

Sampling and Analysis Plan

AmeriTies Area-Wide Air Sampling

May 2016



**Laboratory and
Environmental
Assessment Program**
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DEQ is a leader in restoring, maintaining and enhancing the quality of Oregon's air, land and water.



State of Oregon
**Department of
Environmental
Quality**

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AmeriTies Area-Wide Air Investigation

This Sampling and Analysis Plan was prepared by:

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Alternative formats (Braille, large type) of this document can be made available. Contact DEQ, Portland, at 503-229-5696, or toll-free in Oregon at 1-800-452-4011, ext. 5696.

Project Approvals

Prepared By: _____ Date: _____
Anthony Barnack, DEQ Project
Manager

Reviewed By _____ Date: _____
Chris Moore, DEQ Quality
Assurance Officer

Approved By: _____ Date: _____
Kathleen Schuckman, DEQ Interim
Air Quality Section Manager

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1. Project Management

1.1. Distribution List

The following personnel will be emailed regarding all aspects of this sampling and analysis plan (SAP). Deviations from this SAP must be communicated in writing (e-mail is acceptable) to all individuals identified in Table 1. Final reports from the DEQ Laboratory will be emailed and mailed to the project manager, regional monitoring coordinator and laboratory monitoring coordinator/data manager.

Table 1 Distribution List

Name	Phone	Email
Anthony Barnack, DEQ Lab Project Manager	503.693.5708	Barnack.anthony@deq.state.or.us
Frank Messina, DEQ Eastern Region	541.633.2019	Messina.frank@deq.state.or.us
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To track the time and expenses spent on this project associated with the ambient monitoring, as well as time and expenses spent on this project associated with the non-laboratory aspects, including permitting, technical, communication and coordination work, DEQ personnel must use the **Q-Time number: 44867**.

1.2. Problem Definition/Background

On February 1, 2015, the DEQ's Nuisance Strategy was triggered due to the number and description of odor complaints DEQ received concerning AmeriTies West, LLC. As a result, DEQ staff conducted odor surveys in The Dalles, OR area and documented that creosote-type odors are often present in the community. On April 8, 2016, DEQ and AmeriTies West, LLC, entered into Mutual Agreement and Final Order No. [AQ/AC-ER-16-067](#) (MAO). More detailed information about AmeriTies West and DEQ's Odor Nuisance Program can be found on [DEQ's Air Quality Eastern Region website](#).

Oregon DEQ is performing additional investigations into air quality concerns in The Dalles, OR. DEQ is collecting air samples to determine the semi-volatile organic compound levels east of city center in The Dalles, OR in response to odor and air quality concerns related to tie treatment plant operations associated with AmeriTies West, LLC. The sampling objective is to determine if emissions associated with tie treatment plant facilities are present above human health risk-based concentrations or, in the case where risk-based concentrations are below naturally occurring background concentrations, where those emissions exceed background levels.

Starting in June 2016, DEQ staff is using PUF/XAD samplers to collect air samples in the vicinity of AmeriTies West, LLC. Analyses will be performed for the following pollutants that are likely associated with tie treatment plant facilities:

- Semi-volatile organic compounds

DEQ will also collect wind speed and wind direction data in the area to help determine the source of any pollutants.

Data from this project may also be used to determine the area of distribution from air emissions from the facility(s). Oregon Health Authority may also utilize some of the data generated from this project as part of an OHA Health Consultation.

For additional information, refer to the DEQ [Ambient Air Quality Monitoring for Criteria Air Pollutants QAPP](#) for meteorology sampling and the DEQ [Air Toxics Monitoring Project QAPP](#) for metals sampling and analysis.

The study boundaries for this sampling and analysis plan was determined by using the wind speed and direction from Dalles port Airport, the known emission points for PAHs from AmeriTies West, LLC, and the complaint location information. ODEQ's Air Quality Eastern Region office, the air toxics coordinator, and the ambient monitoring coordinator all participated in the selection process. The Lab air quality monitoring manager and the air quality modeling specialist were also consulted.

