



Protecting Our Land, Air and Water Resources

# Statement of Qualifications

## Aerated Composting

System Design & Operator Training

### **O<sub>2</sub>Compost**

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**O<sub>2</sub>C|ompost**  
Compost Systems & Training

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# Company Overview

**O<sub>2</sub>Compost** specializes in designing small, medium, and large-scale compost systems to process a wide array of organic wastes, including food waste, landscaping debris, and animal manure of every variety. We also offer engineering consultation for general site layout, permitting, and operator training. **O<sub>2</sub>Compost** serves both private and public sector clients, including universities, city and county solid waste authorities, corporate campuses, prisons, and military installations located throughout the United States and Canada.

## History

**O<sub>2</sub>Compost** was founded in 1996 by Peter Moon, a licensed civil / environmental engineer in the State of Washington. In the early years, primary focus was on designing on-farm compost systems to help manage manure from livestock operations and zoos.

Over the years, the same composting principles were applied to all varieties of organic wastes, including landscaping debris, biosolids, and food waste (industrial, commercial and post-consumer). **O<sub>2</sub>Compost** has helped 26 private and public sector clients obtain operating permits for large scale compost facilities.

## Vision

As environmental engineers, scientists and educators, **O<sub>2</sub>Compost's** mission is to teach the art and science of aerated composting, and to empower individuals and organizations of our world community to become advocates for sustainable agriculture and stewards of our land, air and water resources.

We strive to change our society's collective thinking from "Organic Waste Problem" to "Natural Resource Opportunity", and to positively impact the world for generations to come.

# Services

## Pilot Projects

**O<sub>2</sub>Compost** specializes in assisting private and public sector clients conduct compost pilot projects. A pilot project allows our clients to:

- Inexpensively test the feasibility of collecting and composting source-separated organics and utilizing the finished compost on site;
- Produce a finished compost product that can be evaluated in a laboratory and used for test marketing;
- Identify logistical constraints and evaluate possible solutions to improve overall efficiency of current waste management practices;
- Provide hands-on training for management and operating staff in the science and art of composting, and establish a set of Standard Operations Procedures;
- Complete the pilot phase within a relatively short timeframe (2 to 12 months) to avoid over committing available resources;
- Establish confidence with stakeholders (decision makers, regulators and neighbors);
- Conduct a cost-benefit analysis to evaluate the return on investment and determine if composting is an economically sustainable practice;
- Establish a set of metrics to evaluate the reduction in carbon footprint;
- Reach a Go / No-Go decision quickly and at a minimal cost; and
- Establish a basis for full-scale system design and a budget for construction and annual operation.

An expanded pilot project may also include a comprehensive waste audit of currently non-recycled materials to determine what additional percentage of the waste stream can be reduced or diverted to recycling and reuse.

## Operator Training

**O<sub>2</sub>Compost** is unique in that we offer comprehensive training for operations staff, managers, local and state regulators, and other interested stakeholders. Training includes a classroom review of composting basics along with practical hands-on field exercises, all of which center around Aerated Static Pile Composting. Training classes can be conducted at your facility, or your operating crew can join our semi-annual operator training class in Seattle, Washington (now offered in April and October).

Following the formal training class, **O<sub>2</sub>Compost** also provides remote technical support to answer questions, review field and laboratory data, and help troubleshoot any challenges that arise. In situations where there is a periodic transition in personnel, **O<sub>2</sub>Compost** staff is available to provide training of the new operating crew.

# Services

## Third-Party Review

As an extension to operator training, **O<sub>2</sub>Compost** is also available to conduct a detailed third-party review of existing compost facilities. A third-party review includes: 1) observing day-to-day operations; 2) evaluating the suitability of operating equipment; 3) reviewing records, laboratory data, operating plans and other permit documents; and 4) recommending ways to improve overall system efficiency and operator safety.

An **O<sub>2</sub>Compost** third-party review prepares the facility for its next regulatory inspection and reveals potential problem areas that should be addressed before the regulators step foot on site.

After conducting a third-party review, one of our clients said, “When we completed our first review with **O<sub>2</sub>Compost**, we saw an immediate ten-fold return on our investment. We have now budgeted this as an annual event and I have every confidence that it is money well spent.”

## Full-Scale Facility Design

With all **O<sub>2</sub>Compost** systems, we follow a prescribed step-by-step process to ensure that all design issues are identified up front, to minimize the overall cost of the system and the need for changes during construction. The size of a compost system is a direct function of the volume of material to be composted. With food waste, we include an area for bulking material storage, mixing, aerated composting, curing and product storage.

The system design mitigates potential impacts to surface and ground water resources and eliminates problems associated with odors and vectors (flies, birds and rodents). While most systems are located relatively close to a source of electrical power, they can also be operated using solar power.

Aerated composting is not an equipment intensive approach; the compost pile is not turned during the first 30 days of composting, referred to as the “active phase”. However, some equipment is required to process the various feedstocks and will include a skid-steer or front-end loader, and may also include a small grinder to pre-process the bulking material, and a screener to post-process the finished compost. **O<sub>2</sub>Compost** can provide assistance to determine the best equipment for a given situation.

## Facility Operating Permits

With larger capacity compost facilities, operating permits are often required. Over the past 24 years, Peter Moon has helped obtain and update permits for 26 compost facilities that compost yard debris, food waste, biosolids and a wide assortment of industrial organic by-products. As part of the permitting process, **O<sub>2</sub>Compost** coordinates zoning and conditional use permits, solid waste handling permits, and air quality permits. As part of the permitting process, we write Operations Plans and Engineering Reports, Site Safety Plans, and an assortment of ancillary plans for Closure/Post-Closure; Odor Impact, and Neighbor Response; Fire Suppression, etc.

# Services

## Converting Over to Aerated Static Pile Composting

**O<sub>2</sub>Compost** specializes in assisting owners of existing turned windrow operations to convert over to Aerated Static Pile Composting. We work closely with the owner / site civil engineer to develop comprehensive designs for both pipe-on-grade systems and aeration trench systems.

Our designs utilize universal composting principles and as such, they are non-proprietary (no license agreements are required). When compared with an average turned windrow system, ASP Composting can: 1) quadruple existing site capacity; 2) resolve off-site odor impacts; and 3) significantly reduce the cost of operations (reduced fuel, labor and equipment time).

