Biosolid Management Plan
For
City of Waldport
April 23, 2018

EPA #: OR-003405-3
File Number: 107816
Permit Number: 101149

James Ledbetter, Lead Operator
City of Waldport
P.O. Box 1120
Waldport OR 97394
541-563-2325

Activated Sludge-Sequencing Batch Reactor (SBR)
Lincoln County
Treatment: II
Collections: II

INTRODUCTION

City of Waldport (population approximately 3294) owns and operates a municipal sewage collection and treatment system (built 1993) under National Discharge Elimination system (NPDES) permit number (101149). Wastewater processed by the sewage treatment works is principally of domestic origin from the City of Waldport. Septage is not accepted at this wastewater treatment facility. There are no industrial discharges to the City of Waldport Facility, which require regulation under a local pretreatment permit. Treated effluent from the treatment plant is discharged to Lint Slough, which is part of Alsea Bay. This biosolids management plan, as required by the NPDES permit, outlines the liquids and solids processes at the facility, how biosolids are managed to meet federal and state requirements, and how the biosolids land application program is operated. The City of Waldport biosolids management plan was originally approved by the Oregon DEQ of Environmental Quality (DEQ) on 5/29/2003 and is being updated at this time for permit renewal.

WASTEWATER TREATMENT FACILITY

The City of Waldport owns and operates an Activated Sludge-Sequencing Batch Reactor, wastewater treatment facility and sewage collection system. Flows received are primarily domestic and commercial sewage with no significant industrial wastes sources. Currently the plant serves the residents and businesses of the City of Waldport.

The City completed an upgrade of the wastewater facility in 1994. The upgrade was to construct two Sequencing Batch Reactor (SBR) secondary treatment units. The SBR treatment is five-stage reactor tank activated sludge process. The five stages are fill, react, settle, decant, and solids wasting.

The Design Average Dry Weather Flow (DADWF) of the facility is 0.36 Million Gallons per Day (MGD). The facility consists of headworks with 6-ft. sidehill screens and vortex grit removal. This process step removes 95% of particles 100 microns and larger. The influent composite sampler is located just after the grit removal system. The influent then passes into one of two secondary treatment basins. This step is known as the Fill phase. The influent is mixed with the mixed liquor that was settled during the last phase, until the required depth is reached. Air is then added to the basin to encourage biological growth. While still under aeration, oxidation of organics occurs during the React phase. During the Settling phase, mixing and aeration are stopped to allow solids to settle. After settling, the Decant stage begins. Effluent is decanted from the reactor tank, sent through a channel of ultraviolet lights to be disinfected, killing off the majority of remaining organisms, ultimately being discharged to Lint Slough. A portion of the waste activated sludge (WAS) is sent to the digester in the Solids Wasting stage. The remaining WAS is

retained to begin the cycle anew.

Solids Treatment Processing:
Waste activated sludge (WAS) is wasted to one of two aerobic digesters that have a capacity of 48,000 gallons each and provide 23-day storage @ 10,000 GPD WAS (1-% solids). The facility has a sludge storage stabilization pond (3.2 million gallons), which could add another 18 days detention at ambient temperatures.

There are two (2) potential end routes for biosolid from this facility and they are: 1) direct irrigation/land application of digester biosolid and 2) direct irrigation of biosolid after 24-hour alkaline stabilization process.

Solids Storage Structure:
There is an 180,000 gallon sludge stabilization storage-pond at this facility.

Septage Receiving Facility:
No septage (0 gallons per year) is received at City of Waldport' facility.

Pretreatment Program:
Not applicable.

Solid Treatment Processes:
The EPAs 40 CFR parts 503 and the DEQs Oregon Administrative Rules (OAR) 340-50 allow permittees to use EPA approved alternatives to satisfy Class A and B biosolid pathogen or vector attraction reduction criteria. The permittee must notify the DEQ in writing and get approval prior to any process change that would utilize pathogen reduction or vector attraction reduction alternatives other than their primary reduction alternatives contained in this management plan. The permittee must also certify that the alternatives used are EPA approved and that sampling and monitoring conforms to the 40 CFR 503 and OAR 340-050 regulations.

PATHOGEN REDUCTION
Under 40 CFR Part 503 and Oregon Administrative Rules Chapter 340, Division 50, pathogen reduction and vector attraction reduction for biosolids must be met prior to land application. Vector attraction reduction requirements can also be met at the time of land application if biosolids are injected below the surface of the land or incorporated into the soil within 6 hours after application to the land. Biosolids are categorized as Class A or Class B depending on the method used to determine pathogen reduction. Biosolids may also be classified as exceptional quality (EQ) if the product meets: pollutant concentration limits in 40 CFR Part 503, one of the Class A pathogen reduction alternatives in 40 CFR §503.32(b)(1), and one of the vector attraction reduction options in 40 CFR §503.33(b)(1) through (8). To meet regulatory requirements, pathogen reduction must be met before or at the same time that vector attraction reduction is achieved.

