vents, sampling the

nearest residences, and installation of additional gas monitoring probes or vents. An alternative schedule may be implemented in accordance with 30 TAC §330.371(d).

8.17 Oil, Gas, and Water Wells (§330.161)

8.17.1 Water Wells (§330.161(a))

There are no known water wells located within the landfill permit boundary. In the event that a water well is discovered within the landfill permit boundary, Beck Landfill shall provide written notification to the executive director of the location of any and all existing or abandoned water wells situated within the facility upon discovery during the course of facility development. The facility operator shall, within 30 days of such a discovery, provide the executive director with such notification and written certification that such wells have been capped, plugged, and closed in accordance with all applicable rules and regulations of the commission or other state agency. Any water or other type of wells under the jurisdiction of the commission must be plugged in accordance with all applicable state requirements or additional requirements imposed by the executive director. A copy of the well plugging report required to be submitted to the appropriate state agency must also be submitted to the executive director within 30 days after the well has been plugged.

8.17.2 Oil and Gas Wells (§330.161(b))

There are no known crude oil or natural gas wells or other wells associated with mineral recovery within the landfill permit boundary. If crude oil or natural gas wells, or other wells associated with mineral recovery are located, the landfill will provide written notification to the TCEQ executive director of their location within 30 days of their discovery. For crude oil or natural gas wells, or other wells associated with mineral recovery, the Landfill Supervisor will provide the executive director of the TCEQ with written certification that all such wells have been properly capped, plugged, and closed in accordance with all applicable rules and regulations of the Railroad Commission of Texas. A copy of the well plugging report to be submitted to the appropriate state agency will also be submitted to the executive director of the TCEQ within 30 days after the well has been plugged. A permit modification will be submitted to the executive director if revisions to the liner installation plan are required as the result of well abandonment.

8.18 Compaction (§330.163)

Compaction of waste material will be accomplished by a landfill compactor, dozer or similar equipment. The site dozer will be used to compact waste should the primary landfill compactor be temporarily out of service. Adequate compaction will be accomplished to minimize future consolidation and settlement and provide for the proper application of intermediate and final cover. Incoming waste will be spread in layers and thoroughly compacted.

8.19 Landfill Cover (§330.165)

8.19.1 Soil Management

Management of soil for use in and around the landfill area will be an ongoing process. In general, soil for use as weekly cover, intermediate cover, final cover, and other uses will be available onsite. This onsite soil will be obtained from excavation that is ongoing as part of the excavation and development of landfill cells.

In addition to this available material located on the landfill property, a stockpile of material will be kept available on site. The stockpile will consist of soil that has not previously come in contact with waste, and will be of sufficient volume to provide at least one day's application of 6 inches of weekly cover over the working face. As this stockpile is used, it will be replenished as soon as practical. The soil may also be used in emergency situations for fire control.

8.19.2 Weekly Cover (§330.165(b))

Weekly cover of waste is necessary to control disease vectors, windblown waste, odors, fires, scavenging, and to promote runoff from the fill area. At least 6 inches of well- compacted soil cover material that has not been previously mixed with garbage, rubbish, or other solid waste will be placed over all solid waste received during that same day.

To ensure that the weekly cover soil will be adequate (i.e., minimize vectors, contaminated storm-water runoff, odors, etc.) the following procedures will be followed:

- Cover will be sloped to drain.
- Cover will be compacted with a minimum of two passes with the dozer tracks to minimize infiltration of storm water.

The LS will document weekly cover location and visually inspect during placement that a minimum of 6 inches of cover soil has been placed and that no waste is exposed. The LS shall document, as cover is necessary, on at least a weekly basis, the daily cover placement area and indicate that he has visually verified the thickness and condition in the Cover Inspection Record. After each rainfall event, the Landfill Supervisor will inspect cover areas for erosion, exposed waste or other damage, and repair as necessary.

8.19.3 Intermediate Cover (§330.165(c))

Areas that receive waste and subsequently become inactive for longer than 180 days will receive intermediate cover. Intermediate cover must include an additional 6 inches of suitable earthen material, for a total cover thickness of at least 12 inches, capable of sustaining native plant growth. This additional earthen material will be seeded or sodded following application in accordance with 30 TAC §330.165(c). The intermediate cover will be graded to prevent erosion and ponding of water. Storm water runoff from areas that have received intermediate cover are considered to have not come into contact with waste material and are to be managed as necessary as uncontaminated storm water runoff.

8.19.4 Final Cover (§330.165(f))

Final cover placement will occur as areas of the site are filled to the maximum waste fill grades. Final cover placement over individual areas will be in accordance with Beck Landfill's existing Final Closure Plan. Surface water will be managed throughout the active life of the site to minimize infiltration into the filled areas and to minimize contact with solid waste. Erosion of final or intermediate cover will be repaired promptly by restoring the cover material, grading, compacting, and seeding it as necessary. Such periodic inspections and restorations are required during the entire operational life and for the post closure maintenance period.

In general, final cover placement over completed portions of the site will consist of the following steps:

- Survey controls will be implemented to control the filling of solid waste to the bottom level of the intermediate cover layer elevation.
- The final cover system layers will be constructed. Testing of the various components of the final cover system will be performed in accordance with the site's existing Final Closure Plan.
- A final cover certification report complete with an as-built survey will be prepared by an independent registered professional engineer and submitted to the TCEQ for approval.
- The TCEQ-approved final cover certification report will be maintained in the SOR. The cover inspection record will be updated to reflect areas where final cover has been placed.

8.19.5 Erosion of Cover (§330.165(g))

The LS will inspect intermediate cover at the site on a weekly basis. The final cover system, including erosion control structures will be maintained during and after construction. During the active life of the site, the LS will inspect the final cover system on a weekly basis. During post-closure care, the final cover system will be visually inspected on a monthly basis. In accordance with 30 TAC §330.165(g), eroded or washed-out areas of intermediate or final cover which are deep enough to jeopardize the intermediate or final cover, defined as exceeding four inches in depth as measured from the vertical plane from the erosion feature and the 90 degree intersection of this plane with the horizontal slope face or surface, will be repaired within 5 days of detection. Repair of final cover includes restoring cover, grading, compacting, and seeding as required by 30 TAC §330.165(g) In addition, all cover areas will be visually inspected following significant rainfall events. Documentation of weather delays for the repairs will be included in the cover inspection record. Weekly inspections and restorations are required for the active life of the landfill.

8.19.6 Cover Inspection Record (§330.165(h))

A cover inspection record will be maintained and be readily available for inspection in accordance with §330.165(h). For weekly and intermediate cover, the record will specify the date cover was accomplished (no exposed waste), area covered (by use of the grid system), how it was placed, and when it was completed. When applicable, dates of erosion detection and dates of completion of repair will be identified in the cover inspection record. For final cover, the record will show the final cover area completed, date cover was applied and thickness of final cover. The final cover certification report for each area will be referenced in the record. Each entry in the record will be certified by the signature of the Landfill Supervisor that the work was accomplished as stated in the record.

8.20 Ponded Water (§330.167)

Beck Landfill will prevent ponding of water over areas that have received waste through site operation practices such as grading and maintenance. The Ponded Water Plan (PWP) provides direction to the landfill operations for the prevention and elimination of ponded water.

The Ponded Water Plan is as follows:

- The landfill will place daily cover, intermediate cover, and final cover in accordance with requirements established in Section 8.18 – Landfill Cover.
- The landfill will inspect the surface of areas that have received waste and landfill cover consistent with Section 8.18 – Landfill Cover and Section 8.24 –Site Inspection and Maintenance Schedule.
- Site grading and maintenance as required by Section 8.18 will minimize the ponding of water over areas containing waste.
- Should ponding of water occur, the ponded water will be removed and the depressions filled within 7 days, weather permitting. Landfill cover will be repaired consistent with procedures specified in Section 8.18.
- If the ponded water has come into contact with waste, or waste-contaminated soils, it will be treated as leachate and handled accordingly

8.21 Disposal of Special Wastes (§330.171)

Beck Landfill may accept Special Wastes, as defined in §330.3, assuming their physical nature meets the definition of wastes acceptable for disposal at a Type IV landfill as defined in §330.5(a)(2). Special Wastes may require TCEQ authorization for disposal on a case by case basis. Requests for approval to accept special waste shall include those items specified in §330.171(b)(2)(A), (C) and (D). Requests must be submitted and certified by the generator to the TCEQ executive director or to Beck Landfill for submittal to the TCEQ executive director.

The request must include the following:

A complete description of the chemical and physical characteristics of each waste and the quantity and rate at which each waste is produced and/or the expected frequency of disposal, including a statement that the waste is not a Class I industrial waste as defined in §330.3.

The approval for acceptance and disposal of Type IV landfill compatible special wastes at Beck Landfill will be waste-specific consistent with §330.171(b)(1). The executive director may authorize the receipt of special waste with a written concurrence from Beck Landfill. The landfill is not required to accept the waste.

In addition to authorized special wastes, Beck Landfill may accept non-regulated asbestos- containing materials (NRACM) as follows:

Non-regulated asbestos-containing materials may be accepted for disposal provided the wastes are placed on the active working face and covered in accordance with §330.171(c)(4) and Section 8.18 of this 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.

8.22 Disposal of Industrial Wastes (§330.173)

Industrial waste (nonhazardous) is defined by §330.3 as solid waste resulting from or incidental to any process of industry or manufacturing, or mining or agricultural operations. Class I wastes will not be accepted at the Beck Landfill. Class II and Class III industrial solid wastes may be accepted at the Beck Landfill, consistent with the limitations of §330.5(a)(2) and provided that disposal of these wastes does not interfere with proper operation of the Beck Landfill.

8.23 Visual Screening of Deposited Wastes (§330.175)

The nature of land use immediately adjacent to the site, and the flood control dike will screen disposal areas from any reasonable site line. The south and west sides of the site border on Cibolo Creek and undeveloped land. The east side and the north side of the site are bordered by the Beck Readymix concrete plant. The site partially borders Zuehl Street on the northeast border of the site. Sufficient separating distance and natural vegetation will be adequately maintained to screen ongoing disposal operations from residences along Zuehl Street. Additional visual screening will be provided if the executive director determines a need for such.

8.24 Contaminated Water Discharge

Run-off, which has come into contact with the working face, will be collected in a bermed area near the base of the working face and used for improved compaction of waste and/or for dust control within the permit boundary of the landfill.

If the volume of contaminated water is greater than can be used for improved waste compaction and or dust control as described above, a retention pond located outside the active disposal area, but within the permitted landfill has been designated to receive water for storage. The retention pond will be sized to handle water volume received during the three wettest consecutive months of the year. Any berms around the active working face and/or around the retention pond will be a minimum height of 3 feet with a crest width of 2 feet.