## Working With Other Vendors

**O<sub>2</sub>Compost** has developed strong working relationships with many of the major “Vendor Compost Companies”, including:

- Engineered Compost Systems
- Automation Electric Controls
- Green Mountain Technologies
- Transform Compost Systems, Ltd.

When a facility owner prefers to use a compost management system provided by another company, **O<sub>2</sub>Compost** is available to assist with facility design, permitting and operator training services that compliment these proprietary systems.

## Public Information Meetings / Public Hearings

On occasion, **O<sub>2</sub>Compost** is asked to participate in public information meetings to explain and validate the ASP Method of Composting as a Best Available Control Technology. As part of this process, we discuss the particulars of a compost facility design and underscore the importance of mitigating impacts to surface and ground water resources and air quality (odor and dust).

# Engineering Professionals

## Peter Moon, PE

Owner / President

Peter is a licensed civil engineer in the State of Washington and has 32 years of experience in the composting industry. In 1996 Peter started his own business, **O<sub>2</sub>Compost**, and soon thereafter he developed a prototype aerated bin compost system for processing all varieties of organic waste materials.

This aerated bin method of composting led to a personalized training program for on-farm composting of horse manure and, over time, this led to projects involving food waste, green waste and biosolids. To date, **O<sub>2</sub>Compost** has designed over 1,500 small and medium-scale compost systems located throughout the U.S., Canada and 28 foreign countries.

Peter has a Bachelor's degree in Geology from San Jose State University (1977) and a Masters degree in Geotechnical Engineering from UC Berkeley (1979). For many years, his work involved all aspects of landfill design, permitting, and construction as well as environmental compliance in the changing world of state and federal regulations.

His work in composting began in 1989 when he successfully obtained the first compost facility permit in King County for Iddings Compost (Kent, WA). Since that time, Peter has helped obtain over 30 operating permits for compost facilities located in six states and provinces.

## Harold Ruppert

System Design and Permitting

Harold worked with **O<sub>2</sub>Compost** as a project manager since February 2005. His responsibilities have included writing operating plans, solid waste permits, storm water pollution prevention plans, review of land use codes, compost system design, operator training, and graphic support for compost system design.

Prior work experience includes:

- Four years of employment by Pacific Topsoils as an environmental manager, safety manager, and technical assistant.
- Nine years as a project manager on remediation and redevelopment of properties for Weyerhaeuser.
- Seventeen years as an environmental supervisor and project manager for land use issues, solid waste permitting, site cleanup, water quality, storm water, hazardous waste, air quality, Model Toxics Control Act, PCB cleanup, sediment assessment, wetland and shoreline.

# Project Experience - Food Waste

## ► Onondaga County Resource Recovery Agency (OCCRA)

Syracuse, New York

**O<sub>2</sub>Compost** worked closely with OCRRA (2009-Present) to develop a large-scale food waste pilot project at the Amboy Compost Facility near Camillus, New York. The focus of this project was to demonstrate the viability of composting using the aerated static pile method in extreme cold weather conditions. The project was closely monitored by OCRRA staff as well as the faculty of Cornell University. This pilot project was very successful and plans are being developed for converting the entire facility over to an aerated system.

## ► Beijing Hydraulic Research Institute

Beijing, China

In 2010, BHRI invited Peter Moon to Beijing to serve as a foreign expert. During his eight visits to China, Peter presented information on the topic of organic waste management to numerous government officials. The primary emphasis of this work was to assist with a solution for biosolids management, but a secondary project involved the design and construction of a small aerated bin compost system for food waste. The food waste is generated in a small community located two hours outside the city and the finished compost is used on local farms. This system is powered by solar energy.

## ► Philadelphia Prison System

Philadelphia, Pennsylvania

**O<sub>2</sub>Compost** was hired in 2011 to design an aerated bay compost system to process food waste from a minimum security facility. This compost system was intended to 1) reduce off-site disposal of source-separated organics in an effort to enhance sustainable practices; 2) serve as a demonstration site for other prisons; and 3) provide an opportunity for inmate training. The program is considered a resounding success, with plans to expand to process food waste generated by 9,000 inmates.

## Joint Base Lewis McChord (JBLM)

### ► Tacoma, Washington

In 2006, **O<sub>2</sub>Compost** completed an extensive pilot demonstration project in support of the U.S. Army's goal of zero discharge from military bases. The objective of this project was to evaluate the compostability of a wide range of organic waste materials, including biosolids, municipal green waste, food waste materials, horse manure, and petroleum-contaminated soils.

## St. John's University

### ► Jamaica, New York

St. John's has achieved a Gold Rating with the AASHE<sup>(1)</sup> STARS<sup>(2)</sup> Program, in part because of their efforts to: 1) collect food waste from university dining halls and coffee shops, 2) compost it on-campus, and 3) utilize the finished compost in sustainable landscape practices and in a student organic garden. By composting on-site, St. John's has reduced its carbon footprint by eliminating the need for the Department of Sanitation to transport food waste to a landfill, thereby significantly reducing both truck exhaust and the production of landfill greenhouse gases.

(1) Association for the Advancement of Sustainability in Higher Education

(2) Sustainability Tracking, Assessment and Reporting System



# Project Experience - Green Waste

## ► **Bailey Compost, LLC**

### Snohomish, Washington

As independent research, Peter Moon assisted Don Bailey of Bailand Farms in conducting a pilot test project (1994) to compost combined dairy and horse manure. This project evolved into a permitted municipal green waste / dairy manure composting facility that now processes in excess of 35,000 tons of green waste each year. Bailey Compost is heralded as a model on-farm compost facility that demonstrates the viability of decentralized composting in a large urban area. The development of this facility by **O<sub>2</sub>Compost** led to a 5-year training series of workshops for farmers and landscapers, sponsored by both King and Snohomish Counties. (*Refer to Operator Training below.*)

## **Onondaga County Resource Recovery Agency (OCRRA)**

### ► Syracuse, New York

**O<sub>2</sub>Compost** worked closely with OCRRA (2009-Present) to develop a large-scale green waste and food waste pilot project at the Amboy Compost Facility near Camillus, New York. The focus of this project was to demonstrate the viability of composting using the aerated static pile method in extreme cold weather conditions. The project was closely monitored by OCRRA staff as well as the faculty of Cornell University. This pilot project was very successful and plans are being developed for converting the entire facility over to an aerated system.