The City of Waldport will certify in writing that Class B pathogen requirements and vector attraction reduction requirements are met. The City of Waldport will also notify the DEQ in writing and obtain written approval prior to any process change that would use a pathogen reduction or vector attraction reduction method other than what is specified in this biosolids management plan.

To meet the 503 part regulatory requirements pathogen reduction must be met before vector attraction reduction or at the same time vector attraction reduction is achieved. This facility is capable of achieving Class B Biosolid criteria for beneficial land application.

Class B Biosolid:
Class B biosolid can be met by using one of three alternatives, the two primary alternatives used by this facility are
503.32(b) (2) Alt. 1) Monitor sewage sludge for fecal coliform, and
503.32(b) (3) Alt. 2) Use Process to Significantly Reduce Pathogen (PSRP).

503.32(b) (2) Alt. 1) Monitor sewage sludge for fecal coliform requires that seven samples of treated sewage sludge (biosolid) be collected and that the geometric mean fecal coliform density of these samples be less than 2 million MPN per dry gram biosolid (dry weight basis).

503.32(b) (3) Alt. 2) Use Process to Significantly Reduce Pathogen (PSRP) 503.32(b)(3) considers sludge treated in one of the PSRPs listed in appendix B of the Part 503 to meet Class B biosolid criteria for pathogen reduction.

For this facility the following PSRPs can be used with prior DEQ review and written approval:

- 1 aerobic digestion, sludge is treated in the presence of air for a specified residence time at a specified temperature. Values of the mean cell residence time and temperature shall be between 40 days at 20 (68C) and 60 days at 15C (59F), and
- 5 sufficient alkaline stabilization agent is added to the sewage sludge to raise the pH of the sewage sludge to 12 for 2 hours of contact (mixed).
-

503.32(b) (5) Site Restrictions:

(i) Food crops with harvested parts that touch the sewage sludge/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of sewage sludge.

(ii) Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for four months or longer prior to incorporation into the soil.

(iii) Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than four months prior to incorporation into the soil.

(iv) Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge.

(v) Animals shall not be grazed on the land for 30 days after application of sewage sludge.

(vi) Turf grown on land where sewage sludge is applied shall not be harvested for one year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the permitting authority.

(vii) Public access to land with a high potential for public exposure shall be restricted for one year after application of sewage sludge.

(viii) Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.

VECTOR ATTRACTION REDUCTION
(VAR) requirements of 40 CFR §503.33(b)(1):

Under the EPAs and the DEQs regulations 38% volatile solid reduction criteria is the primary method of showing Vector Attraction Reduction. There are alternative volatile solid reduction methods that are deemed equivalent.

To meet the biosolid vector attraction reduction requirements Waldport uses an aerobic digester followed by an anaerobic storage pond. Waldport may show VAR by Option 1 503.33(b)(1) from the digester treatment through sludge removal from the storage pond, Option 1 503.33(b)(2) from anaerobic sludge from the sludge storage pond.

Option 1 503.33(b)(1)

The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38 percent (see calculation procedures in "Environmental Regulations and Technology—Control of Pathogens and Vector Attraction in Sewage Sludge", EPA–625/R–92/013, 1992, U.S. Environmental Protection Agency, Cincinnati, Ohio 45268).

Option 2 503.33(b)(2)

When the 38 percent volatile solids reduction requirement in §503.33(b)(1) cannot be met for an anaerobically

digested sewage sludge, vector attraction reduction can be demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 degrees Celsius. When at the end of the 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved.

Option 3 503.33(b)(3)

When the 38 percent volatile solids reduction requirement in §503.33(b)(1) cannot be met for an aerobically digested sewage sludge, vector attraction reduction can be demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20 degrees Celsius. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 15 percent, vector attraction reduction is achieved.

Waldport may also meet vector attraction reduction by other following VAR options:
The following Vector attraction Reduction options can be used with prior DEQ review and written approval:

Option 4 503.33(b)(4)

The specific oxygen uptake rate (SOUR) for sewage sludge treated in aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20 degrees Celsius. Liquid aerobic sewage sludge (must be 2% or less solids) from aerobic processes run at temperatures between 10 to 30ºC. This applies to sludge coming straight out of the aerobic digesters; this does not apply to the sludge stored in the sludge storage pond. If the total solids are above 2% then the SOUR test cannot be used; diluting thick sludge to get below 2% TS is not allowed.

Option 6 503.33(b)(6)

The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for two hours and then at 11.5 or higher for an additional 22 hours.

Addition of sufficient alkali to raise the pH to at least 12 at 25ºC (77ºF) and maintain a pH 12 active mix for 2 hours and a pH 11.5 for 22 more hours active mixing not required.

Option 7 503.33(b)(7)

Percent solids 75% prior to mixing with other materials Sewage sludges treated by an aerobic or anaerobic process (i.e., sewage sludges that do not contain unsterilized solids generated in primary wastewater treatment)

Option 10 503.33(b)(10)

Sewage sludge is incorporated into the soil within 6 hours after application to land or placement on a surface disposal site, except Class A sewage sludge which must be applied to or placed on the land surface within 8 hours after the pathogen reduction process. DEQ review and written approval required prior to incorporation.