Beck Landfill will take all steps necessary to control and prevent the discharge of contaminated water from the site. Should the discharge of contaminated water become necessary, the LFM will obtain specific written authorization from the TCEQ prior to discharge. All water coming in direct contact with waste will be treated as leachate. The landfill will be operated consistent with §330.15(h)(1)-(4) regarding discharge of solid wastes or pollutants into waters of the United States.

8.25 Site Inspection and Maintenance Schedule

Beck Landfill will periodically perform inspections of the site, including landfill operations. Inspections will be performed as indicated in **Table 7**. The LS or designee is responsible for performing the inspections. Records of site inspections will be maintained as part of the SOP.

TABLE 7 LANDFILL INSPECTION AND MAINTENANCE SCHEDULE (FORMERLY TABLE 8.2)

Item	Inspection Area or Activity	Frequency	Maintenance Activity
Vectors	Active waste disposal areas	Daily on days when the site is receiving waste	Implement Vector Control described in Section 8.11 of SOP
Fence/Gate	Perimeter fence and gate structures	Monthly	Repair and provide notification if required
Access Road	Access Road Condition	Monthly	Repair as required
Mud Tracking	Mud tracking onto FM 78	Daily on days when mud is tracked	Remove mud as required
Dust	Internal active site access road	Daily on days when the site is receiving waste	Apply water or dust suppressants
Windblown waste	Litter or debris from landfill operations, waste vehicles	Daily on days when the site is receiving waste	Pick up litter or debris
Waste Spilled on Route to the Site	Litter or debris from waste vehicles along access road	Daily on days when the site is receiving waste	Pick up litter or debris
Landfill Markers	Marker damage, color-coding, and general location	Monthly	Repair/replace/perform maintenance within 15-days of detection
Weekly Cover	Weekly cover placement, thickness, exposed waste and erosion	Weekly	Add additional soil as required
Intermediate Cover	Intermediate cover placement, thickness and erosion	Weekly and within 2 operating days following the end of a rainfall event greater than 1 inch	Add additional soil or regrade as required
Seepage from Weekly, Intermediate and Final Cover	Observe presence of contaminated water/leachate	Weekly and within 2 operating days following the end of a rainfall event greater than 1 inch	Isolate, remove and manage liquids and affected soils and replace with clean soil
Ponded Water	Ponded water accumulation in waste disposal areas	Weekly	Add additional soil or regrade within 7 days of detection if allowed by weather/site conditions
Perimeter Channels and Detention Ponds	Perimeter channels and detention pond excess sediment accumulation, outlet structure conditions, and erosion control requirements	Weekly	Maintain and repair as required
Random Load Inspections	Detection of unauthorized waste	Daily on days when the site is receiving waste	Document as identified in SOP. Provide notification and removal of regulated hazardous and prohibited PCB waste as required.
Flood Control Dike Structure	Ensure dike integrity, including erosion, vegetative cover, ponded water and dike road conditions	Weekly	Maintain and repair as required.

9.0 SEQUENCE OF DEVELOPMENT (30 TAC §330.127(2))

Beck Landfill is divided into 41 individual cell areas as shown in **Figure 4**, of this SOP. Per Section 1.4 of this SOP, Beck Landfill, as an attachment to the “30-DAY NOTICE OF CELL COMPLETION” letter sent to the TCEQ MSW Permits Section, includes a continually updated site layout map identifying the cell area(s) being excavated and utilized per site operating requirements. This procedure serves as the mechanism for informing the TCEQ of the landfill’s sequence of development.

FIGURE 4 SEQUENCE OF DEVELOPMENT

10.0 RECYCLING ACTIVITIES

Beck Landfill includes this Addendum to the Site Operating Plan (SOP) to address management practices to be followed when diverting specific recyclable materials from the solid waste stream received at the facility. These management practices are written in conformance with the Waste Minimization and Recycling rules (30 TAC 328), Composting rules (30 TAC 332), and the Operational Standards for Permitted Solid Waste Landfill Facilities (30 TAC 330).

In accordance with 30 TAC 330.155, scavenging is not allowed and the salvaging of material from the solid waste stream will not be allowed to interfere with the prompt sanitary disposal of solid waste or to create a public health nuisance. Salvaged items will be removed from active areas often enough to prevent the items from becoming a nuisance, to preclude the discharge of any pollutants from the area, and to prevent an excessive accumulation of the material at the facility.

10.1 Purpose

Beck Landfill will divert certain recyclable materials from the solid waste stream to promote the economic recovery and reuse of materials, and to support the development of markets for recycled, remanufactured, or environmentally sensitive products or services in a sustainable manner that protects the environment, public health, and safety. This Addendum provides management practices for the temporary storage and processing of recyclable materials.

10.2 Scrap Tires

Per 30 TAC 328.53 (relating to Management of Used or Scrap Tires), Beck Landfill (MSW Permit No. 1848A) may store or process whole tires or tire pieces in an unused portion of the property within its permit boundary dedicated to tires only. Scrap tires may not be disposed of within the Beck Landfill unless the tire has been quartered, shredded or split (the sidewalls removed from the tires).

Authorization for this storage and/or processing activities is conferred through the approval of the Site Development Plan, including this Addendum of the Site Operating Plan. The tire storage and/or processing activity shall not be conducted in a manner that will adversely affect operations of the municipal solid waste disposal site, or otherwise endanger human health or the environment.

Beck Landfill may store up to 500 tires for processing, reuse or sale at any given time.. Processing may include splitting, quartering or shredding of the tires.

The following management practices will be followed:

10.2.1 Tire Storage Criteria

1. Scrap tire storage areas are designed so that the health, welfare, and safety of operators, transporters, and others who may utilize the site are maintained.
2. No more than three (3) piles of whole or scrap tires will be stored on the ground (stockpiles).
3. A fire lane (40-foot buffer) must encircle the tire piles and be usable as an all-weather road.
4. The roadway must provide a minimum 25-foot turning radii.

5. The Site Layout Plan shall include this area with appropriate design notes.
6. Indoor storage piles or bins shall not exceed 12,000 cubic feet with a 10-foot aisle space between piles or bins.
7. Outdoor piles and entire buildings used to store scrap tires or tire pieces shall not be within 40 feet of the property line or easements. This setback will be maintained free of rubbish, equipment, tires, or other materials.
8. Outdoor storage of used or scrap tires or tire pieces at the processing location will be monitored for vector control, and appropriate vector control measures shall be applied when needed, but in no event less than once every two weeks.
9. Scrap tires or tire pieces may be stored in trailers provided the trailer is totally enclosed and lockable.

10.2.2 Fire Prevention and Suppression

Dry chemical fire extinguishers are located on the LS and the LFM trucks, as well as on mobile equipment working on or near the tire storage area.

Firewater may also be accessed from on-site ponds through the use of pumps and water trucks.

10.2.3 Access Controls

The scrap tire storage area(s) is within the fully-fence perimeter of Beck Landfill. The gate is locked when the facility is closed.

10.2.4 Water Quality Protection

Drainage away from the scrap tire storage location will flow into Beck Landfill and be retained in ponds, allowed to infiltrate, or will evaporate. No discharge of water is anticipated from the storage site.

10.3 Asphalt Shingles

Asphalt shingles may be received at Beck Landfill for the purpose of disposal or processing for reuse. Only residential roof tear-off asphalt shingles or sized asphalt shingles may be received for processing and end-use in the production of hot mix asphalt. The feed stocks will be managed for processing. Non-conforming shingles and associated debris will be disposed in Beck Landfill.

At least 50% of shingles accumulated within a six-month period will be recycled or transferred to a different site for recycling. Recycled materials, including processed shingles, are not subject to this time limitation, but should be covered or otherwise protected to prevent degradation, contamination, or loss of value as recyclable material.

The following management practices will be followed:

10.3.1 Recordkeeping and Reporting

1. Shingles must not contain asbestos or asbestos containing materials (ACM). Analysis or other documentation demonstrating that no asbestos or ACM may be found in shingles proposed for recycling or disposal at Beck Landfill must be maintained.
2. Proof of financial assurance sufficient to cover closure costs.
3. Records indicating the volume of shingles processed for reuse versus volume of shingles land disposed at Beck Landfill. (Note: Follow Air Permit)

10.3.2 Shingle Storage Criteria

1. Shingle storage areas are designed so that the health, welfare, and safety of operators, transporters, and others who may utilize the site are maintained.
2. Incoming loads will be inspected by a person trained to identify asbestos containing shingles. Any material suspected of containing asbestos will be rejected.
3. All visible materials which are not part of the shingle will be removed before grinding, including excess wood, paper, metal, and plastics.
4. A fire lane (40-foot buffer) must encircle the shingle piles and be usable as an all- weather road.
5. The roadway must provide a minimum 25-foot turning radius.
6. Shingle storage piles shall not be within 50 feet of the property line or easements. This setback will be maintained free of rubbish, equipment, tires, or other materials.
7. Shingle piles will be maintained with a pile height no greater than 25 feet.

10.3.3 Fire Prevention and Suppression

Dry chemical fire extinguishers are located on the LS and the LFM trucks, as well as on mobile equipment working on or near the tire storage area.

Firewater may also be accessed from on-site ponds through the use of pumps and water trucks.

10.3.4 Access Controls

Shingle storage areas will be wholly located within the fully-fenced perimeter of Beck Landfill. The gate is locked when the facility is closed.

10.3.5 Water Quality Protection

Drainage away from shingle storage area(s) will flow within the Beck Landfill permitted area and be directed to and retained in detention ponds, allowed to infiltrate, or will evaporate. No off-site discharge of water is anticipated from the shingle storage area(s)..

10.4 Wood Materials

Wood, brush and other vegetative debris may be received at Beck Landfill for the purpose of disposal or processing for reuse. Beck Landfill will compost or mulch materials considered to be exempt in 30 TAC §332.3.

The following management practices will be followed:

10.4.1 Recordkeeping and Reporting

1. Only untreated lumber and woody debris will be utilized for the manufacture of mulch or compost material. Treated lumber may be disposed in Beck Landfill.
2. Proof of financial assurance sufficient to cover closure costs.