## **Fort Lewis**

### ► Tacoma, Washington

In 2006, **O<sub>2</sub>Compost** completed an extensive demonstration project in support of the U.S. Army's goal of zero discharge from military bases. The objective of this project is to evaluate the compostability of a wide range of organic waste materials, including municipal green waste, food waste materials, horse manure, biosolids, and petroleum contaminated soils.

## **Walla Walla County, City and State DOC**

### ► Walla Walla, Washington

**O<sub>2</sub>Compost** served as compost sub-consultant to Parametrix, Inc. for the design, construction and start-up of a compost facility located at the Walla Walla State Penitentiary (2003-2004). This project included facility sizing and conceptual layout, assistance with detailed design, bidding, and construction management. Following construction, **O<sub>2</sub>Compost** conducted on-site personnel training and follow-up process monitoring and troubleshooting services. The permit application for this project was the second to be prepared under the State's new solid waste handling regulations.

## **City of Quincy**

### ► Quincy, Washington

Peter Moon served as the lead engineer for the design, construction and start-up of a compost facility that was designed to process yard debris from Quincy and Moses Lake. This project included facility sizing and conceptual layout, permitting, construction assistance, operator training, and start-up.

# Project Experience - Biosolids

## ► Fort Lewis

Snohomish, Washington

**O<sub>2</sub>Compost** is currently conducting a pilot demonstration project in support of the U.S. Army's goal of zero discharge from military bases. The objective of this project is to evaluate the compostability of a wide range of waste materials, including biosolids, municipal green waste and food waste materials, as well as horse manure and petroleum contaminated soils.

## ► City of Grants Pass

Grants Pass, Oregon

**O<sub>2</sub>Compost** served as compost sub-consultant to Parametrix, Inc. for the design, construction and start-up of the Jo-Gro Biosolids Compost Facility (2000-2002). This project included site selection at the Merlin Landfill, facility sizing analyses, conceptual design, permitting, and assistance through construction and facility start-up. Follow-up services included personnel training and third party review.

## ► City of Port Angeles

Port Angeles, Washington

**O<sub>2</sub>Compost** served as compost sub-consultant to Parametrix, Inc. for the re-design of an existing biosolids compost facility located at the Port Angeles Landfill (2001-2003). This project included a thorough waste stream analysis for 5, 10 and 30-year time horizons. It also included technical assistance in designing a below-grade aeration system, equipment selection, construction review meetings, and personnel training.

## ► City of Everett

Everett, Washington

While under previous employment with E&A Environmental Consultants, Peter Moon provided technical assistance in conducting a pilot test project for the City of Everett (1991-1992). This project included design and construction of 18 test piles to evaluate various combinations of feedstock materials, representing both spring and fall conditions. It further included thorough monitoring of the piles for temperature, oxygen demand, carbon dioxide production, and potential for odor emissions.

## EKO Biosolids Compost

### ► Maui, Hawaii

In 2010, **O<sub>2</sub>Compost** served as a sub-consultant to Gershman, Brickner & Bratton, Inc. (GBB) to conduct a telephone survey and benchmark review of the EKO Biosolids Composting Operations in Maui, Hawaii. As part of a contract renewal process, the objective of this project was to compare EKO's Aerated Static Pile (ASP) composting methodology with other privately operated biosolids compost facilities located throughout the United States.

# Project Experience - Agricultural Manure

## ► Bailey Compost, LLC

Snohomish, Washington

As independent research, Peter Moon assisted Don Bailey of Bailand Farms in conducting a pilot test project (1994) which has evolved into a permitted municipal green waste / dairy manure composting facility that now processes in excess of 20,000 tons of green waste each year.

## ► Virginia Tech

Blacksburg, Virginia

In 2004, Virginia Polytechnic Institute completed construction on a new dairy sciences facility. This facility is utilized for research purposes and serves as a state-of-the-art manure handling equipment demonstration site. In support of the company Integrity Nutrient Control Systems of Chambersburg, Pennsylvania, **O<sub>2</sub>Compost** provided comprehensive training to the Vermont staff and operators.

## Wilcox Family Farms

### ► Roy, Washington

Wilcox Farms is a 4th generation family farm committed to providing the highest quality egg products. Since its start in 1909, Wilcox Farms has expanded its operation to include over 1.2 million free-range hens. As would be expected, their 500 acre farm could handle only so much land-applied manure. In 2002, **O<sub>2</sub>Compost** was asked to help develop a compost system to produce an OMRI Certified compost product. Today, Wilcox distributes all of their compost to agricultural clients, mostly organic farms located throughout western and central Washington.

## Mink Farm

### ► British Columbia, Canada

**O<sub>2</sub>Compost** provided system design, aeration equipment, and operator training for this project. Mink manure, which is very high in nitrogen, is removed from the hutches twice each year. In this system, the manure is mixed with horse manure and bedding to balance the C:N ratio of the initial mix. In the first batch of compost, all three criteria were successfully met.

## Balloun Hog Farm

### ► Dardanelle, Arkansas

Balloun Farms worked with **O<sub>2</sub>Compost** in 2010 to develop an ASP compost system to manage the manure from 1,500 hogs. The manure was mechanically separated and dewatered prior to composting to adjust the moisture content and provide a suitable feedstock. The finished compost is marketed and sold in both bulk and bags to local agricultural and residential end-users.

## ► Oregon Zoo

Portland, Oregon

From 2005-2006, **O<sub>2</sub>Compost** worked with the City of Portland to design an aerated system for two newly constructed compost buildings. This system include individual blowers to supply air to each of three compost bays. The air was delivered in prefabricated channels that were placed in the concrete slab. The channel design allowed for simultaneous drainage of compost leachate and supply of pressurized airflow. Peter Moon provided both on-site operator training to zoo staff as well as remote technical assistance through the first year of operation.

