AGENCY USE ONLY	NOC#:	REG#:	Date Fee Pd:	Eng. Assigned:
	11935	30291	12/17/19	

pscleanair.org
Puget Sound Clean Air Agency

Puget Sound Clean Air Agency
1904 Third Avenue, Suite 105 | Seattle, WA 98101-3317
Phone 206-343-8800 | 206-343-7522 Fax

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Clean Air Agency

NOTICE OF CONSTRUCTION APPLICATION FOR ORDER OF APPROVAL

The following information must be submitted as part of this application packet before an Agency engineer is assigned to review your project.

SECTION 1. FACILITY INFORMATION

Business Name Crane & Crane Holdings LLC (dba TILZ)			
Equipment Installation Address 12112 Miller Road NW	City Bainbridge Island	State WA	Zip 98110
Is the business registered with the Agency at this equipment installation address? ☐ Yes. Current Registration or AOP No. _____ ☒ No, not registered ☐ Unknown			
Business Owner Name Thomas L Crane, Aaron H Crane, Pamela C Crane			
Business Mailing Address PO Box 10875	City Bainbridge Island	State WA	Zip 98110
Type of Business Composting, Soil Production, Landscape Material Retail			
NAICS Code 325314	NAICS Description Compost Manufacturing		
Contact Name (for this application) Thomas L Crane	Phone 206 225 7079	Email tom@tilz.com	
Provide a 1-2 sentence simple description of this project:			

SECTION 2: REQUIRED APPLICATION PACKET ATTACHMENTS

1) **$1,150 filing fee** (nonrefundable)

☒ PAY BY CHECK – Attached and made payable to **Puget Sound Clean Air Agency**

☐ PAY BY CREDIT – Accounting technician will contact person identified below for payment information

Contact Name:	Contact Number:
Thomas Crane	206 225 7079

2) **Detailed Project Description**

The project description must include a detailed description of the project, a list of process and control equipment to be installed or modified, a description of how the proposed project will impact your existing operations (if applicable), and measures that will be taken to minimize air emissions.

Detailed description of the proposed project included in packet?

☒ YES, attached. ☐ NO, not attached. This application is incomplete.

PAID 12-17-19
AMOUNT 1,150.00
CK. NO. 11913
RCPT. NO. 110271

NOTICE OF CONSTRUCTION APPLICATION FOR ORDER OF APPROVAL

SECTION 2: REQUIRED APPLICATION PACKET ATTACHMENTS (CONT)

3) **Process flow diagram**
☒ YES, attached. ☐ NO, not attached. This application is incomplete

4) **Emission estimate.** Emission rate increases for all pollutants.
☒ YES, attached. ☐ NO, not attached. This application is incomplete.

5) **Environmental Checklist** (or a determination made by another Agency under the State Environmental Policy Act)
www.pscleanair.org/DocumentCenter/View/170
☒ YES, attached. ☐ NO, not attached. This application is incomplete..

6) Attach **equipment form(s)** applicable to your operation. Forms are available online at
www.pscleanair.org/179/Apply-for-Notice-of-Construction-Permit
☒ YES, attached. ☐ NO, not attached. This application is incomplete.

SECTION 3: PROCESS AND CONTROL EQUIPMENT (attach additional pages if necessary)

Process Equipment		Does this equipment have air pollution control equipment?	Air Pollution Control Equipment	
# of Units	Equipment Type & Design Capacity		# of Units	Equipment Type
	See Attached Excel list	☐ Yes ☒ No		
		☐ Yes ☐ No		
		☐ Yes ☐ No		

SECTION 4: CERTIFICATION STATEMENT

I, the undersigned, certify that the information contained in this application and the accompanying forms, plans, specifications, and supplemental data described herein is, to the best of my knowledge, accurate and complete.

Signature — Date: 12-5-2019

Tom Crane, Aaron Crane, Pamela Crar — Printed Name

Owner — Title

SECTION 5: APPLICATION SUBMITTAL

☐ **EMAIL application and attachments to:**
NOC@pscleanair.org

-OR-

☐ **MAIL application, payment, and attachments to:**
Puget Sound Clean Air Agency
ATTN: NOC Application Submittal
1904 3rd Ave, Suite 105 - Seattle, WA 98101

THIS SECTION FOR AGENCY USE ONLY						
Eng. Assigned (Compliance Mgr)	Eng. Rec'd (Eng)	Web description (Eng)	Completeness review (Eng)	Routed for OA Prep (Eng)	OA signed (Compliance Mgr)	OA mailed (Admin)
Date:	Date:	Date:	Date:	Date:	Date:	Date:

Tilz Soil and Compost Emission Calcs Sept 9, 2019
Notice of Construction Application
Puget Sound Clean Air Agency
Emissions at 14000 tons per year

316 HP Loader

Exhaust from diesel engines, 316 HP Loader

							hours/year
1 Loader	316	HP	AP-42	7	hrs per day each	104	days per year	728

AP-42 Emission Factors
Large Stationary Diesel, Table 3.3-1, up to 600 hp

Pollutant	Diesel Fuel Emission Factor lbs/hp-hr	hp	hr/year	Emission lbs/year		Emission tons/year
NOx, Uncontrolled	0.031	316	728	7131		3.6
CO	0.00668	316	728	1537		0.8
SOx	0.00205	316	728	472		0.2
PM 10	0.0022	316	728	506		0.3
CO2	1.15	316	728	264555		132.3
Aldehydes	0.000463	316	728	107		0.1
TOC		316	728	0		0.0
Exhaust	0.00247	316	728	568		0.3
Evaporative	0	316	728	0		0.0
Crankcase	0.0000441	316	728	10		0.0
Refueling	0	316	728	0		0.0

Emisson Limit under Tier 4

Diesel engines, 163 HP Loader, Excavator, Screener, Grinder

							hours/year
Grinder	580	HP	Tier 4	4	hrs per day each	300	days per year	1200
Screener	174	HP	Tier 4	4	hrs per day each	104	days per year	416
1 Loader	163	HP	Tier 4	7	hrs per day each	300	days per year	2100
1 Excavator	102	HP	Tier 4	4	hrs per day each	104	days per year	416

Tier 4, 175 - 500 HP **Grinder**

Diesel Fuel
Emisson Limit under Tier 4

Pollutant	g/hp-hr	lbs/hp-hr	HP	Emission hr/year	Emission lbs/year		Emission tons/year
NOx	0.3	0.000660793	580	1200	460		0.2
CO	2.6	0.005726872	580	1200	3986		2.0
NMHC	0.14	0.00030837	580	1200	215		0.1
PM	0.015	3.30396E-05	580	1200	23		0.0
CO2, AP-42		1.15	580	1200	800400		400.2

Tier 4, 75 - 175 HP **Screener, 163 HP Loader, Excavator**

Diesel Fuel
Emisson Limit under Tier 4

Pollutant	g/hp-hr	lbs/hp-hr	HP	hr/year	Emission lbs/year		Emission tons/year
Nox	0.3	0.000660793	439	2932	851		0.4
CO	3.7	0.00814978	439	2932	10490		5.2
NMHC	0.14	0.00030837	439	2932	397		0.2
PM	0.015	3.30396E-05	439	2932	43		0.0
CO2, AP-42		1.15	439	2932	1480220		740.1

Aerated Static Pile

Using California Compost Emisson Factor from a study done in 2013

"Greenwaste Compost Site Emissions Reductions from Solar-powered Aeration and Biofilter Layer"

5/14/2013 Funded by and prepared for the San Joaquin Valley Technology Advancement Program

Table 5.1 ASP Air Emissions (pounds per ton compost mix) for a 22 day compost period with extrapolated estimates for 30 day and 60 day periods.