10.4.2 Woody Debris Storage Criteria

1. Composting, mulching, and land application of material shall be conducted in a sanitary manner that shall prevent the creation of nuisance conditions as defined in §330.2 of this title (relating to Definitions) and as prohibited by the Texas Health and Safety Code, Chapters 341 and 382 (relating to Minimum Standards of Sanitation and Health Protection Measures; and Clean Air Act), the Texas Water Code, Chapter 26 (relating to Water Quality Control), §101.4 of this title (relating to Nuisance), and any other applicable regulations or statutes.
2. Operations shall be conducted in such a manner to ensure that no unauthorized or prohibited materials are processed at the facility. All unauthorized or prohibited materials received by the facility shall be disposed of at an authorized facility in a timely manner.
3. The setback distance from all property boundaries to the edge of the area receiving, processing, or storing feedstock or finished product must be at least 50 feet.
4. All permanent in-plant roads and vehicle work areas shall be watered, treated with dust-suppressant chemicals, or paved and cleaned as necessary to achieve maximum control of dust emissions.
5. Vehicular speeds on non-paved roads shall not exceed ten miles per hour.
6. A fire lane (40-foot buffer) must encircle the woody debris piles and be usable as an all-weather road.
7. The roadway must provide a minimum 25-foot turning radii.

10.4.3 Fire Prevention and Suppression

Dry chemical fire extinguishers are located on the LS and the LFM trucks, as well as on mobile equipment working on or near the tire storage area.

Firewater may also be accessed from on-site ponds through the use of pumps and water trucks.

10.4.4 Access Controls

Compost, mulch, and woody debris storage areas will be wholly located within the fenced perimeter of Beck Landfill. The main facility gate is locked when the facility is closed.

10.4.5 Water Quality Protection

Drainage away from the woody debris/compost/mulch storage areas will flow within the Beck Landfill permitted area and be directed to and retained in detention ponds, allowed to infiltrate, or will evaporate. No off-site discharge of water is anticipated from the wood storage or operation area(s).

APPENDIX A FORMS

APPENDIX B METHANE MONITORING POINT INSTALLATION REPORT

Methane Monitoring Point Installation Report

BECK LANDFILL

Schertz, Guadalupe County, Texas

TERRACON PROJECT 90207061

July 17, 2020



Prepared for:

Beck Companies

550 FM 78

Schertz, Texas 78154

Prepared by:

Terracon Consultants, Inc.

San Antonio, Texas

6911 Blanco Road (210)641-2112
San Antonio, TX 78216 terracon.com

Terracon

Environmental



Facilities



Geotechnical



Materials

July 17, 2020

Mr. Grant Norman
Beck Companies
550 FM 78
Schertz, Texas 78154

Telephone: 210-658-5174
Cell: 210-410-8872
Email: gnorman@beckcompanies.com

**Subject: Methane Monitoring Point Installation
Beck Landfill
550 FM 78
Schertz, Guadalupe County, Texas
Terracon Project No. 90207061**

Dear Mr. Norman:

Terracon Consultants, Inc. is pleased to submit this Methane Monitoring Point Installation Report for the Beck Landfill. If you have any questions or require additional information, please do not hesitate to contact myself or Mr. Quin Baber at your convenience.

Sincerely,

Terracon



Kevin Bryant, P.G.
Project Geologist

Quin Baber, P.G.
Environmental Department Manager, Principal

Enclosure: Methane Monitoring Point Installation Report



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EXHIBIT 2	METHANE MONITORING POINT LOCATION MAP

PHOTO LOG

BORING LOGS

**METHANE MONITORING POINT INSTALLATION REPORT
BECK LANDFILL
SCHERTZ, GUADALUPE COUNTY, TEXAS
TERRACON PROJECT 90207061**

1.0 INTRODUCTION

Terracon Consultants, Inc. was contracted by Beck Companies (client) for the installation of 6 methane monitoring probes at locations directed by the client. Methane monitoring points were installed as per the scope of work provided by the client in Terracon's proposal P90207061-R1 (dated April 16, 2020). Terracon mobilized to the site on June 8, 2020 to oversee the installation of the 6 methane monitoring points. The following is a summary of the observations and activities conducted by Terracon staff for the project.

1.1 SITE LOCATION

Exhibit 1, a Vicinity Map, depicts the site in relation to surrounding properties along with the topographic elevation in the vicinity of the site. The site is located at 550 FM 78 in Schertz, Guadalupe County, Texas. Methane monitoring points were installed at locations designated by the client approximately 500 feet apart along the northern side of the existing dike, located at the northern perimeter of the landfill.

2.0 METHANE MONITORING POINT INSTALLATION

2.1 METHANE MONITORING PROBE INSTALLATION

Soil borings for methane monitoring points were advanced using a conventional drilling rig equipped with hollow-stem augers. Soil borings were advanced to depths ranging from 20 feet to 32.5 feet below ground surface (bgs). Methane monitoring points were installed in accordance with the specifications outlined in our proposal. Methane monitoring points were completed at the surface using approximately 3 feet of solid PVC riser fitted with a ball valve and barbed connector. All connections/joints were either threaded or compression fittings (no glue or other bonding agents were used).

During drilling activities, methane gas was detected using a Multi-Rae Lite instrument in soil boring MM-3 at concentrations as high as 4.5% in down-hole air readings in the 7.5-10-foot bgs interval. Therefore, the soil boring was flooded with water for safety reasons prior to continuing drilling activities. After completing the soil boring at MM-3, Mr. Grant Norman (client) asked that Terracon install an additional soil boring (MM-3b)

Methane Monitoring Point Installation

Beck Lanfill ■ 550 FM 78, Schertz, Guadalupe County, Texas

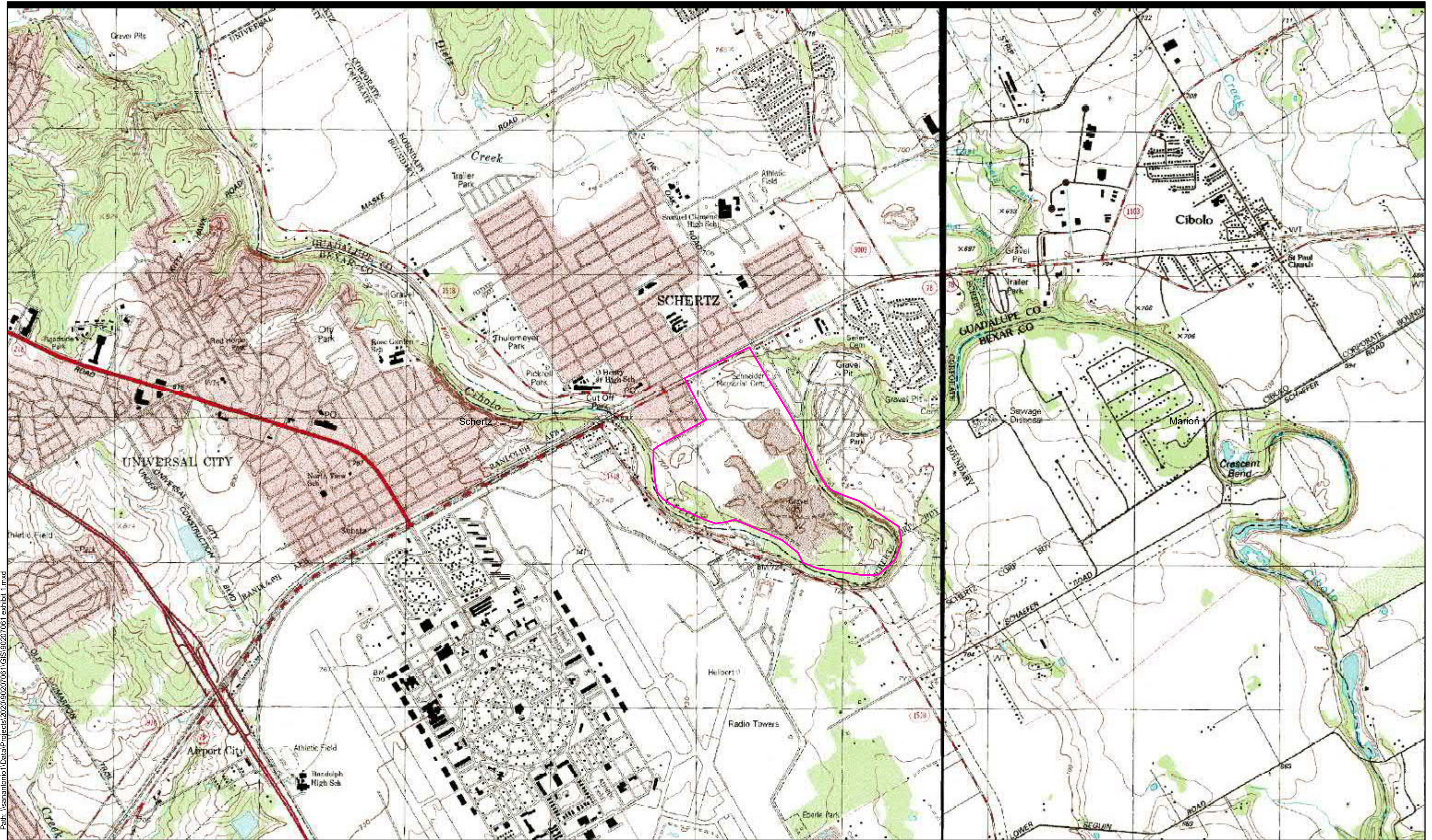
July 17, 2020 ■ Terracon Project No. 90207061



at a location chosen by him approximately 29 feet northwest of soil boring MM-3. The methane monitoring point set into the soil boring MM-3 was plugged and abandoned per Mr. Norman's instructions. Mr. Norman also asked that the methane monitoring point set at MM-3b be identified as MM-3 to simplify future sampling and reporting. Elevated methane concentrations exceeding the health and safety thresholds for the project were also encountered while drilling the soil borings MM-3b and MM-4. In soil boring MM-3b, the greatest concentration of methane (3.2% to 4.8%) was detected from 20 feet to 25 feet bgs interval. In soil boring MM-4, the greatest concentration of methane (approximately 6.9%) was detected from 12.5 feet to 15 feet bgs interval. Both soil borings MM-3b and MM-4 were flooded with water while drilling for safety reasons. Exhibit 2, a Methane Monitoring Point Location Map, depicts the site on an aerial photograph and denotes the locations of the seven soil borings methane monitoring points installed at the site (the methane monitoring point installed in soil boring MM-3 was plugged and abandoned prior to the completion of field activities). Soil boring logs, summarizing the soils noted along with the methane gas concentrations encountered in each soil boring, are provided at the end of this report. Additionally, photographs of field activities are also provided at the end of this report.