# Project Experience - Operator Training

Peter Moon is the President and founder of **O<sub>2</sub>Compost**. Between 1998 and 2003, Peter conducted training programs and workshops for farmers and landscapers, under contract with the Solid Waste Management Divisions of Snohomish and King Counties, Washington. These training programs were built on the foundation created by Peter's start-up of Bailey Compost in Snohomish, Washington. Bailey's is considered a model farm composting facility.

As a result of these county-sponsored training workshops, Peter has helped set up 12 composting systems for agricultural manure and green waste, located throughout the Puget Sound region. The success of these training workshops led to Peter's involvement with the Compost Facility Operator Training Class offered each October by the Washington Organic Recycling Council. He has served as one of the lead trainers since 2005, presenting on topics such as: 1) composting as a manufacturing process; 2) aerated static pile (ASP) composting principles; 3) compost facility design and permitting; and 4) process controls for odor management.

Since 2008, Peter has also conducted an all-day workshop on the Advancements and Applications of ASP Composting at the annual conference sponsored by The U.S. Composting Council. As a follow-up to this classroom workshop, Peter created a 3-day Hands-On ASP Workshop held each March and October at Bailey Compost. With this training program, the participants help to assemble a 150 cubic yard ASP system, and learn the basic principles of airflow and compost process management.

As mentioned earlier in this Statement of Qualifications, **O<sub>2</sub>Compost** helps a wide range of institutional and private sector clients set up pilot projects to test the ASP Method of Composting. Every pilot project includes an operator training component consisting of both on-site and remote training technical assistance. With many of these projects, **O<sub>2</sub>Compost** is asked to help with full-scale compost facility design and permitting.

In addition to pilot projects, **O<sub>2</sub>Compost** is frequently asked to perform third party inspections of permits and documentation. The overall objective is to work with the facility manager and staff to improve overall efficiency and "solve potential problems before they occur".

A few of **O<sub>2</sub>Compost**'s institutional and private sector training clients include:

- |   |                        |
|---|------------------------|
| • Onondaga County Resource Recovery Agency - Syracuse, NY | Food Waste             |
| • St. John's University - New York, NY                    | Food Waste             |
| • Philadelphia Prisons - Philadelphia, PA                 | Food Waste             |
| • Ulster County Resource Recovery Agency - Kingston, NY   | Food Waste             |
| • The Clark Foundation - Cooperstown, NY                  | Food Waste             |
| • Joint Base Lewis McChord (U.S. Army) - Tacoma, WA       | Food Waste / Biosolids |
| • Veteran Compost - Essington, MD                         | Food Waste / Manure    |
| • Beijing Hydraulic Research Institute - Beijing, China   | Biosolids              |
| • Jo-Gro Compost - Grants Pass, OR                        | Biosolids              |
| • Clear Water Technologies - Merlin, OR                   | Dewatered Septage      |

# Client References

O2Compost's client base includes government and municipal agencies, and private sector clients.

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## Attached Letters of Recommendation

**Don Bailey** - Bailey Compost  
**Kevin Barnes** - Bakersfield Public Works Department  
**Greg Gelewski** - Onondaga County Resource Recovery Agency  
**Laura Cassidy** - Philadelphia Prison System  
**Ned Foley** - Two Particular Acres  
**Mike Lord** - Envirofert  
**Justen Garrity** - Veteran Compost  
**Ron Norton** - Fort Lewis  
**Gregg Twehues** - Stone Barns Center for Food & Agriculture  
**Bob Sutherland** - The Clark Foundation  
**Michelle Bergkamp** - Ulster County Resource Recovery Agency  
**Nancy Larkin** - Barnside Mulch and Compost  
**Andy Bary** - Washington State University Extension

**Bailey Compost  
12711 Springhetti Road  
Snohomish, WA 98296  
360-568-8826**

March 9, 2016

To Whom It May Concern:

My name is Don Bailey of Bailey Compost in Snohomish, Washington and I am writing on behalf of Peter Moon and his company O2Compost.

We own and operate a fifth generation 350 acre family farm in the Snohomish River Valley just north of Seattle, Washington that began when my great-grandfather and his bride sailed over from England in 1913 and bought a 40 acre piece of land along the Snohomish River. My grandfather started dairy farming in 1918 which continued for the next 75 years along with growing a variety of cash crops such as peas, corn, wheat, and fresh market vegetables. Over the years and successive generations, the farm has grown to 350 acres of contiguous farm land which we actively farm today.

I have known Peter Moon for over 20 years. In the early 1990s we began looking for ways to diversify our farm activities to bring in more income for our struggling dairy operations. After conversations with Peter, we decided to give on-farm composting a try using our dairy manure and dairy bedding mixed with yard waste received from landscapers, private individuals, and yard waste received from the curb side recycling companies. Peter designed and helped set up an aerated static pile (ASP) system for composting that we still use today. Peter helped write up a plan of operations for us and secure the permits with all the required agencies. We ended up with a high quality compost product that became popular immediately with the many gardeners and garden clubs in our surrounding urban and suburban communities.

Our composting operation immediately brought in much needed dollars that helped supplement our struggling farming activities. Right from the start, our composting operation brought in steady and consistent income that continues to steadily grow. Today, the income we receive from yard waste tip fees and finished compost sales is essential to keeping our overall farm activities viable.

Besides selling compost to customers, we use our compost on our crop fields which saves us about 50% on our fertilizer cost. We notice that the increase in organic matter in the soil has led to noticeable improvement in plant growth and health. We really noticed a difference in our last several drought summers. The fields we were able to hit hard with compost did much better than the fields without compost.

Unlike other composting operations in our area, we have not had any odor complaints, thanks to the ASP method. The ASP method lets one use a smaller area for composting and also requires less machinery use because piles don't have to be turned.

We highly recommend Peter Moon and O2 Composting for operator training. Peter Moon is able to creatively come up with a tailor made plan of operation that fits ones particular circumstance and budget.