		NH3		Greenhouse Gas		
Cycle Length	VOC	Field	Lab	CO2	CH4	N2O
22 days	0.01	0.02	0.01	206	5.1	0.01
30 days	0.13	0.02	0.01	271	5.2	0.02
60 days	0.22	0.02	0.01	517	5.6	0.08

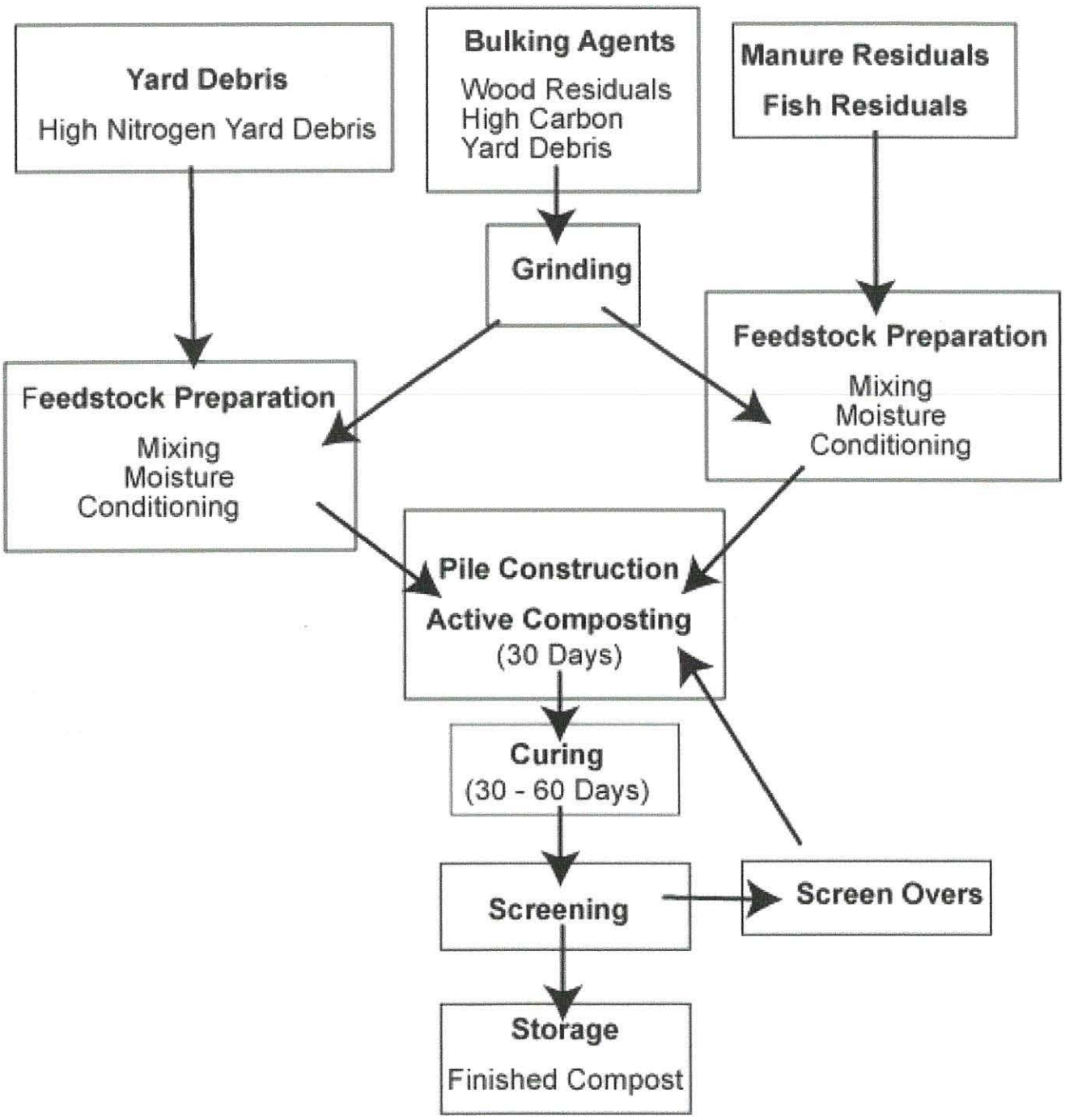
Estimating Emission Rates Per Year from Compost System, 14000 tons per year

		NH3		Greenhouse Gas			Annual Proposed Tonnage
Cycle Length	VOC	Field	Lab	CO2	CH4	N2O	14,000 tons per year
22 days	0.1	0.02	0.01	206	5.1	0.01	lbs Emission/ton
	0.7	0.14	0.07	1442	35.7	0.07	tons Emission/yr
30 days	0.13	0.02	0.01	271	5.2	0.02	lbs Emission/ton
	0.91	0.14	0.07	1897	36.4	0.14	tons Emission/yr
60 days	0.22	0.02	0.01	517	5.6	0.08	lbs Emission/ton
	1.54	0.14	0.07	3619	39.2	0.56	tons Emission/yr

Tilz Soil and Composting
Process and Control Equipment
17-Sep-19
Harold Ruppert
O2Compost

Process Equipment		Does this equipment have air pollution control equipment?		Air Pollution Control Equipment			
# of Units	Equipment Type and Capacity	Yes	No	# of Units	Equipment Type and Capacity		
1	Composting Aerated Static Pile, 14000 t/yr		No	None			
1	Grinder, 580 HP		No				
1	Screener, 174 HP		No				
1	Loader, 163 HP		No				
1	Loader, 316 HP		No				
1	Excavator, 102 HP		No				

Tilz Soils and Compost, Composting Facility Flow Diagram



Crane & Crane Holdings LLC
PSCAA Detailed Project Description

Prepared by Peter Moon, P.E. and Harold Ruppert, O2Compost,
Revised: October 15, 2019

General Description

Crane & Crane Holdings LLC (dba TILZ) (abbreviated as Tilz) is located in Kitsap County at 12112 Miller Road NW, Bainbridge Island, Washington and includes approximately 4.5 acres. The Google Earth Coordinates are 47.672948,122.548536, The site is accessed by driving southbound on Washington State Highway 305, west on NE Day Road, and South on Miller Road NE.