On June 17, 2020, Terracon returned to the site to install 10 additional soil borings to investigate for the potential presence of methane gas in the vicinity of those previous soil borings with the elevated methane concentrations detected during drilling (MM-3b and MM-4). Soil borings were advanced using a direct-push technology (DPT) soil sampling rig using a 60-inch long core barrel sampler. Soil boring locations were determined by Mr. Norman (client). Soil borings B-7 through B-15 were advanced to depths ranging from 20 feet to 25 feet bgs while soil boring B-16 was advanced to only 10 feet bgs. During drilling activities, the down-hole air in each soil boring was screened for methane gas at 5-foot intervals using a Landgem 5000 multi-gas meter. The majority of the soil borings did not have detectable concentrations of methane gas. However, soil boring B-9 had methane gas concentrations of 0.4% in the 10 feet to 15 feet bgs interval and 0.6% in the 15 feet to 20 feet bgs interval. In soil boring B-16, the methane gas concentration in the 0 feet to 5 feet bgs was 0.3% and in the 5 feet to 10 feet bgs interval the methane gas concentration was 2.0%. Exhibit 2 depicts the locations of soil borings B-7 through B-16.

EXHIBITS



Path: \\sanantonio\1\Data\Projects\2020\90207061\GIS\90207061_exhibit_1.mxd

Legend

Site Boundary (Approximate)



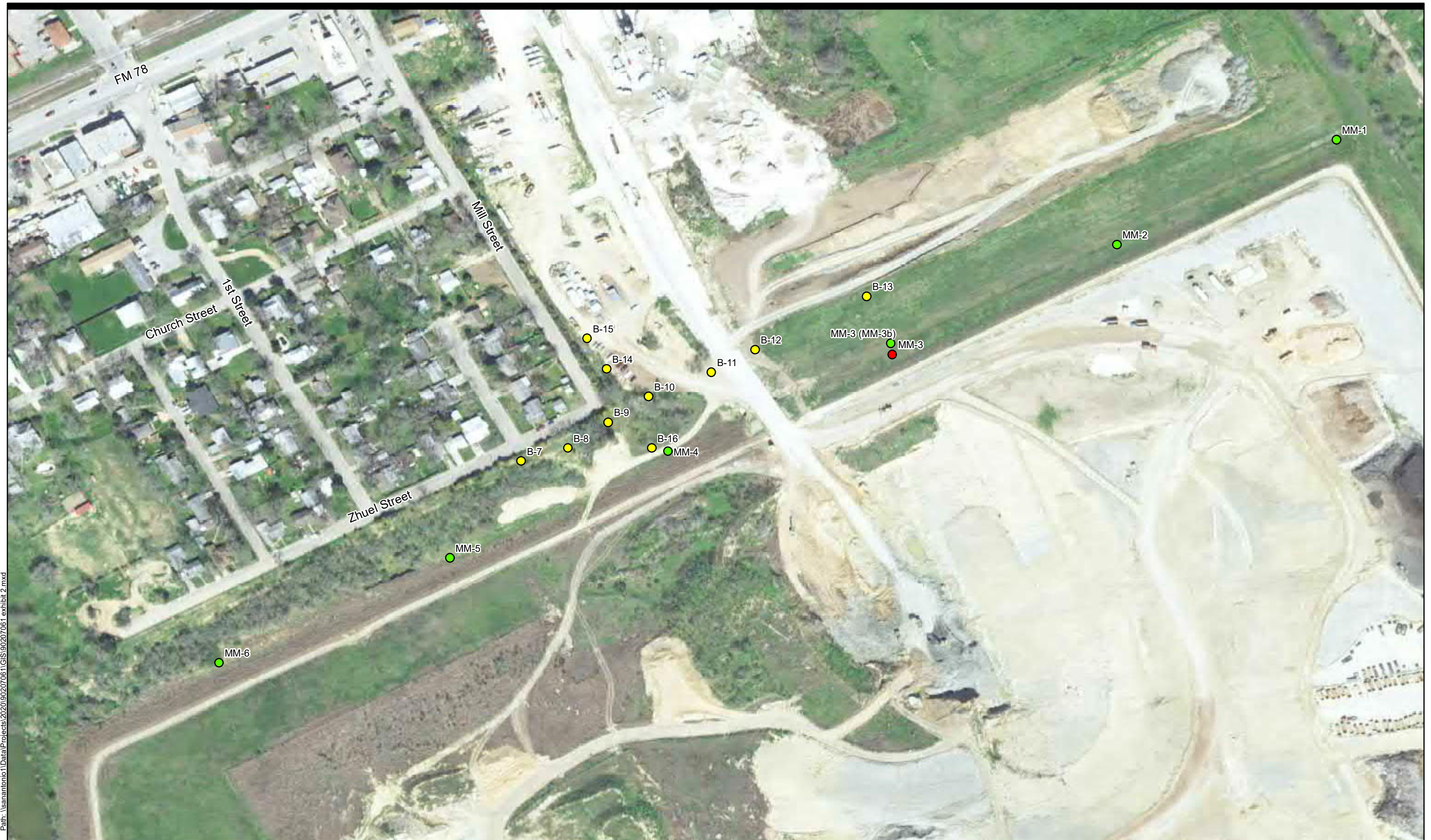
Project Mng: KKB
 Drawn By: KKB
 Checked By: QB
 Approved By: KKB

Project No. 90207061
 Scale: 1 in = 2,000 ft
 TBPE Firm No. F-3272
 Date: 07-03-2020

Terracon
 Consulting Engineers & Scientists
 6911 Blanco Road San Antonio, TX 78216
 PH (210) 641-2112 Fax (210) 641-2124

Vicinity Map
Beck Landfill
 550 FM 78
 Schertz, Guadalupe County, Texas

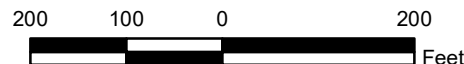
Exhibit
 1



Path: \\sanantonio\1\Data\Projects\2020\90207061\GIS\90207061 exhibit 2.mxd

Legend

- Methane Monitoring Points
- Methane Monitoring Points (Plugged and Abandoned)
- Soil Borings



Project Mngr: KKB
 Drawn By: KKB
 Checked By: QB
 Approved By: KKB

Project No. 90207061
 Scale: 1 in = 200 ft
 TBPE Firm No. F-3272
 Date: 07-03-2020

Terracon
 Consulting Engineers & Scientists
 6911 Blanco Road San Antonio, TX 78216
 PH (210) 641-2112 Fax (210) 641-2124

Methane Monitoring Point Location Map	Exhibit
Beck Landfill 550 FM 78 Schertz, Guadalupe County, Texas	2

PHOTO LOG



Photo #1 View of drill rig at location MM-1.



Photo #2 View of typical soil sample collected from the soil boring MM-1.



Photo #3 View of technicians excavating the upper few feet of the soil boring MM-2 using a post-hole digger.



Photo #4 View of typical soil sample collected from soil boring MM-2.



Photo #5 View of technician collecting down-hole methane readings at soil boring MM-2.



Photo #6 View of drill rig at location MM-2.



Photo #7 View of soil sample from the bottom of the soil boring MM-2, showing Navaro Clay present.



Photo #8 View of a drilling activities at soil boring location MM-3.



Photo #9 View of drill rig set up at boring location MM-3b with the methane monitoring point installed at location MM-3 in foreground. Note that MM-3b is being drilled through the soil access ramp (gray clay and shale) constructed for site access for this project.



Photo #10 Another view of drill rig set up at boring location MM-3b with the methane monitoring point installed at location MM-3 is visible in the left-side of the photograph. Gray soil access ramp is approximately 3 feet thick under rig.



Photo #11 View of drill rig at soil boring location MM-4.



Photo #12 View of methane monitoring point installed at soil borings MM-4.



Photo #13 View of drill rig set up at soil boring MM-5.



Photo #14 View of technician taking down-hole methane gas readings in soil boring MM-5.



Photo #15 View of drill rig set up at soil boring MM-6.



Photo #16 View of Navaro clay encountered at the bottom of the soil boring MM-6.



Photo #17 View of technicians installing protective boxes and concrete pads at methane monitoring point MM-2.



Photo #18 View of direct-push drill rig at soil boring B-7.



Photo #19 Typical view of soil cores collected from soil boring B-7.



Photo #20 View of drilling activities at soil boring B-8.



Photo #21 View of technician backfilling soil boring B-8 after drilling activities were completed.



Photo #22 View of drill rig at soil boring B-10.



Photo #23 View of drill rig at the soil boring B-11.



Photo #24 View of drill rig at soil boring B-13.



Photo #25 View of drill rig at soil boring B-14.



Photo #26 View of drill rig at soil boring B-15.



Photo #27 Typical view of completed methane monitoring point and well pad installation. Installation of protective bollards (yellow poles) was completed the following day.

BORING LOGS

WELL LOG NO. MM-1

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.55192° Longitude: -98.26233°	INSTALLATION DETAILS Well Completion: Aboveground	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
DEPTH	MATERIAL DESCRIPTION						
5.0	FILL - SANDY LEAN CLAY WITH GRAVEL (CL) , brown, dry to moist, subangular to subrounded chert, less than 1-inch diameter. Volume is 20% gravel. Sand is coarse-grained. Fill is from construction of earthen dike.	Concrete grout 0.5 in. diameter schedule 40 PVC riser Hydrated bentonite				100	-
						100	0.0
						100	0.0
		20/40 silica sand 0.5 in. diameter 0.010 PVC screen	5			100	0.0
	SANDY LEAN CLAY (CL) , low to medium plasticity, dark brown to brown, dry to moist, stiff to very stiff. Sand is fine-grained.					50	0.0
10.5	LEAN CLAY/FAT CLAY (CL/CH) , medium to high plasticity, brown, moist, soft.					100	0.0
						50	0.0
14.0	CLAYEY GRAVEL (GC) , brown and beige, dry to moist, some fine-to medium-grained sand, subangular to subrounded chert gravel, less than 1-inch diameter. Volume is 50-60% gravel. Alternating layers of 6-inch to 9-inch clay (similar to the 10.5-14 feet bgs interval).					50	0.0
						50	0.0
						50	0.0
						50	0.0
						50	0.0
22.3	Wet seam at 22-feet bgs. FAT CLAY (CH) , high plasticity, blue/gray and brown, moist, stiff to very stiff, Navarro clay.					100	0.0
25.0							

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Hollow stem auger

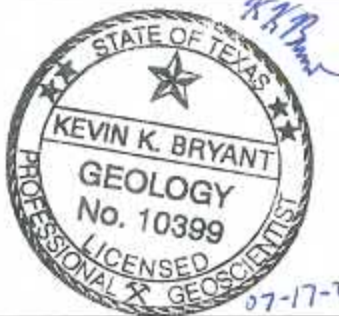
Abandonment Method:

Notes:

Logged by: Kevin Bryant
Hand dug to 20-inches bgs.

WATER LEVEL OBSERVATIONS

Water observed at 22 feet bgs.