Sincerely,

Don Bailey





**B A K E R S F I E L D**

**PUBLIC WORKS DEPARTMENT**

**SOLID WASTE DIVISION**

**NICK FIDLER**  
**DIRECTOR • CITY ENGINEER**

**KEVIN BARNES**  
**SOLID WASTE DIRECTOR**

October 5, 2015

Re: O2 Compost Consultants

It is my pleasure to recommend Mr. Peter Moon of the O2 Compost as a valuable resource in the composting field. His thorough knowledge and his ability to design and adapt composting systems were a key part of a very important and successful team project. This project, which a diverse team of industry professionals collaborated for in 2012 through the Association of Compost Producers, was to test and document the air pollution control benefits of an aerated static pile system. Information on the project can be found on the San Joaquin Valley Air District's website under the Technology Advancement Program, or on the Association of Compost Producers website. Peter's role was crucial in designing the largest practical pile size for testing on a production scale, and for managing the dynamics of the compost process as the project progressed.

With a reliable compost system provided by Peter, the team was able to focus on other aspects of the project, which include odor and vector control, elimination of diesel equipment, space savings for compost facilities, and conservation of water used in the process. In addition to those benefits sought by the project, we have found another immense advantage of using aerated static pile composting in place of windrows, with respect to the new state regulations on physical contaminants in compost. This is because windrow turners tend to break up plastic and glass typically found in urban green and food waste, while aerated static piles do not. The result is improved product screening, since undesirable debris is left intact in larger pieces for the screen machines to effectively sort. As a result of this and the original purpose, the project has helped shape the future of composting in California. As the one who originated the project and recruited the team, I am grateful that Peter was able to participate.

Sincerely,

Kevin Barnes  
Solid Waste Director





OCRRA  
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(315) 453-2866 • Fax (315) 453-2872

Date: 30 Aug 2012

To: Whom It May Concern  
From: Greg Gelewski, Recycling Operations Manager

Subject: Recommendation of O2Compost and Peter Moon

The Onondaga County Resource Recovery Agency operates two award winning Compost Facilities; US Composting Council's Compost Program of the Year, 2010, Solid Waste Association of North America Composting Excellence Silver Award, 2011, and NY DEC Environmental Excellence Award, 2011. The Facilities are registered to handle 10,000 cubic yards of yard waste and 1,000 cubic yards of food wastes. The Agency serves a community of over 450,000 people with waste-to-energy, waste reduction, recycling, and composting solution.

OCRRA was first introduced to Peter Moon and O2Compost early in 2008 when the Agency was researching options to expand its composting operations and focus on a cost effective way to incorporate larger volumes of food wastes into a small yard waste facility. From there Peter Moon and O2Compost were contracted to help the Agency to develop a successful "Pilot Project" that highlighted the efficiencies and volumetric throughput of Extended Aerated Static Pile Composting. As one can see from the awards and some publication recognition, Peter Moon and O2Compost have been instrumental to OCRRA's Composting success.

Peter Moon and O2Compost's staff have worked closely with the Agency since 2008, developing the "Pilot Project", conducting on-site staff training and Board and Community presentations, program evaluation, professional review of third-party facility designs and material processing for future expansion, trouble-shooting and consultation. Peter Moon's work with OCRRA and expertise in EASP composting technologies has enabled the Agency to cost effectively design a facility that will have the capacity to process 10,000 tons of food wastes and over 50,000 cubic yards of yard wastes without changes to the facilities current footprint.

Working with Peter Moon and O2Compost has been an exceptional experience and the Agency owes much of its current and future composting successes to their work and training abilities. I would recommend any one looking to improve their operation to reach out to Peter Moon and the O2Compost staff; it is an opportunity for SUCCESS!

Sincerely;

Greg Gelewski  
OCRRA, Recycling Operations Manager





**CITY OF PHILADELPHIA**  
**PHILADELPHIA PRISON SYSTEM**  
**OFFICE OF THE COMMISSIONER**

7901 State Road  
Philadelphia, PA 19136-3407

(215) 685-8201

FAX (215) 685-8577

E-Mail: [louis.giorla@prisons.phila.gov](mailto:louis.giorla@prisons.phila.gov)

Website: [www.phila.gov/prisons](http://www.phila.gov/prisons)



STEPHEN A. MADVA, Esq.  
Board Chairman

LOUIS GIORLA  
Commissioner

**TO WHOM IT MAY CONERN:**

The Philadelphia Prisons houses over 9,000 inmates throughout our Northeastern Philadelphia campus, thus generating over a quarter a million dollars of solid waste a year. We have conducted food waste sorts on several of our facilities and it is estimated that we can reduce our solid waste costs as much as seventy percent, not to mention the lessening the effect on the environment. Upon generating those estimates we contacted Peter Moon of O2Composting. We felt that O2Composting had one of the best reputations in the industry. O2Composting has successfully designed the Philadelphia Prison System's newly implemented compost project. With our current pilot we are diverting over 500 lbs a day of food waste out of the solid waste stream. That is for just one facility, which currently houses approximately 600 inmates and staff. We plan to expand to our other facilities in the Spring of 2013.

O2Composting has been involved in every step of the development of our compost program. Their technical support is currently ongoing. O2Composting has been very sensitive to our requirements and diligent in finding solutions necessary to deploy and satisfy our requirements while working within the constraints and challenges involved in a correctional environment.

I am very satisfied with their delivered performance and I highly value their continued technical support throughout every phase of Philadelphia Prison System's compost project. I would not hesitate to recommend O2Composting consulting services. The quality of the work, the professionalism displayed, and expertise involved has proven to be superior and invaluable to the success of our program.

Sincerely,

Laura R. Cassidy,   
Executive Assistant  
to the Commissioner  
7901 State Road 3rd Fl  
Philadelphia PA 19136  
phone (215) 685-7887 (215) 685-7894 fax





December 2, 2012

Peter Moon, P.E., Owner

**O2 Compost**

P.O. Box 1026

Snohomish, WA 98291

**RE: Thank You**

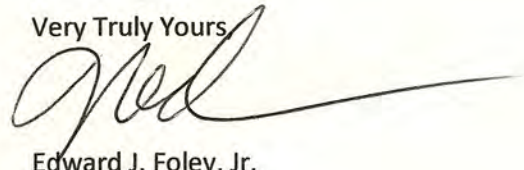
Dear Peter:

As you may recall, Two Particular Acres (TPA), is a small compost producer operating in the suburbs of Philadelphia. We began producing compost more than a decade ago with a turned windrow system on two acres of our farm. In 2006 after a year or more of discussions with you and your staff regarding our efforts to improve quality and reduce costs, we made a special trip to Snohomish and the surrounding Seattle area to talk with your clients and see your installations and their operations first hand. Before the trip concluded we ordered the O2 system and have not looked back since.