Company Name: Crane & Crane Holdings LLC (dba TILZ)
Company Owners: Thomas L Crane
Aaron H Crane
Pamela C Crane

Mailing address is: PO Box 10875, Bainbridge Island, Washington, 98110
Office Phone: 206 842 4045

The site is currently operating as a wood waste recycling facility on Bainbridge Island. The facility processes wood and yard waste residuals and produces topsoil and has operated for approximately 20 years. Processed are approximately 7,000 tons of raw material per year. Given recent changes to the pile regulation and clarification of the definition of yard waste Tilz has determined that it is in everyone's best interest to upgrade the facility to full composting.

This proposal will supplement and benefit the existing operations by providing an organic soil supplement for topsoil production. Phase I will total about 7,000 tons of raw materials per year which is approximately the current volume. No incoming mass change for Phase I. Phase II is planned that will increase the total raw material quantity to 14,000 tons per year and this will take place occur over several years.

Tilz is proposing the construction and operation of a compost facility for recycling: 1) green yard waste from residential, landscape businesses and land clearing activity, 2) fish waste, and 3) agricultural herbivore manure and bedding from Kitsap and surrounding counties. Wood waste including sawdust, shavings, and ground and chipped wood will be used as a bulking material and carbon source.

The compost facility will be constructed in 2020 and the throughput of materials will be increased in phases as stated above. Phase I will include the processing of up to 7,000 tons per year total

weight of material, including bulking agent. Phase II will include a gradual increase to 14,000 tons per year, depending on the availability of feedstocks and markets for the finished products. This proposal is for the full capacity of 14,000 tons per year of total feed stock the majority of which will be green and wood waste. This is approximately equal to a volume of 36,000 cubic yards per year of ground feed stock assuming a bulk density of 800-lbs per cubic yard.

Construction will initially consist of installing a concrete composting pad that measures 100-ft X 300-ft. This area will be utilized for receiving and grinding feedstocks (100-ft x 100-ft) and Active Composting using the Aerated Static Pile Method (100-ft. x 100-ft.). The Phase I process will utilize a total area of 100-ft X 200-ft. Composting will require electrical utilities, blowers, instrumentation, drainage systems, a leachate pond, leachate application system, a stormwater system and necessary grading.

Phase II will be an expansion of the composting area resulting in the use of the total 100-ft X 300-ft area for receiving, grinding and composting. At full capacity approximately 0.7 acres of the 4.5-acre property will be utilized for mixing, composting, and curing.

Tilz will use an Extended Aerated Static Pile (EASP) composting technology. Controlled airflow will be forced into the base of the composting pile to supply oxygen to support aerobic bacterial growth. This process minimizes odor generation and expedites organic decomposition. The process can be managed by monitoring or sensing pile temperatures and adjusting the rate of airflow into the pile. A biofilter cover consisting of unscreened compost will be placed over the pile to minimize the release of odors and volatile organic compounds. The biofilter cover will be used in the initial process prior to and during pathogen reduction and prior to reaching product stability.

Portable electric (3-Hp) blowers will be used to provide air to the base of the pile. These will be controlled by timers or by a centrally located programmable logic controller (PLC). Phase I will require 4 blowers and Phase II will require an additional 4 blowers. Blowers use small electric motors which make minimal noise.

A leachate pond will be constructed for collection and reuse of water which has come in contact with the uncured compost and raw feed stocks. The pond will be sized to hold the rainfall from a 24-hour 25-year storm event on the receiving, mixing, composting, and curing areas.

Water that does not come in contact with regulated solid waste and does not get absorbed or evaporated will be considered stormwater and routed to the stormwater pond and discharged to surface water by way of created bioswales.

Heavy equipment will be used to move and process material and construct aerated piles. After composting the product will be cured allowing the fungal organisms to further decompose the product.

The time duration for curing and storage will depend upon the seasonal product demand and product quality necessary. Storage pile size will vary through the year to handle the variation in

seasonal feedstock volume and variation in demand for the finished products. In any case regulatory conditions for storage as specified by Kitsap County Health District (KCHD) and the local fire marshall will be followed.

The product will be screened to generate a fine product and a coarse product. Product testing will be performed as required by KCHD and Washington State Department of Ecology Solid Waste Regulations.

Compost Consultant:

Mr. Peter Moon, P.E.
02Compost
P.O. Box 1026, Snohomish, WA 98291
Telephone: 360-568-8085
Fax: 360-563-5790
Email: peter@o2compost.com

Composting Operations

Extended Aerated Static Pile Method

Tilz will utilize the Extended Aerated Static Pile (EASP) method of composting. With EASP composting, fresh air (i.e., oxygen) is blown into the pile under positive pressure to: 1) maintain aerobic conditions throughout the pile and 2) eliminate the need for pile turning. By maintaining aerobic conditions throughout the pile, the rate of composting is dramatically increased, pathogen reduction criteria are achieved, and off-site impacts from offensive odors are avoided.

Environmental Protection

All composting operations will be conducted on a concrete pad, and compost leachate will drain by gravity and pumped as needed to a lined pond. The leachate pond is located at the topographic low point on the site. Potential run-on of surface water will be diverted away from the leachate collection system and leachate pond. Tilz will utilize the collected leachate for moisture conditioning of the piles and compost feed stock.

Air emissions are generally limited to diesel exhaust from equipment and trucks. Dust, resulting from vehicle traffic and periodic on-site yard debris chipping and screening, will likely occur during periods of prolonged dry weather. Dust emissions on the roads may be controlled by spraying with water during periods of dry weather. There is no smoke associated with the proposed project.

Composting operations can result in offensive odors when vegetative materials are allowed to become anaerobic. Tilz will continue to utilize the EASP method of composting to mitigate impacts from potentially offensive odors.

Equipment Description

Equipment used on-site includes:

- Wood grinder
- Front loader- (2)
- Excavator
- Trommel Screen with discharge conveyors

Aerated Static Pile aeration equipment including:

- Electrical support equipment
- Programmable Logic Controller (i.e., Cycle Timers)
- (8) 3 HP 120V high-pressure high-volume blowers
- 4 and 6-inch piping for distribution of air to and beneath piles

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Feedstocks

Tilz will receive yard debris, wood waste, fish waste, and livestock manure. Feed stocks are received from commercial landscapers, the general public, public works organizations (Parks and Recreation, etc.), fish processing, and agriculture.

Quantities of Compost Feed Stock Received

Tilz anticipates eventually receiving a total of 14,000 tons of feedstock annually. Monthly quantities will vary seasonally, with a maximum occurring between March and July and a minimum during the winter months. Average quantities are below.