Well Started: 06-08-2020

Well Completed: 06-08-2020

Drill Rig: Hollow stem auger

Driller: Vortex

Project No.: 90207061

Exhibit: B-13

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX ENVIRONMENTAL SMART LOG 90207061 BORINGS.GPJ TERRACON_DATATEMPLATE.GDT 7/17/20

WELL LOG NO. MM-1

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

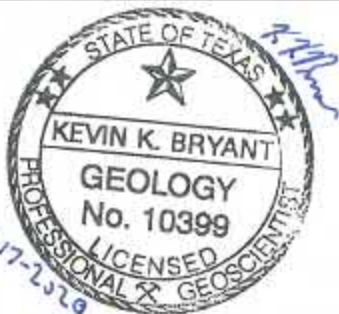
GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.55192° Longitude: -98.26233°	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
	DEPTH MATERIAL DESCRIPTION					
	<i>Boring Terminated at 25 Feet</i>					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Hollow stem auger

Abandonment Method:

Notes:



WATER LEVEL OBSERVATIONS

Water observed at 22 feet bgs.



Well Started: 06-08-2020

Well Completed: 06-08-2020

Drill Rig: Hollow stem auger

Driller: Vortex

Project No.: 90207061

Exhibit: B-14

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX_ENVIRONMENTAL_SMART_LOG_90207061 BORINGS.GPJ TERRACON_DATA_TEMPLATE.GDT 7/17/20

WELL LOG NO. MM-2

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.55127° Longitude: -98.26369°	INSTALLATION DETAILS Well Completion: Aboveground	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
DEPTH	MATERIAL DESCRIPTION						
5.0	FILL - SANDY LEAN CLAY WITH GRAVEL (CL) , brown/dark brown/dark gray/beige, dry to moist, subangular to subrounded chert, less than 1-inch diameter. Volume is 20% gravel. Sand is coarse-grained. Fill material is from construction of earthen dike.	Concrete grout 0.5 in. diameter schedule 40 PVC riser Hydrated bentonite				100	-
8.5	LEAN TO FAT CLAY (CL/CH) , medium to high plasticity, dark brown, dry, stiff.	20/40 silica sand 0.5 in. diameter 0.010 PVC screen	5			100	0.0
12.0	SANDY LEAN CLAY (CL) , low to medium plasticity, dark brown to brown, dry to moist, stiff to very stiff. Sand is fine-grained.		10			100	0.0
17.5	LEAN TO FAT CLAY (CL/CH) , medium to high plasticity, brown, moist, medium stiff. At 16.5-feet bgs, trace coarse sand and trace gravel, subangular to subrounded, less than 0.5-inch diameter. Gravel is less than 5% volume.		15			50	0.3
20.0	SANDY LEAN CLAY (CL) , medium plasticity, orangish-brown to brown, moist to nearly wet, soft. Sand is fine-to-medium-grained.		20			75	0.3
24.0	CLAYEY GRAVEL (GC) , brown and beige, dry to moist, fine-to-medium-grained sand. Subangular to subrounded chert gravel, less than 1-inch diameter. Volume is 50-60% gravel. Alternating layers of clay and gravel. Wet, mostly gravel at 22-feet bgs.		25			100	0.6
	FAT CLAY (CH) , high plasticity, bluish gray and brown, moist, stiff to very stiff, Navarro clay.					40	0.9
						100	0.9

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Hollow stem auger

Abandonment Method:

Notes:

Logged by: Kevin Bryant
Hand dug to 2.5-feet bgs.



WATER LEVEL OBSERVATIONS

Water observed at 22 feet bgs.



Well Started: 06-08-2020

Well Completed: 06-08-2020

Drill Rig: Hollow stem auger

Driller: Vortex

Project No.: 90207061

Exhibit: B-15

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX ENVIRONMENTAL SMART LOG 90207061 BORINGS.GPJ TERRACON_DATATEMPLATE.GDT 7/17/20

WELL LOG NO. MM-2

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

GRAPHIC LOG	LOCATION Exhibit 2		DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
	Latitude: 29.55127° Longitude: -98.26369°						
	DEPTH	MATERIAL DESCRIPTION					
	27.5	FAT CLAY (CH) , high plasticity, bluish gray and brown, moist, stiff to very stiff, Navarro clay. <i>(continued)</i>			X	100	0.9

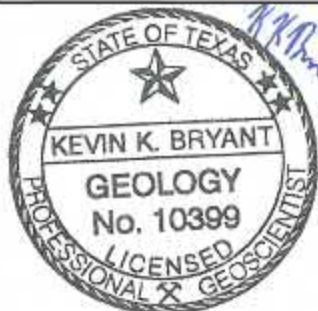
Boring Terminated at 27.5 Feet

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Hollow stem auger

Abandonment Method:

Notes:



WATER LEVEL OBSERVATIONS

Water observed at 22 feet bgs.



Well Started: 06-06-2020

Well Completed: 06-08-2020

Drill Rig: Hollow stem auger

Driller: Vortex

Project No.: 90207061

Exhibit: B-16

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX_ENVIRONMENTAL_SMART_LOG_90207061_BORINGS.GPJ TERRACON_DATA_TEMPLATE.GDT 7/17/20

WELL LOG NO. MM-3

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.55059° Longitude: -98.26506°	INSTALLATION DETAILS Well Completion: Aboveground	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
DEPTH	MATERIAL DESCRIPTION						
5.0	FILL - SANDY LEAN CLAY WITH GRAVEL (CL) , brown, dry to moist, subangular to subrounded chert, less than 1-inch diameter. Volume is 20% gravel. Fill material is from construction of earthen dike. Sand is coarse-grained.	Concrete grout 0.5 in. diameter schedule 40 PVC riser Hydrated bentonite			Hand	100	-
9.0	LEAN TO FAT CLAY (CL/CH) , medium to high plasticity, dark brown, dry, stiff.	20/40 silica sand 0.5 in. diameter 0.010 PVC screen	5		IS	100	-
17.0	LEAN CLAY (CL) , trace fine-grained sand, medium plasticity, brown, moist, stiff.					75	0.0
25.0	SANDY SILTY CLAY (CL) , fine-grained sand, medium plasticity, brown, moist, medium soft to stiff.					75	-
			10			100	4.5
						100	0.0
			15			100	0.0
						100	0.0
			20			100	0.0
						100	-
			25			100	1.4

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Hollow stem auger

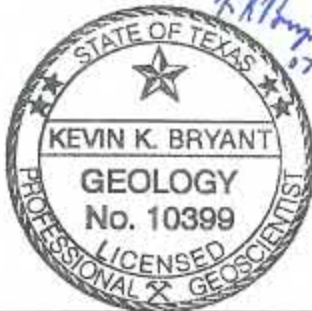
Abandonment Method:
Plugged and abandoned on 06/11/2020

Notes:

Logged by: Kevin Bryant
Hand dug to 2-feet bgs.
Flooded borehole beginning at 10-feet bgs due to high methane readings.

WATER LEVEL OBSERVATIONS

Water observed at 25 feet bgs.



Well Started: 06-08-2020

Well Completed: 06-08-2020

Drill Rig: Hollow stem auger

Driller: Vortex

Project No.: 90207061

Exhibit: B-17




THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX_ENVIRONMENTAL_SMART_LOG_90207061 BORINGS.GPJ TERRACON_DATATEMPLATE.GDT 7/17/20

WELL LOG NO. MM-3

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

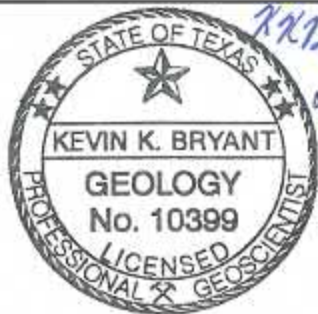
GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.55059° Longitude: -98.26508°		DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
	DEPTH	MATERIAL DESCRIPTION					
	27.5	GRAVEL (GW) , brown, wet, dense, subrounded chert and limestone, less than 2-inch diameter.			X	10	0.1
	29.0	CLAYEY GRAVEL (GC) , brown and beige, dry to moist, fine-to-medium-grained sand, Subangular to subrounded chert gravel, less than 1-inch diameter. Volume is 50-60% gravel. Alternating layers of clay and gravel.			X	100	-
	32.5	FAT CLAY (CH) , high plasticity, blue/gray and brown, moist, stiff to very stiff. Navarro clay.			X	100	-
<i>Boring Terminated at 32.5 Feet</i>							

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Hollow stem auger

Abandonment Method:
Plugged and abandoned on 06/11/2020

Notes:



WATER LEVEL OBSERVATIONS

Water observed at 25 feet bgs.



Well Started: 06-08-2020

Well Completed: 06-08-2020

Drill Rig: Hollow stem auger

Driller: Vortex

Project No.: 90207051

Exhibit: B-18

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX_ENVIRONMENTAL_SMART_LOG_90207051 BORINGS GPJ TERRACON_DATATEMPLATE.GDT 7/17/20

WELL LOG NO. MM-3B

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.55066° Longitude: -98.26509°	INSTALLATION DETAILS Well Completion: Aboveground	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
DEPTH	MATERIAL DESCRIPTION						
3.0	FILL - SHALE , Light gray shale fill material used to construct soil ramp.	Concrete grout 0.5 in. diameter schedule 40 PVC riser Hydrated bentonite	3.0				0.0
8.5	LEAN TO FAT CLAY (CL/CH) , medium to high plasticity, dark brown, dry, stiff.		5				0.0
12.0	LEAN CLAY (CL) , with trace fine-grained sand, medium plasticity, brown, dry to moist, stiff.		8.5				0.1
20.0	SANDY LEAN CLAY (CL) , fine-grained sand, brown, moist, medium soft to stiff.	20/40 silica sand 0.5 in. diameter 0.010 PVC screen	12.0				0.0
22.0	WELL GRADED SAND WITH CLAY (SW-SC) , medium plasticity, brown and beige, dry to moist, medium dense to dense, fine-to-medium-grained sand.		15				0.1
22.0	CLAYEY GRAVEL (GC) , brown, dry to moist, dense, subrounded chert, less than 0.75-inch diameter.		20				0.8
	At 18-feet, increasing sand volume.		25				0.3
							0.7
							3.3
							4.6

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Hollow stem auger

Abandonment Method:

Notes:

Logged by: Kevin Bryant

Flooded borehole beginning at 22.5-feet bgs due to high methane readings.
Per client's request, the methane monitoring point installed at this location has been called "MM-3."

WATER LEVEL OBSERVATIONS

Water observed at 26 feet bgs.