The O2 ASP system is simply the best compost process for odor sensitive areas and the most cost effective method for producing quality compost. The system costs less than 1/3 the price of a small tractor powered turner, can process four times the volume on the same footprint and produces a tiny fraction of the odors associated with turning. The real value of the O2 ASP system however lies with the level of service provided by you and your staff. Always accessible, infinitely knowledgeable and obsessed with insuring quality compost production, your staff made the difference in our transition to high quality cost effective compost production to a degree we could never have achieved ourselves.

Thank you for all your efforts. TPA would not be the compost producer it is today without the dedication of you and your staff.

Very Truly Yours



Edward J. Foley, Jr.





15 September 2015

To whom it may concern,

Re: Letter of Recommendation for O<sub>2</sub>Compost  
Odour Mitigation at Envirofert's Food Waste Composting Facility  
Auckland, New Zealand

My name is Mike Lord and I am the CEO of Envirofert, a recycling and composting company based in Auckland, New Zealand (on the border of Waikato in the upper North Island). We are currently composting approximately 100,000 m<sup>3</sup> of garden waste and 7,500 m<sup>3</sup> of food waste per annum.

Before I joined the company in 2013, Envirofert was composting garden waste using traditional windrows turned with an excavator. In 2012 the company started composting food waste as well. To better control the process they developed a negative pressure aeration system to provide oxygen and control the stronger odours that composting food waste produced. It became quickly apparent that the negative air system was too small for the volume of materials being composted, as it was not coping with the stronger odours produced during the composting process.

Odour complaints began to occur on a regular basis from neighbours and we fell under the watchful eye of our regulators. Shortly after I started, I attended the 2013 US Composting Council Conference in Florida. My reason for attending was to gain a better understanding of "controlling composting odours" and to attend a composting workshop titled "Advancements in Aerated Static Pile Composting". The lead presenter of the workshop was Mr. Peter Moon with O<sub>2</sub>Compost.

It became quickly apparent to me during the workshop that the ASP Extended Wedge System that O<sub>2</sub>Compost had developed was exactly what we needed at our site for the following reasons.

It would be:

- Easy and quick to integrate within our existing composting operation;
- Decrease our composting footprint; and speed up our processing time; and
- Thereby increase our flow-through capacity.
- It would also be very affordable to retrofit our existing facility;
- Decrease our month to month operating costs; and
- Most importantly, it would give us far greater ability to reduce odours and neighbour impacts.



After the workshop I discussed this with Peter and he agreed to come to New Zealand and help us develop and implement a positive air extended wedge composting system. Peter conducted both “classroom” and practical hands-on training sessions with our staff. We also invited our regulators to have a session with Peter to increase their knowledge of composting and to discuss the proposed changes and the expected outcomes from using an ASP Extended Wedge Method.

Since we have implemented the ASP system, the issues we were having with odour incidences beyond our boundary have decreased significantly. The use of positive aeration combined with a biofilter cover layer has greatly decreased odour, both on and off site. The combination of developing standard operating procedures, providing ongoing staff training and establishing a focus on product quality have resulted in greatly improved site performance and profitability.

All composting facilities have the potential to create odour but if you get the basics right, have a tried and proven system (ASP Extended Wedge) and stick to that formula, you will dramatically decrease the potential to release objectionable odour beyond your composting boundary.

Furthermore the ASP system has greatly reduced our operational costs by eliminating the need to turn compost piles on a weekly basis, and by speeding up our rate of composting. This coupled with the backup and ongoing support of Peter Moon and O<sub>2</sub>Compost has proven to be an outstanding investment of our time and resources.

I have regular conversations and correspondence with Peter regarding our composting process. I have recently contracted with him to come back to New Zealand this November to give further training to our staff, audit our composting process and to discuss our future plans for site expansion.

Peter has transformed our operation, and has helped us resolve our odour issues. I have no hesitation recommending Peter and the services he offers.

Yours faithfully,

Mike Lord  
CEO  
Envirofert Ltd



# VETERAN COMPOST

January 31, 2013

To Whom It May Concern:

It is a sincere pleasure to write this letter of recommendation for Peter Moon and O<sub>2</sub>Compost.

I am the Founder and President of Veteran Compost, a for-profit food waste composting business located in Central Maryland. We are currently the only vertically integrated composter in Maryland, and operate the largest food waste composting facility in the state. We are also the only composting site in the state to retain its permit and operate complaint free for over 3 years.

When I was starting my business in 2010, I researched a number of composting options (windrows, ASP, etc.). In the process of doing my due diligence, I was introduced to O<sub>2</sub>Compost by another commercial composter who swore by the system. After speaking with Peter and seeing an Aerated Static Pile System in operation, I decided that I would purchase his design and support package. It was a crucial investment in starting Veteran Compost.

I had no commercial composting experience when I started my facility. The designs and support I got from Peter and his company helped me to “get smart” very quickly. Peter and his staff were always available to answer my questions and after a few months of experimentation with just horse manure, we started adding food waste to our compost piles. Since then, our food waste collection service has grown to be an around the clock operation. We have increased throughput every month since we started. The O<sub>2</sub>Compost system has been flexible and scalable enough to support our exponential growth.

I am certain that my business would not have grown so quickly and vibrantly without the help of Peter Moon and O<sub>2</sub>Compost. I have watched composting facilities around the state open and close because of permit violations. Meanwhile, my O<sub>2</sub>Compost system has operated odor and incident free for almost three years (and at the fraction of the cost of competing ASP systems).

It is my honor to recommend Peter and O<sub>2</sub>Compost. His expertise and support have been instrumental to my success. If you have any questions, you may contact me at any time.

Sincerely,

Justen Garrity

**328 Bush Chapel Rd  
Aberdeen, MD 21001**

**Phone: 410.935.6404**

**Email: [info@veterancompost.com](mailto:info@veterancompost.com)**

April 13, 2009

To Whom It May Concern:

It is a pleasure to provide you with this letter of recommendation for Peter Moon and his company, O2 Compost.