Description Full Production	cy/Mo.	Bulk Density	Weight (Tons/Mo.)
Total feedstock	2900	800	1170
Output: Estimated 35% of total volume	1885	800	754
Total Est. Quantity Output Product Estimated by vol. 40% screen overs, 60% accepts			
Screened Product	1131	750	424
Screen Overs	754	600	226

Mass Balance at Average Rate

The proposed feed stock in the compost mix will be approximately by volume:

80% wood, yard, and landscape residuals
10% fish waste
10% herbivore manure and bedding

Mixing Bulking Agents

Bulking agents are typically woody materials that have sufficient size to provide structural support and maintain air spaces within the composting matrix. Bulking agents form a three-dimensional matrix of solid particles capable of self-support by particle-to-particle contacts. Grass clippings and similar "wet" feed stocks can be viewed as being supported within the voids between the bulking agent particles.

The bulking agents to be used for this process include: shredded wood waste and compost screen overs (i.e., coarse fraction). In the case of shredded green waste, the available nutrients are a source of energy for the compost material and thereby provide a secondary benefit. The screen overs serve to inoculate the initial mix of compost materials with microorganisms and to provide structure and porosity in the pile. These materials will be processed to a 2-inch minus size using the grinder that is dedicated to the site.

Receiving Feedstocks

Feedstocks consist of four general types.

1) One type will be woody or low nitrogen feed stocks. Generally, these will be land clearing debris, or solid wood materials that have little potential for odor generation. This material will be ground and used as a carbon source and for bulking. This material will be ground and moved as needed to prepare the appropriate mix for composting.

2) The second type of feedstock will be green waste (i.e., yard debris) that is high in nitrogen and delivered by the general public, landscapers or contract haulers. In all cases the delivery will be to a tipping area identified at the site. This area may be moved from time to time to provide a safety buffer between the public and grinding operations. Green waste will comprise the majority of materials received and processed by Tilz.

3) A third type of feedstock will be agricultural waste, including livestock manure from local farms. This material will be tipped on a slab. If delivered by the local public it may cause site congestion to have it brought into the yard waste tipping area. Delivery will take place on the receiving slab but then moved by loader to the mix being prepared for compost feedstock. The runoff from the receiving slab will have leachate retention.

4) The fourth feed stock is fish waste. This procedure will require bulk deliveries where the fish waste can be immediately placed in a pile to be aerated. Detailed procedures for handling fish waste will be developed.

Pre-Processing and Batch Mixing

Size reduction of the yard debris materials will be accomplished with a front-end loader and a grinder that are both dedicated to the site. Incoming materials will be reduced to a 2-inch minus size and blended with bulking materials (shredded wood waste and agricultural residuals) as needed to provide an initial mix that has a carbon to nitrogen ratio (C : N) of between 25 : 1 and 35 : 1 and a moisture content of 60 to 65 percent.

The initial mixing will be accomplished promptly to produce a homogeneous blend of materials (as the first step to mitigate potentially offensive odors). Mixing will be accomplished partially using the front-end loader then completed during the grinding process. To obtain the proper mix the front-end loader scoop volume will be used as the unit of measure the operator will simply count bucket loads of the various mix components. Mixing will be performed by dumping on the pad the appropriate proportions and lifting and combining the feedstock on a clean flat surface.

Seasonal adjustments of the initial mix will be necessary. The character of the yard debris is expected to change from wet nitrogen rich materials during the spring, to dry carbon rich materials during the fall season. The flow of yard debris materials to the site during the winter months will generally consist of prunings, Christmas trees, and other carbon rich wastes. These winter materials will likely not require immediate processing to mitigate potentially offensive odors.

Building Aerated Static Piles

Tilz will utilize the Extended Aerated Static Pile (EASP) method of composting for feed stocks. The EASP method uses perforated pipes to distribute air throughout the compost pile. The air pipe is connected to electric blowers, which forces air into the compost pile (positive aeration). Contiguous compost cells (also called zones) are constructed directly on the flank (side slope) of the previous cell thereby producing a flat-topped extended pile.

As each cell is being constructed, a 6-inch to 12-inch layer (6-inch minimum thickness) of finished compost is placed over the top of the raw feed stocks. This cover layer serves four main purposes:
1) acting as an insulating blanket to ensure that all of the materials reach desired temperatures for pathogen and weed seed destruction,
2) serving as a biofilter to digest odor-causing compounds before being emitted to the open air, and;
3) helping to maintain the desired moisture content within the pile; and
4) control vectors from breeding or burrowing in the pile.

During peak operating conditions, there will generally be one or more fully constructed EASP and one partially constructed EASP at any given point in time. The entire composting process will take place without moving the pile. This step will take 21 to 30 days and completion will be based on the temperature cycle and the need to create space for subsequent piles.

By maintaining an oxygen level of at least 8 to 10 percent within the pile, aerobic conditions will be met, thereby mitigating offensive odors.

Active Composting

The active phase of composting (the period during which most of the process heat and potentially offensive odors are generated) generally lasts between 21 and 30 days and will take place in extended aerated static piles, as discussed previously.

During the active phase of composting the primary objective is to reach temperatures throughout the pile of at least 55°C (131°F) for a minimum of 72 hours. This standard is referred to as a Process to Further Reduce Pathogens (PFRP) as defined in the Federal EPA regulations for biosolids composting (40 CFR Part 503). While Tilz will not be composting biosolids, these criteria will be used to produce a safe finished product, available to the public for unrestricted use.

Curing

The subsequent curing phase of composting (the period during which the product becomes stable and marketable) lasts an additional 30 to 60 days. The curing phase may be accomplished either in the original compost pile, with adjusted airflow, or in a separate stockpile. Given that the finished product is screened, the screening process can take place either before or following product curing.

Screening

Following curing the product will be screened to produce as many as three products. 1) Fine screened product, 2) Medium screened product and 3) Screen overs. The size of the fine and medium products will depend upon the size of the screener mesh used. Screen overs may be used as they are, or reground for size reduction. The screen overs are also used as plenum, biofilter cover, or simply fed back into the pile for further composting.

Storage

As part of the curing process, the finished compost product will typically be stored for some period of time. This may take place in the curing pile or be removed to a separate temporary storage area that easily accessible to trucks and trailers.

Storage of product following curing may take place off the concrete pad and off the area of leachate collection. Before product can be stored off the pad it must be confirmed that the metals concentration, pathogen destruction, pH, physical contaminants, sharps, and stability meet the levels specified in Table 220B in WAC 173-350-220. Storage piles must be surrounded by a berm, swale, or ditch to prevent run-off to stormwater. Covering the pile is also an option.