BIOSOLIDS CHARACTERISTICS

Monitoring:
Under the 40 CFR Part 503, City of Waldport produce less than 290 metric dry tons of biosolids and is required to sample biosolid once a year. Frequency of monitoring depends on the amount biosolid generated that is marketed to be sold or given away, land application and surface disposal. Frequency depends the amount on bulk biosolid applied to the land, or the amount of sewage sludge received by a person who prepares biosolid that is sold or given away in a bag or other container for application to the land (dry weight basis), or the amount of biosolid (excluding domestic septage) placed on a surface disposal site.

Sampling:
Digester Sample location: Sample port on discharge line of digester to storage pond. Number and type of sample taken per day: Composite of discrete samples collected throughout the sampling period.

Sample storage and transport: Samples are stored at 4 degrees C in ice chest or refrigerator. Samples are transported

in ice chest to maintain temperature during delivery to laboratory. Pathogen samples are delivered to lab within 1 hour of sample collection.

Sample analysis method: EPA 9045; EPA 160.3;EPA 160.4; SM 4500-NH3B; EPA 353.2; EPA 365.3; EPA 351.3; SW-846 7060; SW-846 6010; SW-846; SW-846 7481; SW-847 7471; SW-846 7740; SM 18, 9221E.1; SM 18:9260D.1; ASTM D 4994-89; EPA 600/1-87/014; EPA 8240; EPA 1613; EPA 8270; EPA 1613B; EPA 1668 (may include one or more of the referenced methods).

Samples collected and analyzed will be representative of the biosolids to be land applied. Quality control measures and procedures will be implemented for microbiological tests to verify precision and accuracy.

All monitoring and reporting will be conducted in accordance with the City of Waldport NPDES permit. The monitoring frequency is based on the amount of biosolids generated that is land applied, or marketed to be sold or given away. Based on 40 CFR §503.16, Table 1.

Pollutant Characteristics:

The following table is a representative biosolids analysis for pollutant characteristics. This data and all previous data indicate that pollutant concentrations for all regulated pollutants have been met.

Parameter	Biosolids Analytical Result (mg/kg)	Sample Date	40 CFR §503.13(b)(3) Pollutant Concentration Limits (mg/kg)
Arsenic (As)	7	6/19/2017	41
Cadmium (Cd)	5	6/19/2017	39
Chromium (Cr)	0	6/19/2017	-
Copper (Cu)	337	6/19/2017	1500
Lead (Pb)	71	6/19/2017	300
Mercury (Hg)	1	6/19/2017	17
Molybdenum (Mo)	9	6/19/2017	-
Nickel (Ni)	27	6/19/2017	420
Selenium (Se)	9	6/19/2017	100
Zinc (Zn)	952	6/19/2017	2800

Nutrient Characteristics and Other Parameters:
The following table is a representative biosolids analysis for nutrient characteristics and other parameters.

Parameter/measurement unit	Biosolids Analytical Result mg/L	Sample Date
Total solids, percent	3.7	6/19/2017
TKN, percent	6.9	6/19/2017
NO_3-N, percent	10	6/19/2017
NH_4-N, percent	5,900	6/19/2017
Phosphorus (P), percent	1.9	6/19/2017
Potassium (K), percent	2.1	6/19/2017
pH, standard unit	6.8	6/19/2017

All of biosolids generated by Waldport are beneficially used through land application. The following biosolids land application plan outlines agronomic application rate and site crops, where biosolids are land applied, site selection criteria for a new site, and site and crop management practices.

BIOSOLIDS LAND APPLICATION PLAN
City of Waldport treatment works utilizes an activated sludge process. The treatment facility wastes activated sludge form the secondary clarifier to the aerobic digesters. The sludge under goes 3 to 4 months of digestion at ambient temperatures prior to removal, a volatile solids reduction calculation and alkaline stabilization are performed by the operators at this time. For the year 2017 City of Waldport generated and land applied 29 dry tons of Class B biosolid.

Agronomic Application Rate and Site Crops:
Class B biosolids are required to be land applied to a site at a rate that is equal to or less than the agronomic rate for the site. An agronomic rate is the whole biosolids application rate (dry weight basis) designed to provide the annual total amount of nitrogen needed by a crop and to minimize the amount of nitrogen passing below the root zone of the crop or vegetation to groundwater.

Biosolids application rates for the Waldport sites were developed based on Oregon State University (OSU) Extension Service Fertilizer Guide: Western Pasture. The annual plant available nitrogen (PAN-N) application rate for pasture grass is 100 nitrogen (N) per acre. The Famer and the Waldport can add nitrogen provided they can demonstrate crop uptake rates through annual soil and grass tissue analysis. (**Note: If more than one type of crop is used at the same site, then state each type of crop and the*

application rate.) The land application sites authorized for use can assimilate the total plant available nitrogen the biosolids provide on an annual basis. Specific site agronomic loading rates are stated in the DEQ issued site authorization letters.