Well Started: 06-09-2020

Well Completed: 06-09-2020

Drill Rig: Hollow stem auger

Driller: Vortex

Project No.: 90207061

Exhibit: B-19

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX_ENVIRONMENTAL_SMART_LOG_90207061 BORINGS.GPJ TERRACON_DATATEMPLATE.GDT 7/17/20

WELL LOG NO. MM-3B

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.55066° Longitude: -98.26509°		DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
	DEPTH MATERIAL DESCRIPTION						
27.3	CLAYEY GRAVEL (GC) , brown, dry to moist, dense, subrounded chert, less than 0.75-inch diameter. <i>(continued)</i> Wet at 26-foot bgs.	[Pattern]					3.3
30.0	FAT CLAY (CH) , high plasticity, blue/gray to dark gray and orange-brown, moist, stiff to very stiff. Navarro clay	[Pattern]					-
Boring Terminated at 30 Feet			30				

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Hollow stem auger

Abandonment Method:

Notes:



WATER LEVEL OBSERVATIONS

Water observed at 26 feet bgs.



Well Started: 06-09-2020

Well Completed: 06-09-2020

Drill Rig: Hollow stem auger

Driller: Vortex

Project No.: 90207061

Exhibit: B-20

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX_ENVIRONMENTAL_SMART_LOG_90207061 BORINGS.GPJ TERRACON_DATA TEMPLATE.GDT 7/17/20

WELL LOG NO. MM-4

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.54999° Longitude: -98.28647°	INSTALLATION DETAILS	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
		Well Completion: Aboveground					
	MATERIAL DESCRIPTION						
7.5	SANDY SILTY CLAY (CL) , fine-grained sand, medium plasticity, brown, dry to moist, medium soft to stiff.	Concrete grout 0.5 in. diameter schedule 40 PVC riser Hydrated bentonite	5	15	Hand	100	0.0
12.0	SANDY LEAN CLAY (CL) , low to medium plasticity, light brown, moist, soft to medium soft. Sand is mostly fine-grained.	20/40 silica sand 0.5 in. diameter 0.010 PVC screen	10		X	100	-
14.0	CLAYEY SAND (SC) , light brown, dry to moist, medium dense, mostly fine-to medium-grained sand. Some coarse-grained sand present.		15		X	100	0.7
15.0	SANDY LEAN CLAY (CL) , with trace subrounded chert gravel, less than 1-inch diameter, medium plasticity, light brown, moist, soft to medium soft.		15		X	50	0.8
15.5	GRAVEL (GW) , brown, wet, loose, subrounded to rounded chert gravel, less than 2-inch diameter.		15		X	66	0.8
16.0	CLAYEY GRAVEL (GC) , medium to high plasticity fines, brown and gray, dense.		15		X	66	8.9
18.0	FAT CLAY (CH) , high plasticity, bluish gray and brown, moist, stiff to very stiff. Navarro clay.		15		X	33	0.6
20.0	Boring Terminated at 20 Feet		20		X	100	-
			20		X	100	-

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Hollow stem auger

Abandonment Method:

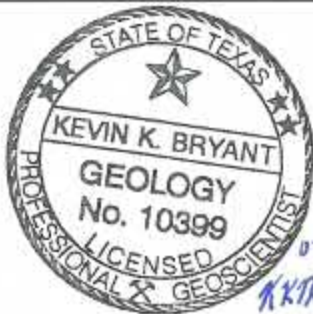
Notes:

Logged by: Kevin Bryant

Hand dug to 2-feet bgs.
Flooded borehole beginning at 15-feet bgs due to high methane readings.

WATER LEVEL OBSERVATIONS

Water observed at 15 feet bgs.



Well Started: 06-09-2020

Well Completed: 06-09-2020

Drill Rig: Hollow stem auger

Driller: Vortex

Project No.: 90207061

Exhibit: B-21

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX_ENVIRONMENTAL_SMART_LOG_90207061 BORINGS.GPJ TERRACON_DATA_TEMPLATE.GDT 7/17/20

WELL LOG NO. MM-5

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.54933° Longitude: -98.26782°	INSTALLATION DETAILS Well Completion: Aboveground	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
DEPTH	MATERIAL DESCRIPTION						
0	SILTY CLAY (CL) , with fine-to medium-grained sand, low to medium plasticity, reddish brown, dry, stiff.	Concrete grout 0.5 in. diameter schedule 40 PVC riser Hydrated bentonite	5		Hand	100	-
7.5	At 6-feet, transitioning from reddish brown to orangish brown, stiff to hard.					100	-
10.0	CLAYEY SAND (SC) , orange-brown, dry, stiff to hard, sand is fine-grained.	20/40 silica sand 0.5 in. diameter 0.010 PVC screen	10		X	80	0.0
14.0	At 6-feet, transitioning from reddish brown to orangish brown, stiff to hard.					60	0.0
20.0	CLAYEY GRAVEL (GC) , medium plasticity, light brown to whitish brown, dry, medium dense to dense, subrounded to rounded chert gravel, less than 1.25-inch diameter. Volume is at least 50% gravel. Increased gravel size to less than 2-inch diameter at 14-feet bgs. Whitish-tan color, dry to moist at 16-feet bgs.		15		X	90	0.0
23.0	GRAVELLY FAT CLAY (CL/CH) , medium to high plasticity, moist, stiff to very stiff, subangular to subrounded chert gravel, approximately 0.5-0.75-inch diameter. Up to 25% gravel by volume. Mostly orange-brown with blue-gray streaks.					60	0.0
25.0	Coarse sand and little to no gravel at 22.5-feet bgs. FAT CLAY (CH) , high plasticity, blue/gray and orange-brown, moist, stiff to very stiff. Navarro clay.		20		X	75	0.0
25.0			25		X	100	0.0

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

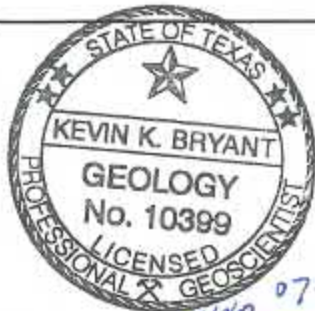
Advancement Method:
Hollow stem auger

Abandonment Method:

Notes:

Logged by: Kevin Bryant

Hand dug to 2-feet bgs.



WATER LEVEL OBSERVATIONS

No free water observed.



Well Started: 06-10-2020

Well Completed: 06-10-2020

Drill Rig: Hollow stem auger

Driller: Vortex

Project No.: 90207061

Exhibit: B-22

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX_ENVIRONMENTAL_SMART_LOG_90207061 BORINGS.GPJ TERRACON_DATA_TEMPLATE.GDT 7/17/20

WELL LOG NO. MM-5

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

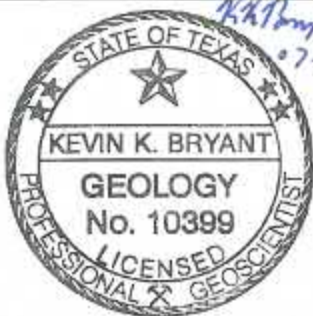
GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.54933° Longitude: -98.26782°	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
	DEPTH	MATERIAL DESCRIPTION				
	Boring Terminated at 25 Feet					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Hollow stem auger

Abandonment Method:

Notes:



WATER LEVEL OBSERVATIONS

No free water observed.



Well Started: 06-10-2020

Well Completed: 06-10-2020

Drill Rig: Hollow stem auger

Driller: Vortex

Project No.: 90207061

Exhibit: B-23

WELL LOG NO. MM-6

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX_ENVIRONMENTAL_SMART_LOG_90207061 BORINGS.GPJ TERRACON_DATATEMPLATE.GDT 7/17/20

GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.54868° Longitude: -98.26925°	INSTALLATION DETAILS Well Completion: Aboveground	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
DEPTH	MATERIAL DESCRIPTION						
0.5	FILL - SHALE , light gray, dry, loose. Used to construct soil ramp.	Concrete grout 0.5 in. diameter schedule 40 PVC riser Hydrated bentonite				100	-
	CLAYEY GRAVEL (GC) , medium plasticity fines, light gray to light brownish gray, dry to moist, subrounded to rounded chert, less than 2-inch diameter. Volume is at least 60% gravel and decreases with depth.					100	-
4.0	LEAN CLAY WITH GRAVEL (CL) , medium plasticity, brown, moist, stiff.					60	0.0
5.5	LEAN CLAY (CL) , medium plasticity, brown, medium soft, tree roots.	20/40 silica sand 0.5 in. diameter 0.010 PVC screen	5			66	0.0
6.5	LEAN CLAY (CL) , medium plasticity, brown, medium soft, tree roots.						
7.3	SAND (SP) , brown to light brown, dry, dense, fine-to-medium-grained.						
	CLAYEY GRAVEL (GC) , medium plasticity, light orange-brown, dry, dense, subrounded chert, less than 1-inch diameter. Volume is 50% to 70% gravel.					75	0.0
9.0	SANDY LEAN CLAY (CL) , medium plasticity, orangish brown, moist, stiff						
11.0	CLAYEY GRAVEL (GC) , light gray to whitish brown, dry, loose to medium dense, subrounded to rounded chert, less than 1-inch diameter. Volume is 60% to 80% gravel. Some medium-to-coarse-grained sand.					40	0.0
	At 17-foot bgs, 6-inch thick gravelly clay (CL) seam, stiff.					40	0.0
19.5	SANDY LEAN CLAY (CL) , low to medium plasticity, light orange-brown, dry to moist, stiff to very stiff, mostly fine-grained with few medium-grains.					50	0.0
20.3	FAT CLAY (CH) , high plasticity, blue/gray and brown, moist, stiff to very stiff. Navarro clay.					80	0.0
22.5	Boring Terminated at 22.5 Feet					100	0.0

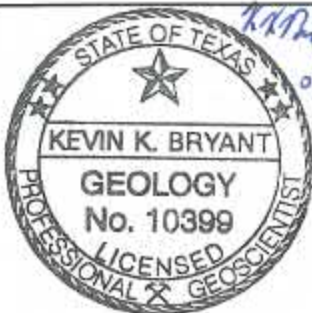
The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Hollow stem auger

Abandonment Method:

Notes:

Hand dug to 2-feet bgs.



WATER LEVEL OBSERVATIONS

No free water observed.