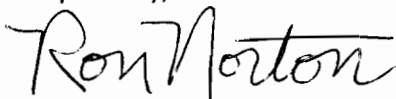
In my present capacity as Solid Waste and Recycling Program Manager for Fort Lewis in Washington State, I have had the opportunity to work with Mr. Moon on a professional basis. As a contractor working for Fort Lewis Public Works it is my opinion that Mr. Moon and his company provided excellent project development and management services in the study, development and implementation of a successful composting operation at a large-scale military installation.

The Fort Lewis composting operation serves a population of approximately 50,000 people and includes a variety of organic-based wastes such as biosolids, green waste, horse manure, chipped land clearing and storm debris, and food waste. Mr. Moon and his sub-consultant Cascadia Consulting Group, successfully coordinated and managed the Fort Lewis waste composition study that was fundamental in determining the feasibility of our composting operation. He and his staff also worked closely with Fort Lewis recycling program staff to educate, train, and provide hands on instruction in how to properly operate and maintain a composting facility. Mr. Moon regularly presented his findings and project status reports to Fort Lewis Public Works management in a professional, personable and highly competent manner.

Fort Lewis has been operating the permitted composting facility developed by Mr. Moon and O2 Compost for the last four years and has plans to expand this very successful operation this next Fall. The Fort Lewis composting operation has received positive recognition and accolades from the Department of the Army's western region installation command. As a result of this recognition the Fort Lewis composting program was selected as a best management practice for food waste collection and composting at all installations under the western region installation command.

It is my honor to highly recommend Mr. Peter Moon and O2 Compost to you and your organization for all your compost project needs. The expertise, attention to detail, and follow-up customer service provided by Mr. Moon and his company were excellent and instrumental to the success of our program. Please contact me directly at (253) 966-6452, if you have any further questions in regards to this letter of recommendation. Thank you.

Respectfully,

A handwritten signature in black ink that reads "Ron Norton". The signature is written in a cursive, flowing style with a large initial "R".

Ron Norton  
Solid Waste and Recycling Program Manager  
Fort Lewis Public Works/ Versar  
P.O. Box 339500 MS 17  
Fort Lewis, WA 98433-9500



August 27, 2012

To Whom It May Concern,

As the Director of Nutrient Management for the Stone Barns Center for Food and Agriculture a nationally recognized education center for young farmers, I am responsible for the sustainable systems at the Stone Barns Center. We have worked with the O2Compost group for over four years and have had a very positive experience throughout this time.

The Stone Barns Center is an eighty-acre sustainable farm with over 100,000 visitors a year. Our mission is to educate young farmers, children and adults about growing healthy food through the use of natural and sustainable practices. Part of this requires us to compost an estimated 156,000 pounds of food waste, poultry offal's from our meat processing center and farm mortalities. We researched many different ways to compost and decided upon the O2Compost system. My first experience with Peter Moon was a very positive one and it has not changed since we first met.

During the design phase, I explained to Peter I had several challenging substrates to work with and the composting area was to be located within close proximity to our café, restaurant and adjoining public areas. All of this said, we did not want any issues with the composting area. We also wanted to be able to use the compost system as a teaching tool. He assured me we would be able to achieve our goals with his system - and we did.

Today it is the focus of compost classes that are taught here and the finished product is utilized on the property as a source of nutrients that would otherwise be carted away. This has converted a considerable expense into a cost savings since we don't have this heavy material in our weekly trash pickup.

It has been a true pleasure to work with Peter Moon and the O2Compost team and I recommend them without reservation.

Respectfully,

Gregg Twehues  
Director of Nutrient Management  
Stone Barns Center for Food and Agriculture  
630 Bedford Road  
Pocantico Hills, New York 10591  
Telephone: (914) 366-6200 ext. 119  
Cell: (914) 774-2208  
Fax: (914) 366-6200  
Email: [greggt@stonebarnscenter.org](mailto:greggt@stonebarnscenter.org)

*The Clark Foundation*  
*P.O. Box 510*  
*Cooperstown, N.Y. 13326*

Bob Sutherland  
Mohican Farm Manager  
Clark Foundation  
Cooperstown, New York, 13326

*Telephone: (607) 547-2561*  
*Facsimile: (607) 547-2585*

September 12, 2012

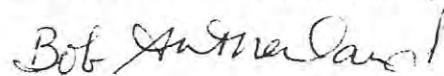
To Whom it May Concern,

We are approaching our first anniversary of food waste composting at Mohican Farm. We are part of a not for profit organization whose mission is to promote sustainable practices within our organization and our community. One of our projects is to take the food waste, both pre and post-consumer, from The Otesaga Hotel. This totals approximately 150-180 tons per year, with the majority coming during a 4 month period from June-September. Our food waste is primarily mixed with wood chips but we also add garden waste including grass clippings, leaves, hedge trimmings and small amounts of shredded paper.

Peter Moon and his colleagues at O2Compost have designed a system that is appropriately sized for our needs, blends in with our other structures at the farm, and best of all, works great!!! We found that Peter and his staff are knowledgeable, responsive, pleasant to work with and accommodating for our specific needs. Perhaps, the nicest feature of their services is that they just don't sell you the design and then you are on your own. They have provided guidance throughout the whole year and call from time to time to make sure everything is going smoothly.

We are very happy with the services that O2Compost have provided over the past 2 years and would not hesitate in recommending them to you. Feel free to contact me at 607-437-6826 or [rtsutherland.mohicanfarm@gmail.com](mailto:rtsutherland.mohicanfarm@gmail.com)

Best Wishes and Good Luck with you Composting Efforts,



Bob Sutherland



# ULSTER COUNTY RESOURCE RECOVERY AGENCY

## **Board Members**

Leon Smith, Chairman  
Catherine Nilsen, Vice Chairman  
Albert Teetsel, Treasurer  
Charles Landi, Member  
Dominic Tagliaferro, Member

ucrra@ucrra.org  
www.ucrra.org



*Executive Director*  
**TIMOTHY B. ROSE, P.E.**  
999 Flatbush Road  
P.O. Box 6219  
Kingston, NY 12402

## **Staff Members**

Timothy DeGraff, CPA, Controller  
Charles Whittaker, Operations Manager  
Thomas Briggs, Compliance Officer  
Michelle Bergkamp, Recycling Coordinator

(845) 336-0600 Phone  
(845) 336-4129 Fax

April 8, 2014

O2Compost  
Peter Moon, P.E.  
PO Box 1026  
Snohomish WA 98291

To Whom It May Concern:

Organics diversion is the cornerstone of our waste diversion effort at the Ulster County Resource Recovery Agency. Last year, Ulster County generated over 160,000 tons of municipal solid waste that was transported to landfills for disposal near Syracuse, New York, 250 miles away. At a time when many recycling programs have hit a plateau, like that of Ulster County, food waste is commonly the next segment of the solid waste stream to be tapped for diversion. According to the EPA, food waste accounts for an estimated 12.5 percent of the municipal solid waste stream nationwide. Food waste diversion therefore was the next logical step towards increasing the County's overall waste diversion.