Site Inventory of Existing and Potential Sites:
The Waldport currently land applies Class B biosolids to the DEQ authorized sites listed in the table below (Appendix letter). Surface application of biosolids is performed using tanker truck and splash plate. Site maps with the general location and size of existing authorized sites are included as Appendix of this biosolids management plan. The Waldport currently has 10 acres that are authorized for land application. This is an adequate land base area for current operations, based on current biosolids generation rates.

Biosolids Land Application Site Inventory
**Note: May be included as an Appendix*

Site Name/Identifier	Type of Crop/Acreage	PAN-N lb. acre	Acres	Time of year applied (month)	Harvest Cycle
Ostling	Pasture	100	10	June 1-September 1	Summer

Site Selection Criteria for a New Site:
If necessary, the Waldport will locate additional sites for land applying biosolids. Prior to using any site for land application, the Waldport is required to receive a written site authorization letter from the DEQ. The following site conditions will be considered when determining the suitability of a site for land application:

- All sites will be located on agricultural land in Lincoln and Lane of counties.
- A site should be on a stable geologic formation not subject to flooding or excessive run-off from adjacent land.
- Minimum depth to permanent groundwater should be four feet and the minimum depth to temporary groundwater should be one foot at the time when application of biosolids occurs.
- Topography should be suitable for normal agricultural operations. Liquid biosolids should not be land applied on bare soils when the slope exceeds 12 percent. Dewatered or dried biosolids may be land applied on well vegetated slopes up to 30 percent.
- Soil should have a minimum rooting depth of 24 inches.

Public Notification:
The Waldport is required to notify the public of the proposed land application activity. Each year prior to land application of biosolids, the Waldport should verify for those sites to be used for the year that the property owners who received prior notification have not changed. If a property owner has changed, notification of the land application activity should be made to the new property owner and documented.

Site Management Practices:
Site access restrictions and setbacks will be followed as outlined in the DEQ's site authorization letters. The Waldport will ensure that access is restricted by appropriate means as necessary, such as fencing or posting of signs at the land application site. Biosolids land application will not occur in those areas designated as buffer strips and will be achieved through accurate measurement of the buffer area prior to commencing land application.

Crop Management Practices:
Biosolids are applied to crop list in the site authorization letter. Timing of biosolid application and the harvest cycle of the crop are also listed. Soil conditions must be favorable for application such that runoff, leaching, or soil compaction does not occur. The timing of land application will take into consideration tilling and irrigation practices that may occur on an authorized site. The land application site must be vegetated.

The overall management of nutrients at the land application sites takes into account the amount of biosolids land applied, the amount of commercial fertilizers used and the amount of residual nutrients in the soil. When additional sources of nitrogen (e.g., commercial fertilizer) are applied to a site, then the application of biosolids should be reduced to compensate for the additional nitrogen loading.

Prior to the initiation of biosolids application to a site, a representative soil sample is collected across the entire site, and analyzed by an independent commercial laboratory. Existing nitrogen levels in the soil profile are subtracted from the OSU Extension Service recommended nitrogen application rates for the crop and the biosolids application rate is adjusted. If annual biosolids application on the same field for 3 consecutive years, annual sampling and testing of application site soils for nitrate and ammonia nitrogen will be conducted prior to biosolids application. Soil must be sampled for 0-12 inches and 12 to 24 inches in the fall before the rainy season.

Application rates must be adjusted to account for available nitrogen carried over from previous applications. If crop removal of nitrogen exceeds the calculated agronomic rate, additional nitrogen may be required to sustain crop production.

Transportation and Land Application:
Biosolids are off loaded into a Contract hauler owned (gal.)-tanker trucks near the treatment plant headworks. The biosolid loading area is impounded in case of accidental spillage of biosolids during the truck loading process. This area has a drain that ties back into the headworks of the plant. During the summer months City of Waldport personnel oversee all biosolids land application on DEQ authorized sites. The biosolid land application sites are capable of assimilating City of Waldport annual total nitrogen production. The perennial agronomic biosolid land application rate for pastures and grass is 100 lb. available N per acre/yr.

Long term biosolid application rates and site restrictions are contained in the biosolid site authorization letter. References to the OAR 34-50, The EPA 40 CFR Part 503, site setbacks, site agronomic loading rates, land application restrictions and site restrictions are also detailed out in the site authorization letter.

Staging:
The unloading and placement of biosolids in one area at a land application site may occur on a limited time basis. If staging of biosolids occurs, the requirements outlined in the site authorization letters for each site will be followed.

Field Storage:
Field storage is not authorized by the DEQ at this time.

Spill During Transportation of Biosolids:
In event biosolids are spilled between the treatment facility and the land application site City of Waldport sewage treatment works shall contain the spill, lime, absorb (via sand) and remove spilled sludge solids spills with a front-end loader or shoves and dispose of the spillage at a DEQ authorized application or disposal site. All spills into waters of the state or spills on the ground surface that are like to enter waters of the state shall be reported to immediately to Oregon Emergency Response System (OERS) at 1-800-452-0311 and your regional biosolids coordinator at (541) 440-3338. All spills of 25 gallons or more on the ground surface shall be report to the regional biosolids coordinator at (541) 440-3338.