Well Started: 06-10-2020

Well Completed: 06-10-2020

Drill Rig: Hollow stem auger

Driller: Vortex

Project No.: 90207061

Exhibit: B-24

BORING LOG NO. B-7

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT, TX_ENVIRONMENTAL_SMART_LOG_90207061 BORINGS.GPJ TERRACON_DATATEMPLATE.GDT 7/17/20

GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.54993° Longitude: -98.26738°	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
DEPTH	MATERIAL DESCRIPTION					
3.0	LEAN CLAY (CL) , with trace fine grained sand, medium plasticity, dark brown, dry, stiff, roots.				60	0.0
6.0	SANDY SILTY CLAY (CL) , low to medium plasticity, light orange-brown, dry, stiff.					
14.5	LEAN CLAY (CL) , trace fine-grained sand, medium plasticity, orange-brown, dry, stiff. At 11-feet, color transition to dark orange-brown clay.				100	0.0
16.0	SANDY LEAN CLAY (CL) , fine-grained sand, low to medium plasticity, orange-brown to light orange-brown, dry, stiff to very stiff.				100	0.0
20.0	CLAYEY GRAVEL (GC) , whitish orange-brown to brown, dry, dense, subangular to subrounded chert, less than 1.5-inch diameter. Volume is 60-80% gravel.				75	0.0
Boring Terminated at 20 Feet		20				

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push Technology

Abandonment Method:
Boring backfilled with bentonite
Surface capped with concrete

Notes:

Logged by: Kevin Bryant



WATER LEVEL OBSERVATIONS

No free water observed.



Boring Started: 06-17-2020

Boring Completed: 06-17-2020

Drill Rig: Geoprobe

Driller: Vortex

Project No.: 90207061

Exhibit: B-9

BORING LOG NO. B-8

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 28.55001* Longitude: -98.26709*	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
DEPTH	MATERIAL DESCRIPTION					
4.0	SILTY CLAY (CL) , medium plasticity, brown, dry, medium soft to stiff, with trace fine-grained sand and trace rounded chert gravel, less than 1-inch diameter.				75	0.0
5	SANDY LEAN CLAY (CL) , low to medium plasticity, light orange-brown to light brown, dry, medium stiff to stiff, fine-grained. At 6-feet, decreasing sand content.				80	0.0
10					85	0.0
13.0	CLAYEY SAND (SC) , light brown, dry to moist, medium dense, mostly fine to medium-grained sand with some coarse-grained sand present.					
14.5	GRAVEL (GW) , brown, dry, loose, subrounded to rounded chert, less than 2-inch diameter.				75	0.0
20	At 18-feet, moist.					
23.5	At 23-feet, wet.				90	0.0
25.0	FAT CLAY (CH) , high plasticity, blue/gray and brown, moist, stiff to very stiff, Navarro clay.					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push Technology

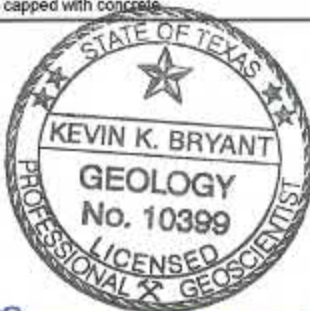
Abandonment Method:
Boring backfilled with bentonite
Surface capped with concrete

Notes:

Logged by: Kevin Bryant

WATER LEVEL OBSERVATIONS

Water observed at 23 feet bgs.



Kevin K. Bryant 07-17-2020



Boring Started: 06-17-2020

Boring Completed: 06-17-2020

Drill Rig: Geoprobe

Driller: Vortex

Project No.: 90207061

Exhibit: B-10

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX_ENVIRONMENTAL_SMART_LOG_90207061 BORINGS.GPJ TERRACON_DATATEMPLATE.GOT 7/17/20

BORING LOG NO. B-8

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.55001° Longitude: -98.26709°	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
DEPTH	MATERIAL DESCRIPTION					
	<i>Boring Terminated at 25 Feet</i>					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push Technology

Abandonment Method:
Boring backfilled with bentonite
Surface capped with concrete

Notes:

WATER LEVEL OBSERVATIONS

Water observed at 23 feet bgs.



Boring Started: 06-17-2020

Boring Completed: 06-17-2020

Drill Rig: Geoprobe

Driller: Vortex

Project No.: 90207051

Exhibit: B-11

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX_ENVIRONMENTAL_SMART_LOG_90207051 BORINGS.GPJ_TERRACON_DATA_TEMPLATE.GDT 7/17/20

BORING LOG NO. B-9

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.55017° Longitude: -98.26684°	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
DEPTH	MATERIAL DESCRIPTION					
4.5	SANDY SILTY CLAY (CL) , medium plasticity, brown, dry, medium soft to stiff, sand is fine-grained, few fine roots.	4.5			80	0.0
8.5	SANDY LEAN CLAY (CL) , low to medium plasticity, light orange-brown to light brown, dry, medium stiff to stiff, fine-grained	8.5			66	0.0
16.0	CLAYEY GRAVEL (GC) , medium to high plasticity, brown and gray, dry, loose, subrounded to rounded chert, less than 2-inch diameter. Moist at 13-foot bgs.	16.0			80	0.4
16.5	SANDY GRAVEL (GW) , brown, wet, loose, coarse-grained	16.5				
20.0	FAT CLAY (CH) , high plasticity, blue and gray, moist, stiff to very stiff. Navarro clay.	20.0			100	0.6
Boring Terminated at 20 Feet		20				

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push Technology

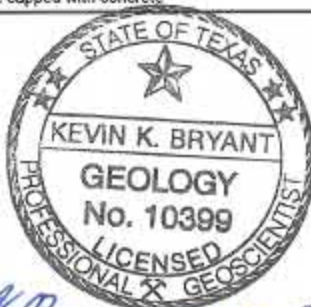
Abandonment Method:
Boring backfilled with bentonite
Surface capped with concrete

Notes:

Logged by: Kevin Bryant

WATER LEVEL OBSERVATIONS

Water observed at 16 feet bgs.



Kevin K. Bryant 07-17-2020



Boring Started: 06-17-2020

Boring Completed: 06-17-2020

Drill Rig: Geoprobe

Driller: Vortex

Project No.: 90207061

Exhibit: B-12

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX_ENVIRONMENTAL_SMART_LOG_90207061 BORINGS.GPJ TERRACON_DATATEMPLATE.GDT 7/17/20

BORING LOG NO. B-10

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.55033° Longitude: -98.26659°	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
DEPTH	MATERIAL DESCRIPTION					
3.0	SANDY SILTY CLAY (CL) , dark brown, dry to moist, fine-grained, scattered chert gravel less than 0.75-inch diameter. Grades to orange-brown with depth.				66	0.0
5.0	LEAN CLAY (CL) , medium plasticity, orange-brown, moist, stiff.					
8.5	LEAN CLAY/FAT CLAY (CL/CH) , medium to high plasticity, orange-brown, moist, medium soft to stiff. Scattered fine-to-medium-grained sand at 7.5 feet bgs.				66	0.0
12.5	CLAYEY GRAVEL (GC) , medium to high plasticity, brown and gray, dry, loose, sub-rounded to rounded chert gravel, less than 2-inch diameter.					
14.0	SANDY LEAN CLAY (CL) , medium plasticity, brown to orange-brown, moist, soft to medium soft, fine-to-medium-grained.				75	0.0
17.0	GRAVELLY FAT CLAY (CH) , high plasticity, brown and gray, moist to nearly wet, soft to medium stiff, sub-rounded to rounded chert gravel, approximately 0.75-inch diameter. Volume is between 10% and 50% gravel.					
20.0	FAT CLAY (CH) , high plasticity, blue/gray and brown, moist, stiff to very stiff. Navarro clay.				100	0.0
Boring Terminated at 20 Feet		20				

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push Technology

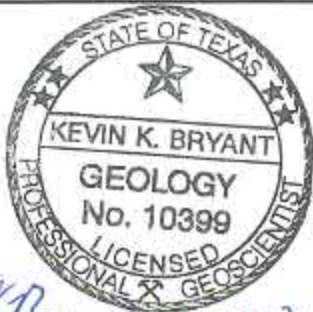
Abandonment Method:
Boring backfilled with bentonite
Surface capped with concrete

Notes:

Logged by: Kevin Bryant

WATER LEVEL OBSERVATIONS

No free water observed.



Boring Started: 06-17-2020

Boring Completed: 06-17-2020

Drill Rig: Geoprobe

Driller: Vortex

Project No.: 90207061

Exhibit: B-1

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX_ENVIRONMENTAL_SMART_LOG_90207061 BORINGS.GPJ TERRACON_DATATEMPLATE.GDT 7/17/20

BORING LOG NO. B-11

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.55048° Longitude: -98.2662°	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
DEPTH	MATERIAL DESCRIPTION					
4.5	FILL - CLAYEY GRAVEL (GC) , brown to whitish-beige, dry, dense, subangular to subrounded chert gravel, up to 2-inch diameter. Volume is at least 75% gravel. Fill material is road base.				60	0.0
9.0	LEAN CLAY (CL) , low to medium plasticity, orange-brown, dry, stiff.	5			75	0.0
12.0	SANDY LEAN CLAY (CL) , medium plasticity, orange-brown, dry to moist, stiff.	10				
17.5	LEAN CLAY/FAT CLAY (CL/CH) , medium to high plasticity, orange-brown, moist, medium soft to stiff.	15			100	0.0
19.0	CLAYEY GRAVEL (GC) , medium to high plasticity fines, brown to whitish-beige, moist, dense.				100	0.0
20.0	FAT CLAY (CH) , high plasticity, blue/gray and brown, moist, stiff to very stiff, Navarro clay.	20				
	Boring Terminated at 20 Feet					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push Technology

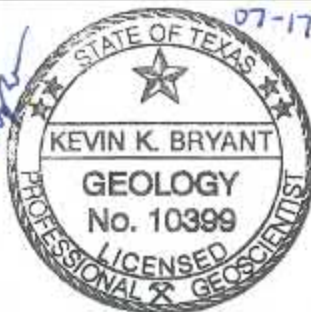
Abandonment Method:
Boring backfilled with bentonite
Surface capped with concrete

Notes:

Logged by: Kevin Bryant

WATER LEVEL OBSERVATIONS

No free water observed.