Measures to prevent storm water run-on also must be taken to prevent re-absorption of water. Berms and placement on elevated ground can prevent run-on. Storage piles must also be kept at a moisture content below 60% water. This can be accomplished by confirming with the squeeze test that the stored compost's moisture is initially below 55%.
Porosity in the storage piles will be achieved and maintained by keeping the height of the piles at or below 10 ft. This will minimize consolidation and compaction. When the storage piles are constructed the operator will break up any existing dense areas from prior storage by handling with the loader (pouring and fluffing the material when building pile). The loader operator will avoid driving on the pile to prevent compaction.

Odor Management and Dust Control Plan

Introduction

"All living systems, both plant and animal, excrete odorous molecules on a nearly continuous basis.
The end products of anaerobic metabolism include methane, carbon dioxide, water and heat, along with odorous compounds such as hydrogen sulfide (H2S), volatile organic acids, mercaptans, and methyl sulfides. The obvious odor from anaerobic metabolism has led to a widely held belief that if composting is fully aerobic there will be no odors. This simply is not true. All composting facilities produce some odor. The main products of aerobic composting are carbon dioxide, water and heat. Many low molecular weight, odorous intermediates may also be produced during aerobic composting, including ammonia (NH3} acetic acid, and citric acid. For this reason, it is essential in designing and operating a compost facility to implement a thorough and active odor management program."

Reference: The Practical Handbook of Compost Engineering; Roger T. Haug, 1993 P546

Composting Method to Reduce Odors

Tilz will utilize Extended Aerated Static Pile (EASP) method with positive aeration. The EASP method uses perforated pipes installed beneath the compost pile, connected to electric blowers which will force air into the compost pile (positive aeration).

Compost Facility Odor Management

Managing odors at Tilz includes the following elements:

- Feedstock receiving, proper initial mixing of compost materials;
- Positive aeration of the compost pile to maintain aerobic conditions;
- Compost curing
- Good housekeeping practices to minimize sources of odor

- Compost storage

Mix ratio development and characteristics are critical to successful composting. Mix ratio refers to the ratio or portion of each feedstock in the initial mix. The initial mix impacts a number of processing parameters including: processing time, aeration requirements, odor generation, leachate production and final product quality. The following parameters are significant in the initial mix:

- Porosity
- Moisture Content
- Available Carbon Content
- Nutrient Content (i.e., C : N Ratio)

Porosity is of primary importance for initial mixing. A mix with insufficient porosity will limit aeration. Porosity is provided in a mix by large particle size materials such as chipped brush and wood chips, also referred to as "bulking agents". In general, the porosity of the initial mix is considered optimal if the bulk density ranges between 650 and 950 pounds per cubic yard.

Maintaining the moisture content of a compost pile within the optimum range is critical to successful composting. Sufficient water must be available for microbial activity. Excessive moisture content reduces porosity, promotes odor producing anaerobic conditions and slows the decomposition process. Excessive moisture also acts as a heat sink, reducing pile temperatures. The optimum initial moisture content for composting is considered to be 60 to 65 percent, although experience shows that some feed stocks may successfully be composted with higher initial moisture contents (e.g., separated dairy solids).

Heat is generated during the composting process as a result of the rapid decomposition of organic compounds that are readily available as substrate for microbial growth. Readily available forms of carbon include sugars, starches, fats and proteins. Less available forms of carbon include hemicellulose, cellulose and lignin, all of which decompose much more slowly. The composting process requires a certain fraction of readily available compounds to be present. For example, a pile of sawdust will not generate much heat compared to a similar sized pile of sawdust mixed with poultry manure.

Inorganic nutrients such as nitrogen, potassium and phosphorous are required for microbial growth. In some mixes, nitrogen can be limiting. For example, yard debris collected during the winter months can have low nitrogen content, while all other nutrients are typically present in sufficient quantity. As a general rule of thumb, the ratio of carbon to nitrogen (C:N ratio) should be between 25:1 and 35:1. A lower C:N ratio (i.e., high nitrogen content) can result in the production of odorous nitrogen containing compounds such as amines and ammonia during composting. At higher C:N ratios, nitrogen may not be sufficient for active, thermophilic composting.

Positive Aeration to Maintain Aerobic Conditions

In an EASP compost system, the blowers are operated to either push air into the pile (forced or positive aeration) or pull air through the pile (drawn or negative aeration). The following discussion elaborates on positive aeration.

The frequency and duration of blower operation is adjusted to maintain aerobic conditions throughout the pile. An on/off cycle is typically used to optimize pile temperatures, and at the same time maintain aerobic conditions. Time and temperature controls (programmable logic controllers) may also be used to achieve these conditions.

With positive aeration, the blower outlet is connected to the aeration manifold and ambient air is pushed through the pile beginning at the aeration base (i.e., plenum). The air then passes up through the compost mix and is finally emitted through the finished compost cover. One of the functions of the compost cover is to serve as a biofilter to treat potentially odorous off-gasses that are emitted from the compost pile.

Leachate Odor Management

Tilz will construct a leachate pond to retain runoff from a 24-hour 25-year storm event. Given the generation of heat by biological activity there will be an on-going need for make-up water. There is a likelihood leachate will be held in the pond for more than a few days. Should odor management in the leachate pond become necessary, aeration will be installed.
The site is engineered such that the pad will not accumulate or puddle leachate and drain pipes will be sloped to prevent retention of leachate.

Good Housekeeping to Minimize Odor

Odor reduction is accomplished by practicing "good house-keeping" in all areas of the compost facility. It is essential to clean up the feedstock receiving and mixing areas daily and eliminate areas of standing water. A daily walk-through of the compost facility is important to identify potential sources of odor as well as problems with disconnected aeration pipes. In addition, equipment used to mix and process feedstock materials should be routinely cleaned to minimize exposure of raw materials to the open air.

The primary means to keeping odor minimized is aeration. This is done using blowers. Tilz will have available 8 blowers for aeration. This provides sufficient oxygen and redundancy to backup if one of the blowers fails.

Odor Mitigation

Odor at Tilz using the proposed feed stocks and process could come from several sources. Below are three examples of odor sources and the mitigation measures.

The person making a complaint will be given a follow-up call with the results of an inspection. Corrective actions taken will also be noted and shared with the caller. An odor complaint check sheet will be prepared to assure this procedure is followed.

Tilz staff will review operational information and weather information and take the following steps:

- All complaint calls will be recorded, analyzed, and reported on a monthly basis.
- Immediate action will be taken to identify and correct an odor source, if possible.
- The KCHD will be notified if 5 calls have been received within the previous seven days.
- A written analysis will be generated explaining the suspected cause and corrective actions taken and placed in the facility operation records.
- Complaint records will be shared with the community when requested.

This response system is designed to ensure that Tilz is listening to the surrounding community. It will also serve to inform the KCHD and community of Tilz's response to any community concern.