The City of Waldport is responsible for cleanup of any biosolids spills that occur while transporting to land application sites. If a spill occurs during the transport of biosolids between the wastewater treatment facility and the

land application site, the City of Waldport will:

--Contain the spill.
--Post the area and set up temporary fencing if there is a potential for public exposure.
--Remove spilled biosolids with a front-end loader or shovel.
--Cover the area with dry lime if needed.
--Apply absorbent (e.g., sand) if needed.
--Transport spilled product to a DEQ authorized biosolids land application or disposal site.

Solids Treatment Process Failure or Modification:
If a mechanical problem occurs with a aerobic digester and replacement parts are not in stock at the treatment facility, an emergency parts order will be placed. During this period, the digester in question would be isolated and WAS would be directed to digester #2, or bypass both digesters and direct flow to lagoon.

If maintenance is needed on a treatment process component that will affect compliance with pathogen reduction or vector attraction reduction requirements, the City of Waldport will notify the DEQ and get approval prior to the maintenance activity.

The City of Waldport, as the preparer and land applier of biosolids, is required to maintain records to demonstrate that federal and state biosolids requirements are met. Records will be kept on file by the City of Waldport, and will be available upon request by the DEQ. Monitoring and sampling records will be retained for a period no less than 5 years, unless otherwise required by the NPDES permit or a site authorization letter. The minimum required records include the following information:

- Pollutant concentrations of each parameter stated in the permit;
- Pathogen requirements as stated in the permit for Class B, Description of how one of the vector attraction reduction requirements in 40 CFR 503.33(b)(1) through (8) are met;
- Description of how the management practices in 40 CFR 503.14 and site restrictions in 40 CFR 503.32(b)(5) are met for each biosolids land application site (note: this is for Class B bulk biosolids); and
- Certification that the information submitted is accurate to determine compliance with pathogen and vector attraction reduction requirements, and site restriction/management requirements.

Annual Reporting:
A biosolids annual report is required to be submitted to the DEQ each year by February 19 or as required by the permit if bulk biosolids have been land applied, or biosolids derived products were sold or given away the previous year. The report will include information on biosolids handling activities and data (i.e., monitoring results, nutrient loading rates) from the previous calendar year. Some of the information required with the annual report includes:

- Daily site logs or records, including date, time, and quantity (gallon, pounds) of nitrogen/acre land applied.
- Map, including scale, showing the site and the land application location that coincides with the daily site application method (e.g., truck spreader bar, irrigation cannon).
- Signed copy of the certification statement (see next section on Certification Statement).

Certification Statement:
The City of Waldport is capable of meeting Class B pathogen reduction and vector attraction reduction requirements. As required under 40 CFR 503.17, the City of Waldport must retain a certification statement indicating whether compliance with pathogen reduction, vector attraction reduction, and certain site restrictions have been met. The certification statement must be retained for a period of five years, and must be submitted with the annual report that is due February 19 or as required by the permit. The City of Waldport will retain the following certification statement and it will be signed by a principal executive officer or ranking elected official (note: for a municipality, State, Federal, or other public agency) or their duly authorized representative (e.g., individual or position having responsibility for the overall operation of the system, such as the position of plant manager, supervisor, superintendent or equivalent responsibility).

*Note: The following certification is for the most common situation when Class B bulk biosolids meet Table 3

metals values and VAR is achieved at the wastewater treatment works, and is prepared and land applied by the permittee. For other situations including Class A biosolids, domestic septage, or when Table 2 Cumulative Pollutant Loading Rates are met, a different certification statement must be signed and retained. These statements are posted on the DEQ web site at http://www.deq.state.or.us/wq/Biosolids/BioCerts.html.

I certify, under penalty of law, that the information that will be used to determine compliance with the Class B pathogen requirements in 40 CFR 503.32(b)(1), the vector attraction reduction requirement in 40 CFR 503.33(b) option (1), and the site restrictions in 40 CFR 503.32(b)(5) for each site on which Class B sewage sludge was applied, was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification, including the possibility of fine and imprisonment.

Signature_____Date_____

City of Waldport is also required as the land applier to certify that the management practices in 40 CFR 503.14 are being met. This certification includes that biosolids are being land applied at approved agronomic loading rates as specified in DEQ issued site authorization letters.

I certify, under penalty of law that the management practices in 40 CFR 503.14 have been met for each site on which bulk biosolids is applied. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the management practices have been met.

I am aware that there are significant penalties for false certification, including the possibility of fine and imprisonment.

Signature_____Date_____

April 23, 2018

James Ledbetter, Lead Operator
City of Waldport
P.O. Box 1120
Waldport OR 97394
541-563-2325

Re: Biosolids Site Authorization to Land Apply Biosolids: WR-2006-BS
EPA #: OR-003405-3
File Number: 107816
National Pollutant Discharge Elimination System permit number 101149

Site: Ostling Ranch
5154 Beaver Creek Road
Site location Lat Long: 44º26" 53" 124 º 2'14''
Lincoln County
Field is 10 acres

Dear Gary Walls:

The Department is reauthorizing the Mann Ranch sites under as part of your updated Biosolids Management Plan. This letter is DEQ's approval of your request to land apply anaerobic Class B biosolids on the above referenced site. This Class B biosolids authorization is valid until one of the following occurs:

Site ownership changes.