Boring Started: 06-17-2020

Boring Completed: 06-17-2020

Drill Rig: Geoprobe

Driller: Vortex

Project No.: 90207061

Exhibit: B-2

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX_ENVIRONMENTAL_SMART_LOG_90207061 BORINGS.GPJ TERRACON_DATATEMPLATE.GDT 7/17/20

BORING LOG NO. B-12

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

DEPTH	MATERIAL DESCRIPTION	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
	LOCATION Exhibit 2 Latitude: 29.55062° Longitude: -96.26593°					
2.5	FILL - CLAYEY GRAVEL (GC) , with sand, dry, loose to medium dense, subangular to subrounded chert gravel, approximately 2-inch diameter. Volume is at least 75% gravel. Fill material is road base.					
7.0	LEAN CLAY/FAT CLAY (CL/CH) , medium to high plasticity, grayish-brown, moist, stiff.	5			66	0.0
11.5	LEAN CLAY (CL) , medium plasticity, orangish-brown, dry to moist, stiff.	10			100	0.0
13.5	LEAN CLAY (CL) , medium plasticity, orange-brown, moist, medium soft to stiff, trace rounded chert gravel, less than 0.75-inch diameter.	15			100	-
19.0	CLAYEY GRAVEL (GC) , medium to high plasticity, brown to whitish-beige, moist, medium dense to dense, subrounded to rounded chert gravel, less than 2-inch diameter. Volume is at least 60% gravel. Scattered medium-to-coarse-grained sand.	15			100	0.0
20.0	FAT CLAY (CH) , high plasticity, blue/gray and brown, moist, stiff to very stiff. Navarro clay.	20				
Boring Terminated at 20 Feet						

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push Technology

Abandonment Method:
Boring backfilled with bentonite
Surface capped with concrete

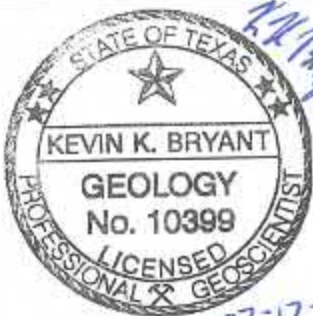
Notes:

Logged by: Kevin Bryant

No methane reading taken in 10-15-foot interval due to borehole collapse.

WATER LEVEL OBSERVATIONS

No free water observed.



Boring Started: 06-17-2020

Boring Completed: 06-17-2020

Drill Rig: Geoprobe

Driller: Vortex

Project No.: 90207061

Exhibit: B-3

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX_ENVIRONMENTAL_SMART_LOG_90207061 BORINGS.GPJ TERRACON_DATATEMPLATE.GDT 7/17/20

BORING LOG NO. B-13

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.55095° Longitude: -98.26524°	DEPTH (#)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
DEPTH	MATERIAL DESCRIPTION					
3.0	LEAN CLAY (CL) , medium plasticity, dark grayish-brown, dry to moist, stiff, few/fine roots.				75	0.0
6.0	LEAN CLAY/FAT CLAY (CL/CH) , with trace fine roots in 3-6 foot interval bgs, medium to high plasticity, brown, moist, medium soft to stiff.				100	0.0
13.0	LEAN CLAY (CL) , trace fine sand, low to medium plasticity, brown, dry to moist, stiff.				90	0.0
14.5	SILTY SAND (SW-SM) , medium plasticity, brown to orangish-brown, dry, loose, fine-to-medium-grained.					
18.0	CLAYEY SAND (SC) , brown to orange-brown, moist, medium dense, fine-to-medium-grained. Medium-to-coarse-grained sand at 17 feet bgs.				90	0.0
21.0	CLAYEY GRAVEL (GC) , medium to high plasticity, brown to whitish-beige, dry to moist, dense, subangular to subrounded chert gravel, less than 2-inch diameter. Volume is at least 50% gravel.					
25.0	FAT CLAY (CH) , high plasticity, blue/gray and brown, moist, stiff to very stiff. Navarro clay.				100	0.0

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push Technology

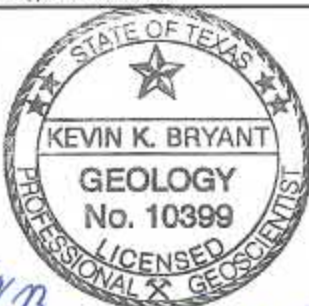
Abandonment Method:
Boring backfilled with bentonite
Surface capped with concrete

Notes:

Logged by: Kevin Bryant

WATER LEVEL OBSERVATIONS

No free water observed.



Handwritten signature and date: K.K. Bryant 07-17-2020



Boring Started: 06-17-2020	Boring Completed: 06-17-2020
Drill Rig: Geoprobe	Driller: Vortex
Project No.: 90207061	Exhibit: B-4

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX_ENVIRONMENTAL_SMART_LOG_90207061 BORINGS.GPJ TERRACON_DATATEMPLATE.GDT 7/17/20

BORING LOG NO. B-13

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.55095° Longitude: -98.26524°	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
DEPTH	MATERIAL DESCRIPTION					
	<i>Boring Terminated at 25 Feet</i>					

The stratification lines represent the approximate transition between differing soil types and/or rock types, in-situ these transitions may be gradual or may occur at different depths than shown.

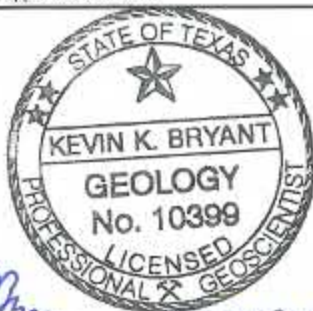
Advancement Method:
Direct Push Technology

Abandonment Method:
Boring backfilled with bentonite
Surface capped with concrete

Notes:

WATER LEVEL OBSERVATIONS

No free water observed.



Boring Started: 06-17-2020

Boring Completed: 08-17-2020

Drill Rig: Geoprobe

Driller: Vortex

Project No.: 90207061

Exhibit: B-5

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX_ENVIRONMENTAL_SMART_LOG_90207061 BORINGS.GPJ TERRACON_DATATEMPLATE.GDT 7/17/20

BORING LOG NO. B-14

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.5505° Longitude: -99.26685°	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
DEPTH	MATERIAL DESCRIPTION					
4.0	FILL - CLAYEY GRAVEL (GC) , Loose, dry, light brown clayey gravel, 0-1 feet bgs. Crushed limestone, 1-2 feet bgs. Gray to dark gray, moist, clayey gravel, 2-3 feet bgs. Asphalt, moist clay, 3-4 feet bgs. Fill material used for parking area construction.				40	0.0
5.0	CLAYEY SAND (CL) , medium plasticity, dark grayish-brown, moist, stiff.					
12.0	LEAN CLAY/FAT CLAY (CL/CH) , medium to high plasticity, orangish-brown, moist, medium soft to stiff, silty. Mostly fat clay (CH) at 9-feet bgs. Scattered fine-grained sand at 10.5-feet bgs.	5 10			95	0.0
17.0	CLAYEY GRAVEL (GC) , brown to whitish beige, dry to moist, dense, subangular to subrounded chert gravel, less than 2-inch diameter. Volume is at least 60% gravel.	15			75	0.0
20.0	FAT CLAY (CH) , high plasticity, blue/gray and brown, moist, stiff to very stiff. Navarro clay.	20			90	0.0
<i>Boring Terminated at 20 Feet</i>						

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push Technology

Abandonment Method:
Boring backfilled with bentonite
Surface capped with concrete

Notes:

Logged by: Kevin Bryant



WATER LEVEL OBSERVATIONS

No free water observed.



Boring Started: 06-17-2020

Boring Completed: 06-17-2020

Drill Rig: Geoprobe

Driller: Vortex

Project No.: 90207061

Exhibit: B-6

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT: TX_ENVIRONMENTAL_SMART_LOG_90207061 BORINGS.GPJ TERRACON_DATA/TEMPLATE.GDT 7/17/20

BORING LOG NO. B-15

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.55069° Longitude: -98.26697°	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
DEPTH	MATERIAL DESCRIPTION					
4.0	FILL - , Crushed limestone, 0-0.75 feet bgs. Clayey gravel, 0.75-4 feet bgs. Fill material used for parking area construction.				60	0.0
5	LEAN CLAY/FAT CLAY (CL/CH) , medium to high plasticity, orangish-brown, dry to moist, medium soft to stiff, silty.					
10	Trace coarse-sand at 8-feet bgs.				100	0.0
12.0	FAT CLAY (CH) , high plasticity, orangish-brown, moist, stiff.				100	0.0
15.0	CLAYEY GRAVEL (GC) , dry, brown.					
16.0	LEAN CLAY/FAT CLAY (CL/CH) , medium to high plasticity, orangish-brown, moist, stiff.					
18.0	FAT CLAY (CH) , high plasticity, blue/gray and brown, moist, stiff to very stiff. Navarro clay.				100	
20.0	Boring Terminated at 20 Feet					

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push Technology

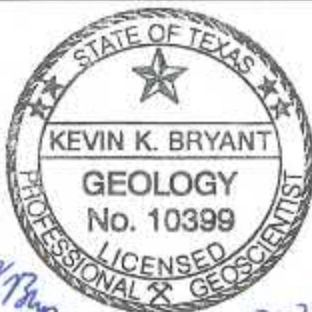
Abandonment Method:
Boring backfilled with bentonite
Surface capped with concrete

Notes:

Logged by: Kevin Bryant

WATER LEVEL OBSERVATIONS

No free water observed.



Boring Started: 06-17-2020

Boring Completed: 06-17-2020

Drill Rig: Geoprobe

Driller: Vortex

Project No.: 90207061

Exhibit: B-7

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX_ENVIRONMENTAL_SMART_LOG_90207061 BORINGS.GPJ TERRACON_DATA_TEMPLATE.GDT 7/17/20

BORING LOG NO. B-16

PROJECT: Beck Landfill Methane Well Installation

CLIENT: Beck Companies

SITE: 550 FM 78
Schertz, TX

GRAPHIC LOG	LOCATION Exhibit 2 Latitude: 29.55001° Longitude: -98.26657°	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (%)	Methane (percent)
DEPTH	MATERIAL DESCRIPTION					
7.0	SILTY CLAY (CL) , medium plasticity, brown, dry to moist, soft to medium stiff.	5			60	0.3
9.0	SANDY LEAN CLAY (CL) , low to medium plasticity, light brown, dry to moist, soft to medium stiff.					2.0
10.0	LEAN CLAY/FAT CLAY (CL/CH) , medium to high plasticity, orangish-brown, moist, stiff.	10				
<i>Boring Terminated at 10 Feet</i>						

The stratification lines represent the approximate transition between differing soil types and/or rock types; in-situ these transitions may be gradual or may occur at different depths than shown.

Advancement Method:
Direct Push Technology

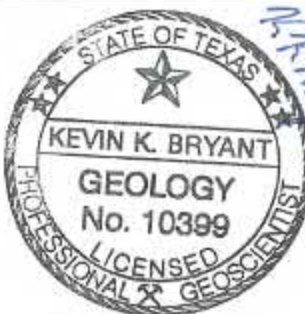
Abandonment Method:
Boring backfilled with bentonite
Surface capped with concrete

Notes:

Logged by: Kevin Bryant

WATER LEVEL OBSERVATIONS

No free water observed.



Boring Started: 06-17-2020

Boring Completed: 06-17-2020

Drill Rig: Geoprobe

Driller: Vortex

Project No.: 90207061

Exhibit: B-8

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TX_ENVIRONMENTAL_SMART_LOG_90207061 BORINGS.GPJ TERRACON_DATATEMPLATE.GDT 7/17/20