Odor Complaint Records

Odor complaints are recorded on a form and kept in a master record file that is maintained in the facility office. These complaints can be from individuals or relayed to Tilz from a regulatory agency. At the end of the month this record is tabulated and reviewed. Complaints are noted as to time and location. They will be compared to meteorological data as recorded by the nearest recording station. The number of confirmed complaints will be tracked each month and trends will be observed. Records will be kept for 5 years.

Dust Control Procedures

Compost is a material that can have small particle sizes and low density. It can be a cause of dust especially during times of dry weather conditions and high wind. To decrease the opportunity for dust emission beyond the property boundary Tilz will take the following measures:

- Site concrete surfaces used by loaders to handle feedstock and product will be swept or washed as needed to prevent the accumulation and drying of spilled compost material.
- Piles of compost will be kept at moisture content high enough to prevent the creation of dust during material movement.
- Screening will take place on product with sufficient moisture content to prevent dust. If the product dries sprinklers will be used to moisten the material before screening or sprinklers will be used directly on the screening equipment to prevent the release of dust.

- If during times of elevated wind, dust is seen leaving the Tilz property boundary, the activity generating the dust will be mitigated as mentioned above, ceased, or postponed to a time of lower wind speed such that dust does not leave the site.

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. Background [HELP]

1. Name of proposed project, if applicable:
   TILZ Soils and Compost
2. Name of applicant:
   Crane Land Holdings, LLC dba TILZ
3. Address and phone number of applicant and contact person:
   Tom Crane
   P.O. Box 10875
   Bainbridge Island, WA 98110

   Devin Johnson
   Johnson Squared, Inc
   595 Madison Ave. N
   Bainbridge Island, WA 98110

4. Date checklist prepared:
   December 5, 2019
5. Agency requesting checklist:
   City of Bainbridge Island
6. Proposed timing or schedule (including phasing, if applicable):
   Permitting – Fall 2019
   Construction – Winter 2020 – Fall 2020
7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.
   There are no plans for future expansion beyond this proposal at this time.
8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.
   Puget Sound Clean Air Agency "Notice of Construction" Permit
   Critical Area Determination prepared by BGE Evironmental, LLC
   Washington State Department of Ecology Sand and Gravel Permit # WAG503334

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.
   Clearing and Grading Permit for the City of Bainbridge Island

10. List any government approvals or permits that will be needed for your proposal, if known.
    Clearing and Grading Permit for the City of Bainbridge Island
    Kitsap Health District Solid Waste Handling Permit for Composting. As required under KCBH Ordinance 2010-1, 220 - Composting Facilities
    Puget Sound Clean Air Agency Notice of Construction Order of Approval

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The TILZ composting facility has been in operation as TILZ and other prior names for over 50 years. The 4.53 acre site is located in a sand and gravel quarry. TILZ is a family owned soil production facility that recycles garden and yard waste into organic soil amendment that is sold locally. They also sell bulk landscape material to the public. The proposed project is to improve the existing soil production and storage facilities by constructing concrete pads for grinding and processing compost and improving existing internal roadways and storm water systems.

TILZ Soil & Compost is proposing the construction and operation of a compost facility for recycling: 1) green yard waste from residential, landscape businesses and land clearing activity, 2) fish waste, and 3) agricultural herbivore manure and bedding from Kitsap County and the surrounding counties. Wood waste including sawdust, shavings, and ground and chipped wood will be used as a bulking material and carbon source.

The compost process will be constructed and operated in phases. Phase I will include the processing of up to 7,000 tons per year total weight of material, including bulking agent. Phase II will include an increase to a total of 14,000 tons per year, depending on the availability of feedstocks and markets for the finished products.

Construction will consist of a concrete composting pad that measures 100-ft X 300-ft. This area will be utilized for receiving and grinding feedstocks (100-ft x 100-ft) and Active Composting using the Aerated Static Pile Method (100-ft. x 100-ft.). The Phase I process will utilize a total area of 100-ft X 200-ft. Composting will require electrical utilities, blowers, instrumentation, drainage systems, a leachate pond, leachate application system, a stormwater system and necessary grading.

Phase II will be an expansion of the composting area resulting in the use of the total 100-ft X 300-ft area for receiving, grinding and composting. At full capacity approximately 0.7 acres of the 4.5 acre property will be utilized for composting activities.

TILZ Soil & Compost will use an Extended Aerated Static Pile (EASP) composting technology. Controlled airflow will be forced into the base of the composting pile to supply oxygen to support aerobic bacterial growth. This process minimizes odor generation and expedites organic decomposition. The process can be managed by monitoring or sensing pile temperatures and adjusting the rate of airflow into the pile. A biofilter cover of unscreened compost will be placed over the pile to minimize the release of odors and volatile organic compounds. The biofilter will be used in the initial process prior to and during pathogen reduction and prior to reaching product stability.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

TILZ
12112 Miller Road NE
Bainbridge Island, WA 98110

Tax ID 092502-1-025-2005

Legal Description:
THAT PORTION OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 9, TOWNSHIP 25 NORTH, RANGE 2 EAST, W.M. IN KITSAP COUNTY, WASHINGTON, LYING EASTERLY OF COUNTY ROAD; EXCEPT FOR THAT PORTION DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHWEST CORNER OF THE ABOVE DESCRIBED PROPERTY AND THE POINT OF BEGINNING; THENCE NORTHEASTERLY ALONG THE EASTERLY MARGIN OF COUNTY ROAD 300 FEET; THENCE EASTERLY PARALLEL TO THE SOUTH LINE 250 FEET; THENCE SOUTHWESTERLY PARALLEL WITH THE EASTERLY MARGIN OF COUNTY ROAD 300 FEET; THENCE WESTERLY 250 FEET TO THE POINT OF BEGINNING; AND EXCEPT THE NORTH 20 FEET AS CONVEYED BY RECORDED NO. 8506140039; SITUATE IN KITSAP COUNTY, WASHINGTON.

B. Environmental Elements [HELP]

1. *Earth* [help]

a. General description of the site:

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other _____

b. What is the steepest slope on the site (approximate percent slope)?
45 percent

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.
Harstine gravelly sandy loam and Pit Soils

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

There are no indications or history of unstable soils in the immediate vicinity.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

Soils will be graded and filled to create new concrete pads for the composting process. Internal roads and driveways will be reconfigured to make the operations more efficient. We are proposing to construct the following items:

- Paving 12,316 square feet
- Slab 30,612 square feet
- Leachate Weir 1,239 square feet
- Toll Booth 288 square feet

We will are also proposing to import approximately 640 cubic yards of crushed rock to provide support for the items above.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Erosion will be a concern during the construction of the project. The majority of the work is taking place on the flat portions of the site and we do not expect it to be a significant impact during the construction.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

45,032 square feet/197,659 square feet x 100 = 22.8%

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

The majority of the work will occur on the flat portions of the site. The project will follow Best Management Practices (BMPs) for erosion control as required such as providing a stabilized construction entrance, stabilization of denuded areas, silt fences, straw waddles, sediment barriers, and mulching during construction.