The current site owner withdraws permission to apply biosolids.

Pursuant to OAR 340-045-0060, DEQ revokes the authorization for non-compliance, submittal of false information, violation of any applicable law, or a serious danger to public health, safety or the environment.

Please be aware that in accordance with OAR 340-050-0030(3), this site authorization letter is part of your biosolids management plan and requirements of this authorization are considered enforceable conditions under your National Pollutant Discharge Elimination System permit #101383.

This authorization to apply Class B biosolids on the above referenced site is subject to criteria detailed in the OAR 340-050, NPDES permit #101149 and the following conditions.

Responsibilities
Waldport must ensure the following:

1. All Class B biosolids are analyzed as required by the permit and meet all permit requirements prior to land application.

2. Proper handling and application of all biosolids at this location.

3. Class B biosolids are transported to the application site in such a manner as to prevent leaking or spilling the Class B biosolids onto the highways, streets, roads, waterways or other land surfaces not approved for biosolids application.

4. A copy of this site authorization letter and a signed Class B biosolids pathogen and vector attraction reduction certification statement must be in the possession of the person applying biosolids or in the application truck. Any person who applies biosolids must review this site authorization letter prior to applying biosolids.

Site Description

This site is a currently in pasture grass and is comprised of and Claptslop mucky peat 0% to 3% and Knapp silt loam soils. The Claptslop soil are poorly drained and the Knapp soils are well drained.

Approved Fields

DEQ approves Class B biosolids application on the portions of these sites that are outlined in colored hatching on the attached site approval maps and as referenced in the table below.

Table 1. Waldport Ostling site.

Site number*	Township Range Section Tax Lot	Approx. Acres	Crop Type
Ostling 1	Latitude/Longitude	10	pasture grass
Total acreage	44°26" 53" 124° 2'14''	10	

Site Use Limitations and Requirements

Waldport must ensure the following conditions are met:

1. DEQ approves these sites for summer Class B biosolids application from May 1 through October 31 during daylight hours (see Approval Map). DEQ may approve earlier application upon request if:
   a. There has been no rain in the 2 days prior to the requested date;
   b. Soils are not wet (see condition #0, p. 12); and
   c. **There is 48″ of separation from the ground surface to the permanent water table** (see #0, p. 4).

Waldport must notify DEQ 48 hours prior to the first application of the season to allow DEQ the opportunity to inspect the site. DEQ may inspect the site before, during and/or after the application.

Class B biosolids application during wet soil conditions must be avoided, especially in low and concave areas. If rainfall exceeds ¼ inch in an hour or ½ inch in a day, Class B biosolids application must stop until there are 24 continuous hours with no rain.

Application must not cause soil compaction or compression and/or increase the potential for surface runoff. Application must occur by pressure tank spray with spreader bar or splash plate. Application must be with standard agricultural equipment designed for land application of liquids with low compaction tires.

Application of Class B biosolids is not allowed on ground where the slope exceeds 30%. Liquid Class B biosolids application is not allowed on bare soils where the ground slope exceeds 12%.

For ground slopes from 12% to 30%, liquid Class B biosolids may be applied only if the following conditions are met:

d. Waldport must notify DEQ 48 hours prior to such application to allow DEQ the opportunity to inspect the site before, during and/or after the application.

e. Application must only occur when there has been no rainfall for 3 days before application and no forecast for rain for 3 days after application. Use the National Weather Service forecast.

f. The daily application rate must not exceed the dry soil infiltration rate. The rate is exceeded if ponding or runoff occurs.

g. All land application must be on the contour. No land application is allowed up and down the slope.

h. Waldport must visually inspect the application area after every truck load applied to ensure that no ponding and/or runoff occurs. Results of this inspection must be included in the daily log.

i. DEQ may require additional land application management practices in writing if ponding and/or runoff occur.

Class B biosolids must be applied evenly at approved agronomic rate and in a manner to prevent ponding or runoff.

The site setbacks and 12% slope break must be flagged prior to Class B biosolids application. Flags should be spaced every 300 feet if practicable.

Class B biosolids applications are not allowed within the following setbacks:

Table 2 Agricultural setbacks for Class B liquid and cake Class B biosolids.

Setback to:	Liquid	Cake
Neighboring house*	50 feet	50 feet
Neighbor's property line	50 feet or 200 feet if drinking well location is unknown	50 feet or 200 feet if drinking well location is unknown
Seasonal drainage ditch, channel, pond, waterway	50 feet	50 feet

Water wells, drinking water sources	200 feet	200 feet
County road, public access	50 feet	25 feet
Farmer's road, no public access	10 feet	10 feet

*Setback may increase if DEQ receives odor complaints.