Peter Moon and his company O2Compost were essential in both the development and the success of the County's new organics diversion initiative.

We first learned about O2Compost from working with our counterpart in central New York, the Onondaga County Resource Recovery Agency (OCRRA), who also worked with O2Compost. OCRRA recently completed a pilot test program utilizing aerated static piles to compost green waste and pre-consumer food waste with excellent results. Since the inception of the OCRRA pilot composting program in 2007; the staff perfected their processing method and marketing strategies and most importantly, created a quality, stable compost product for the community.

The OCRRA program achieved maximum system throughput of their large-scale pilot project and has recently completed construction of a full-scale composting facility utilizing the same method, extended aerated static pile composting.

Given this success of OCRRA's Pilot Project, we contacted Mr. Moon and decided to move forward with conducting a food waste composting pilot project for Ulster County. The food waste composting pilot project has been a cost-effective system that optimizes recycling and reuse opportunities for our community.

In Ulster County, food waste is being turned into a valuable compost product using the extended aerated static pile method and a system designed by O2Compost. The Agency is now diverting food waste from landfill disposal, while creating a nutrient-rich material highly valued by gardeners, farms, nurseries and other businesses that contribute to the vitality of our local communities.

The Agency's operation is regulated by the New York State Department of Environmental Conservation and is registered to accept and process 1,000 cubic yards of food waste and 10,000 cubic yards of yard waste at this time. The pilot project will carefully evaluate all aspects of collecting and processing food waste from large quantity generators in Ulster County and determine the feasibility of a much larger Ulster County composting operation.

The waste diversion initiative and the success of the composting pilot project would not have been possible without the facility design, organics management expertise, cooperation and professionalism that Mr. Moon and the O2Compost team provided to the Agency throughout all stages of the food waste composting pilot project including; planning, design, development and construction.

Without hesitation, the Ulster County Resource Recovery Agency recommends that Mr. Peter Moon and the O2Compost team to other communities that are considering the development of organics management projects, especially those relating to food waste composting.

Sincerely,

Michelle Bergkamp  
Recycling Coordinator



*991 Haldeman Road, Schwenksville, PA 19473 / (610) 287-8880*

6 September 2012

To Whom It May Concern:

I am happy to have the chance to recommend O2Compost to other organizations considering on-site composting. My name is Nancy Larkin. I founded Barnside Mulch and Compost in 2000. We are a permitted facility and are the dedicated compost site for thirteen different municipalities in Southeastern Pennsylvania, their residents and businesses. Over the years we have composted primarily leaves with some yard waste.

In 2010 we found ourselves in some trouble with off-site impacts from odors. At that time, the Pennsylvania Department of Environmental Protection (DEP) reviewed our site and determined that it was suitable for food waste. What no one anticipated was the neighbors' firm conviction that we were now going to become a landfill. After we developed some odor issues, I contacted Peter Moon of O2Compost to help us resolve the problem, and this one decision saved our business.

Throughout our twelve years of operation, we used the turned windrow method of composting. Peter's forced aeration compost system, combined with his technical support, enabled us to resolve our odor impacts as well as consolidate our processing area, reduce our labor and dramatically reduce our fuel expense.

His commitment to always being available to provide technical assistance was also tested. As our neighbors' continued to fight us and DEP continued to put last minute demands on us, Peter was called on to help us at all times of the day and night. I originally had reservations about working with someone so far away from us in Washington State, but that turned out to be a blessing given the 3-hour time difference. With the telephone, internet and digital photographs, it became a very easy working relationship.

It is a pleasure for me to have this opportunity to strongly recommend Peter Moon and O2Compost to anyone setting up a new compost system or needing to resolve operating issues at an existing facility. With a lot of trial and error you can learn how to compost out of a book but you cannot get the experience, dedication and support anywhere better than what Peter offers. Peter and O2Compost are the best and are exactly what this industry needs.

Sincerely,

Nancy Larkin

Owner: Barnside Mulch and Compost

18 May 2015

To Whom It May Concern

I have worked with the WSU, WORC, and Ecology Compost Operator Training class for over 15 years. This program provides training in proper operation of compost facilities. As part of this program we discuss proper composting techniques. We also discuss all types of feed stock from on-farm manure materials through fish carcasses as compost feed stocks.

The class covers several sections on odor management including the biology of odors and managing composting for odor control. One method of odor control covered in the composting class discusses the use of an aerated static pile for odor control. The aerated static pile composting method, when managed properly, can be a very effective method of composting. During the class we emphasize the need to monitor and manage fish carcasses quite closely to avoid odor issues when composting these types of feed stocks. The use of bio-filters is also emphasized as a method of odor management. These can be either in place as a covering in aerated static piles or as a standalone process.

Peter Moon has been a core instructor for the class for over 15 years. Jerry Katt has taken the class and continues to participate in the class by providing his insight into proper management of composting fish carcasses. The Compost Operator training class spends a fair amount of time discussing odor management and its importance. If you have any questions about the content of the class or of Peter Moon and Jerry Katt's ability to properly compost fish carcasses, please don't hesitate to contact me.

Sincerely,



**Andy Bary**  
**Senior Scientific Assistant**

2606 W Pioneer Way E., Puyallup, WA 98371-4998  
253-445-4526 • Fax: 253-445-4571 • TDD: 1-800-833-6388