2. Air [help]

a.What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Construction vehicle exhaust and dust will be present during the construction of the project. Emission quantities during construction are not known.

Emissions during operation come from two sources, 1) the internal combustion engines used for grinding, screening, and materials management and 2) composting process and material storage.

1) To be used are 5 internal combustion engines. Four of these are Tier 4 with minimal emissions of priority and toxic air pollutients. Only 316 HP of heavy equipment is not Tier 4 complient. The other 1019 HP of heavy equipment is Tier 4 complient. These emissons will be estimated and provided to PSCAA.

2) Composting will be done using an Aerated Static Pile method with a biofilteration layer on top the pile for collection and biological destruction of priority, toxic, and odorous emissions. Biofolteration has been verified to collect 80% to 95% of these emissions in field trials. An estimation of these quantities will be provided to PSCAA in the NOC information being submitted. Control of emission from incoming feedstocks is done by prompt inclusion of active biodegradable feedstock into composting piles.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

None

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

A biofilteration layer on top the pile for collection and biological destruction of priority, toxic, and odorous emissions. Biofolteration has been verified to collect 80% to 95% of these emissions in field trials. Addition of air, using blowers, will be controlled to assure sufficient oxygen and prevention of anaerobic conditions in the composting pile.

3. Water [help]

a. Surface Water: [help]

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Manzanita Creek, a Type F, Fish bearing Stream and related Category 3 Wetlands are located to the North and East of the property.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Portions of the Work will take place within 200 feet of Manzanita Creek and Wetlands. Please see the attached Technical Memorandum Prepared by BGE Environmental Dated September 6, 2019 Exhibit A and Exhibit B.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

No fill or dredge material will be placed or removed from the surface water or wetlands.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No surface water will be diverted or withdrawn from the wetlands or stream.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

The site does not fall within a FEMA 100 year floodplain.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

There are no waste materials discharged into surface waters or wetlands.

b. Ground Water: [help]

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

Ground water provided by a well located on the site for irrigation and office use. The quanities are unknown.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Effluent from the septic system will be discharged into the ground. The existing 1 bedroom septic system serves approximately 8 full time employees.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

The water generated on the site from rainfall will be collected in two systems. The water falling on the compost slab will be collected and routed to a leachate weir for initial solids separation and then to a leachate pond for fine sediment separation. Water in the leachate pond will be stored and then reapplied to the compost slab for conditioning of the compost. If the leachate pond reaches capacity the water in the pond will be trucked to an approved treatment facility for treatment.

Water generated on the remainder of the site will flow to a water quality pond located at the northwest corner of the property. The water quality pond is sized to in accordance with the City stormwater manual to meet the water quality standard. The pond will be located where an existing small water quality pond is located and will discharge in the same location as the existing pond.

From the discharge location the water will flow in the City's roadside ditch along Miller Road and into Manzanita Creek a Type F stream. Manzanita Creek flows to the west until discharging into Manzanita Bay.

2) Could waste materials enter ground or surface waters? If so, generally describe.

All compost leachate will be collected and utilized as make-up water for the composting process.

Storm water that does not come in contact with unprocessed feedstocks will be diverted around the compost pad and directed to a stormwater retention facility.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

No changes to the drainage patterns will occur. Stormwater will leave the site at the same location.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

See C.1. above. The proposed system will increase the level of treatment that water generated on the site currently receives.

4. Plants [help]

a. Check the types of vegetation found on the site:

__X__deciduous tree: alder, maple, aspen, other
__X__evergreen tree: fir, cedar, pine, other
__X__shrubs
__X__grass
_____pasture
_____crop or grain
_____ Orchards, vineyards or other permanent crops.
_____ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
_____water plants: water lily, eelgrass, milfoil, other
_____other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

Smaller evergreen trees will be removed to move the entry. Himalayan Blackberries (an invasive species) will be removed.

c. List threatened and endangered species known to be on or near the site.

No threatened or endangered species are known to be on or near the site.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

No landscaping is proposed as part of this project

e. List all noxious weeds and invasive species known to be on or near the site.

Himalayan Blackberries are located on the site. Buttercup is located on the site to the east.

5. *Animals* [help]

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Examples include:

birds: hawk, heron, eagle, songbirds, other:
mammals: deer, bear, elk, beaver, other:
fish: bass, salmon, trout, herring, shellfish, other _____

b. List any threatened and endangered species known to be on or near the site.

No threatened or endangered species are known to be on or near the site

c. Is the site part of a migration route? If so, explain.

The site is not part of a migration route.

d. Proposed measures to preserve or enhance wildlife, if any:

No measures are proposed to preserve or enhance wildlife.

e. List any invasive animal species known to be on or near the site.

No invasive animal species are known to be on or near the site.

6. *Energy and Natural Resources* [help]

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

A high effieciency heat pump and a wood stove are used to heat the office. The proposed compost system will utilize, at full build-out, eight 3-HP blowers that will be operated no more than 15 minutes every hour. Each blower uses 35 FL amps at 115 volts. Electrical use will be approximately 24 KW hours per day per blower. If all blowers are operating then use will be less then 6000 KW hours per month. Other electrical use will be pumps, lights, instrumentation, office and other which will total about 2000 KW hours per month.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

Adjacent properties use of solar energy will not be affected by this proposal.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

Energy efficient appliances, blowers and pumps will be used where possible and practical.

7. *Environmental Health* [help]

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this

proposal?
If so, describe

The proposed compost system will utilize, at full build-out, eight 3-HP blowers that will be operated no more than 15 minutes every hour. Each blower uses 35 FL amps at 115 volts. Electrical use will be approximately 24 KW hours per day per blower. If all blowers are operating then use will be less then 6000 KW hours per month. Other electrical use will be pumps, lights, instrumentation, office and other which will total about 2000 KW hours per month.

There are existing above ground storage tanks for fuel and hydraulic oil with suitable spill containment resources available.

1) Describe any known or possible contamination at the site from present or past uses.
There are existing above ground storage tanks for fuel and hydraulic oil that may have created possible contamination. There are no known contaminates on the site.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.
There are no known underground hazardous liquid and gas transmission pipelines located within the project area.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

There are existing above ground storage tanks for fuel and hydraulic oil used for the production equipment .

4) Describe special emergency services that might be required.

No special emergency services will be required.

5) Proposed measures to reduce or control environmental health hazards, if any:

No measures are proposed to reduce or control environmental health hazards.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?
Overall the noise should decrease. The proposed improvements will grant current operation higher efficiency reducing overall noise on the site. Existing noise in the area will not affect the project.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

There will be a short-term increase of noise generated by the construction. There is long-term noise generated by the operation of machinery on site and customer traffic during business hours of 8 am to 5 pm Monday – Saturday.