Liquid Class B biosolids application is not allowed when there is a constant wind speed greater than 20 miles per hour. Waldport may use a wind chart or website to estimate wind speed if a site measurement is not economically feasible. The following are acceptable examples of the Beaufort wind scale and potential websites:

j. Beaufort wind scale http://www.weather.gov/media/iwx/webpages/skywarn/Beaufort_Wind_Chart.pdf or http://www.stormfax.com/beaufort.htm

k. Accuweather http://www.accuweather.com/en/us/roseburg-or/97470/weather-forecast/335275

l. WindyTV https://www.windy.com/43.217/-123.342?2017-06-11-09,42.759,-123.344,8,m:eRcacJA (forecast in knots; 1 knot ~ 1.151 mph)

A minimum of 48″ vertical separation must be maintained from the ground surface to the permanent water table. For sites requiring piezometer installation and use (see Table 1 and attachment 1 Approval Area Map), the water table depth must be measured daily and written record must be kept. The piezometer must meet the following requirements:

a. A 2″ diameter PVC pipe at least 60″ deep from the ground surface.

b. The pipe must have a cap and a visible flag showing the piezometer location.

c. The pipe must have ¼″ perforation spaced an inch apart on opposite sides of the pipe at the lower 2 foot section of the piezometer; this section must covered with a fine mesh screen (window screening will do).

d. Care must be taken not to smear the soil surface borehole as this can affect water readings. If smearing occurs, you must rough up the smooth borehole surface with a rake or similar tool.

The Class B biosolids application rate must not exceed the recommendations in the applicable Oregon State University fertilizer guides and must not exceed the following plant available nitrogen rates:

Table 3 Agricultural setbacks for Class B liquid and cake Class B biosolids.

Crop	Plant Available Nitrogen (PAN) lbs./acre/year
Pasture grass*	100 lbs./acre/year

*OSU fertilizerguide FG63 for Pastures Western Oregon (Jan. 2000).

Changes in the Class B biosolids characteristics or crops management may necessitate appropriate adjustments in the Class B biosolids application rate to maintain proper plant available nitrogen for desired crop growth.

If other sources of nitrogen are used, such as recycled water or commercial fertilizer, the Class B biosolids application rate must be reduced so the total nitrogen applied does not exceed the base agronomic loading rate specified in condition 8 above.

Public access to land with a high potential for public exposure must be restricted for one year after application of Class B biosolids.

m. Signs must be posted at the start of the application and throughout the application season as follows: "No Trespassing – Class B Biosolids Land Application". Signs should be at least 8.5" x 11" in size and spaced a minimum of 500 feet apart. Signs may be removed 2 days after the last application of the season.

n. Controlled access (site must have a minimum three strand wire fence around perimeter) to the Class B biosolids site must be maintained for a period of 12 months following biosolids application.

Grazing of domestic animals is prohibited for 30 days following the last day of Class B biosolids application. Grazing of lactating animals (for example, dairy cattle) is prohibited for 90 days following the last day of Class B biosolids application.

Should nuisance issues such as malodors or flies become a problem, Class B biosolids application practices must be reviewed and immediate countermeasures taken, which may include plowing the solids into the soil within 6 hours of land application.

Spill Reporting and Cleanup Requirements

Waldport must comply with the following:

1. Immediately clean up any spillage of Class B biosolids and notify the DEQ Eugene office at 541-687-7439 of any such occurrence. Outside of DEQ business hours or when spills reach or have the potential to reach waters of the state, notify the Oregon Emergency Response System (OERS) at 1-800- 452-0311.

2. Spillage that cannot be completely cleaned up must be covered with hydrated lime (calcium hydroxide) or lime (calcium oxide). A 50-lb. bag of lime must be available during transportation of Class B biosolids.

3. A copy of the current year's Class B biosolids analysis must be carried in the land application truck with all Class B biosolids that are to be land applied.

Monitoring and Reporting Requirements

Waldport must conduct the following monitoring and reporting:

4. Soil nutrients and carry over nitrogen sampling is required on all active Class B biosolids land application sites as specified in Table 3 below. DEQ may require more frequent soil sampling based on land application practices and approved agronomic loading for crops grown on the site.

5. Written daily land application records must be kept on a field grid map or other easily readable system. Waldport is responsible for tracking the land application of Class B biosolids on daily basis (number gallons and the equivalent number of dry pounds nitrogen land applied per acre).

6. The results of the monitoring must be submitted to DEQ with the biosolids annual report by no later than February 19 of each year.

Table 4. Monitoring Requirements

Parameter	**Frequency** (Unless otherwise required by DEQ in writing)	**Sample Type**	**Reporting Requirement** (Unless otherwise required by DEQ in writing)
Distance from ground surface to groundwater (inches)	Before each application	Written record from piezometer	Keep log in application truck Submit copy of log to DEQ in annual report
1. Application date and time 2. Each application location on the site 3. Name of applicator 4. Quantity applied (gallons and dry lbs. total nitrogen based on most recent Class B biosolids analysis) 5. Visual observation for ponding and/or runoff after application	For each application on a daily basis	Written record and written record of visual observation	Keep log in application truck Submit copy of log to DEQ in annual report
Total gallons applied on site	Monthly summary	Written report	Submit to DEQ in annual report

Parameter	**Frequency** (Unless otherwise required by DEQ in writing)	Sample Type	**Reporting Requirement** (Unless otherwise required by DEQ in writing)
Carryover nutrients in the 0″ – 12″ soil profile: 1. Ammonia (NH3, mg/kg or mg/L) Nitrate + Nitrite (NO3+NO2, mg/kg or mg/L) Total Kjeldahl Nitrogen (TKN, mg/kg) Phosphorus (mg/kg) pH (S.U.) Potassium (mg/kg)	Once year prior to biosolids application (Unless otherwise requested by DEQ)	Composite soil sample that is representative of the site. At a minimum, the sample must be composite of a minimum of 7 distinct locations for each soil type.	Submit to DEQ in annual report
Carryover nutrients in the 12″ – 24″ soil profile: 1. Ammonia (NH3, mg/kg or mg/L) Nitrate + Nitrite (NO3+NO2, mg/kg or mg/L) Total Kjeldahl Nitrogen (TKN, mg/kg) Phosphorus (mg/kg) pH (S.U.) Potassium (mg/kg)	Once prior to biosolids land application (Unless otherwise requested by DEQ)	Composite soil sample that is representative of the site. At a minimum, the sample must be composite of a minimum of 7 distinct locations for each soil type.	Submit to DEQ in annual report

If you have any questions regarding this authorization, please call me at 541-687-7439.

Sincerely,

Paul Kennedy, CPSS-REHS

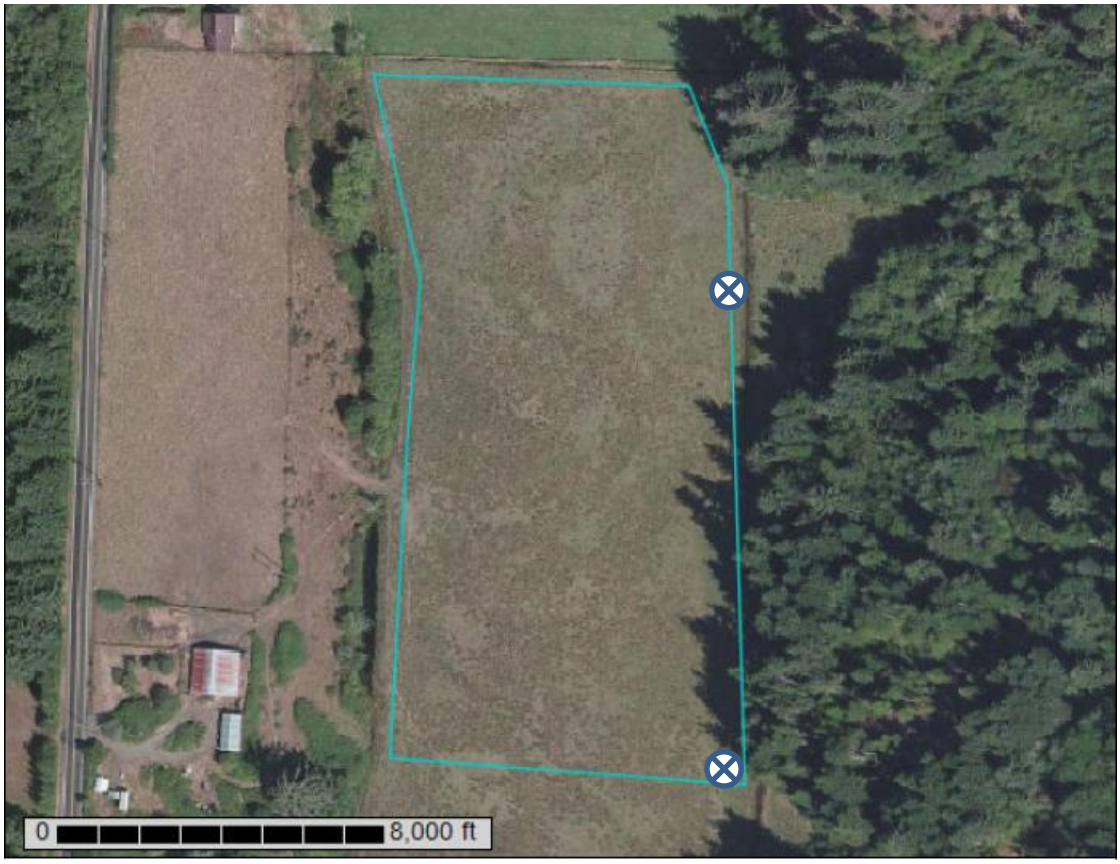
Natural Resource Specialist 4
Attachment: OSU fertilizer guide FG63 Pastures Western Oregon
Ostling site approval map

ec: Pat Heins, Biosolids Program Coordinator, DEQ HQ (w/encl)
cc: File Copy (w/encl)
Elmer Ostling, 5154 Beaver Creek Road, Waldport OR

Attachment 1

Ostling Ranch Waldport OR, Lincoln County Area, Oregon

Map Unit Symbol	Map Unit Name
Cs	Claptslop mucky peak
KpB	Knapp silt loam, 0 to 3 percent slopes



Site Approval Map

Approval Map, approx. 10 acres, 0 to 5% slope.

⊗ piezometer locations