3) Proposed measures to reduce or control noise impacts, if any:

The short term increase of construction equipment will be offset by the reduced capacity of operation and sales while the construction work is being done. The construction will follow the City of Bainbridge Island Municipal Code limiting construction noise to 7am to 7pm Monday – Friday and 9am to 6pm on Saturday. No construction will take place on Sundays. The long-term operations noise will meet the City of Bainbridge Island Municipal Code 16.16.

It is not expected that the operation of the compost process will noticeably increase the noise above the existing operation's noise levels and duration. Tilz Soils & Composting will continue to operate to comply with City of Bainbridge Island Municipal Code. No additional noise abatement measures are planned.

8. Land and Shoreline Use [help]

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

The current use of the site is a composting facility that has been in use for over 50 years as a top soil production facility and gravel and sand pit. There should be no additional impact on the adjacent properties.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

The site has not been used as farmland or a working forest.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

The proposed project will not affect any surrounding farms or forest land.

c. Describe any structures on the site.

The office and sales office is an existing mobile home approximately 12 X 40. There is another building approximately 30' x 40' that is used for as an equipment repair shop and retail sales.

d. Will any structures be demolished? If so, what?

No structures will be demolished

e. What is the current zoning classification of the site?

Residential – R-0.4

f. What is the current comprehensive plan designation of the site?
OS-R-0.4

g. If applicable, what is the current shoreline master program designation of the site?
Not Applicable

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.
There are steep slopes on the site that are considered critical areas. There are also wetland buffers that encroach on the property near the northeast corner.

i. Approximately how many people would reside or work in the completed project?
There will be approximately 8 employees at the business.

j. Approximately how many people would the completed project displace?
No people will be displaced by the project.

k. Proposed measures to avoid or reduce displacement impacts, if any:

Not Applicable

L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
The proposal is to keep an existing business in operation and improve the environmental condtions and storm water systems.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:
Not Applicable

9. Housing [help]

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.
No housing units will be provided as part of this proposal.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.
No housing units will be eliminated as part of this proposal.

c. Proposed measures to reduce or control housing impacts, if any:
No measures to reduce or control housing impacts are part of this proposal.

10. Aesthetics [help]

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

No new buildings are proposed at this time.

b. What views in the immediate vicinity would be altered or obstructed?

No views in the immediate vicinity will be altered.

a. Proposed measures to reduce or control aesthetic impacts, if any:
No measures will be to reduce or control aesthetic impacts

11. Light and Glare [help]

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Lighting is necessary to allow the operations to be open in the winter time during the hours of operations. Lower levels of lighting are used in the nighttime to assist in security of the premises. No new lighting is part of this proposal.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No lighting and glare will not be a safety hazard or interfere with views.

c. What existing off-site sources of light or glare may affect your proposal?

There are no existing off site sources of light or glare that will affect the proposed project.

d. Proposed measures to reduce or control light and glare impacts, if any:

All new lighting will meet the City of Bainbridge Island Municipal Code 18.15.040 and be shielded and directed downward and located away from the property lines so that no direct light trespasses on the adjacent neighbor's property.

12. Recreation [help]

a. What designated and informal recreational opportunities are in the immediate vicinity?

There are no designated or informal recreational opportunities in the immediate vicinity.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No designated or informal recreational opportunities in the immediate vicinity will be displaced. .

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

No measures are proposed to reduce or control impacts on recreation opportunities on the site.

13. Historic and cultural preservation [help]

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers ? If so, specifically describe.

There are no buildings or structures on the site of any historic or cultural significance.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

There are no landmarks, features or other evidence of Native American or historic use or occupation of the site.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

The entire site has been excavated as a gravel and sand mine and no archaeological items were found.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

There are no proposed measures to avoid, minimize or compensate for loss, changes to, and disturbance to historic or cultural resources.

14. Transportation [help]

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

TILZ Soil and Compost is located directly off of Miller Road NE, a North / South secondary arterial roadway. To the north Miller Road merges with NE Day Road West, a secondary arterial and connects to State Route 305. To the South, Miller Road intersects with NE New Brooklyn (East west secondary arterial) at this intersection Miller changes its name to Fletcher Bay Road NE and continues North/South, and crosses High School Road NE, a secondary arterial and ends at Lynwood Center Road NE, a secondary arterial.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

Kitsap Transit Route 93 serves the site via Miller Road. Kitsap Transit will drop off and pick up at the site.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

No changes are proposed for the number of parking spaces.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

No improvements to existing roads streets, pedestrian, and bicycle or state transportation facilities are proposed. Relocating the existing driveway 20 feet to the south of the existing location is proposed. In addition, we are proposing to extend the paved entrance further into the site to reduce sediment leaving the site.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

The project is located on Bainbridge Island which is served by the Washington State Ferries. There will be no impact to the ferry system since all of Tilz's customers are based on Bainbridge Island and Kitsap County.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

The number of vehicle trips are not expected to increase from current levels. Tilz averages about 71 transactions a day with 2 to 3 deliveries through out the year.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No we do not expect the traffic to increase significantly based on this proposal.

h. Proposed measures to reduce or control transportation impacts, if any:

No measures are proposed to control the traffic impacts.

15. Public Services [help]

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

The public service requirements will not be increased based on this proposal.

b. Proposed measures to reduce or control direct impacts on public services, if any.

No measures are proposed to reduce or control impacts on public services

16. Utilities [help]

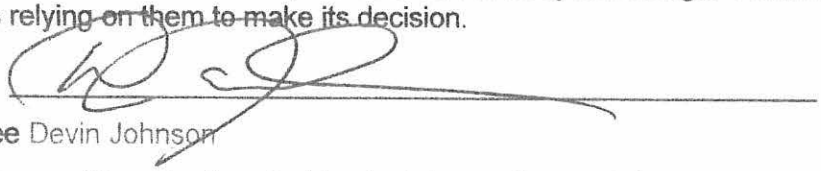
a. Circle utilities currently available at the site:
electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other __Cable TV and Internet_____

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

Puget Sound Energy will provide electricity. Kitsap Public Utility District #1 will provide water. Bainbridge Disposal will proved refuse and recycling service. Century Link will proved telephone services. An on-site sewer system will handle waste water. Comcast will provide Cable Television and Internet services. All of these services are currently serve Tilz Soils and Composting and will continue serving the site during and after construction.

C. Signature [HELP]

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: 

Name of signee Devin Johnson

Position and Agency/Organization Architect , Johnson Squared, Inc

Date Submitted: December 5, 2019

D. Supplemental sheet for nonproject actions [HELP]

(**IT IS NOT NECESSARY** to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

   Proposed measures to avoid or reduce such increases are:

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

   Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

   Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Proposed measures to protect such resources or to avoid or reduce impacts are:

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.