1.3. Project/Task Description

Sampling Organization: Oregon DEQ Laboratory and Environmental Assessment Program
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Suite 150
Hillsboro, Oregon 97124
Ph: 503.693.5700
Contact: Anthony Barnack

Analytical Organization: Oregon DEQ Laboratory and Environmental Assessment Program
3150 NW 229th Avenue
Suite 150
Hillsboro, Oregon 97124
Ph: 5030-693-5700
Contact: Anthony Barnack

1.4. Quality Objectives and Criteria

DEQ will conduct all sampling activities performed under this work plan in accordance with DEQ's Air Toxics Monitoring Project QAPP (DEQ01-LAB-0004-QAPP) and EPA's Technical Assistance Document for the National Air Toxics Trends Station Program (NATTS TAD) (http://www3.epa.gov/ttnamti1/files/ambient/airtox/nattsTADRevision2_508Compliant.pdf).

The laboratory and field staff will follow their standard analytical quality assurance/quality control (QA/QC) outlined in the NATTS TAD, the Air Toxics Monitoring Project QAPP, and laboratory SOPs.

Two field blanks will be collected per month and will be rotated between sampling locations.

1.5. Documentation and Records

Samples collected from the field will be returned to the analytical laboratory with the attached "Chain of Custody" form. Policies and procedures for the maintenance of LEAP analytical records are described in the LEAP Quality Manual ([DEQ91-LAB-0006-LQM](#)). Final analytical reports generated by the DEQ

laboratory will follow standard laboratory practices. Electronic versions of the reports will be e-mailed to the project manager in a portable document format (pdf). An original hard copy of the report with the supporting QC documentation will be kept on file at the DEQ laboratory. Copies of the report will be available upon request.

Field documents will be maintained by the DEQ Project Manager.

Property access agreements will be obtained and maintained by the DEQ Project Manager.

2. Data Generation and Acquisition

2.1. Schedule

DEQ will sample for PAHs, as well as wind speed and wind direction, in the vicinity east of the city center in The Dalles, OR. The monitoring will be focused around AmeriTies, in The Dalles, OR with sampling tentatively starting in June, 2016. DEQ will collect the samples for 24 hours every 3 days for 90 days. Additionally, DEQ will perform daily sampling for a 2 week period during the 90 day sampling period.

2.2. Sampling

Sampling design, collection, methods, and handling will be managed by DEQ. DEQ will ensure that all samples will be collected in the appropriate sample containers, preserved as identified in the appropriate reference methods, and transported to the analytical organization within the appropriate sample holding times, with the appropriate documentation, and under the appropriate sample transport conditions.

Sampling locations will be defined by DEQ in order to monitor the emissions and exposure to the surrounding community. Additional sites may be added to assess the emissions and exposure.

Air Quality Monitoring PUF/XAD Sampler (DEQ11-LAB-0010-SOP)

DEQ will collect semi-volatile organic compound samples with polyurethane foam/XAD air toxic sampling systems. The PUF/XAD samplers will be calibrated in the DEQ laboratory prior to field deployment. Additionally, an initial flow audit will be performed by DEQ field staff prior to sampling.

Samples may be collected over 24-hr periods. All field data will be collected on a chain of custody for each site, accompanying the samples to and from the laboratory, and, if applicable, to subcontracted labs.

The locations and media to be sampled are summarized in Table 2. The locations below, aside from 21252, are yet to be determined, but will be selected using modeling efforts to ensure the site locations account for prevailing wind patterns. An image of the sites in Table 2 is located in Appendix A.

Table 2: Summary of the sampling locations, media, and expected number of samples

LASAR No.*	Name	Description	Lat/Long	Sample media	No. of Samples
21252	The Dalles Cherry Heights (Bluff – background)	Representative neighborhood site	45.6024/ -121.2034	PUF/XAD	
31060	The Dalles Wasco County	AQM site 2705 E 2nd St, The Dalles	45.5983/	PUF/XAD	

	Planning (Near Source)	Or 97058	-121.1472		
31059	The Dalles City Park (Bluff East)	AQM Site E 9th and E 10th Streets, The Dalles Or 97058	45.5950/ -121.1620	PUF/XAD	
		Impacted neighborhood site		WS/WD	Continuous

*If a LASAR station number is not available during QAPP/SAP development, the DEQ Laboratory will generate the unique identifier at the time of sample receipt.

2.3. Sampling Methods, Sample Handling, and Custody

Air samples submitted for laboratory analysis will be collected by air quality monitoring staff. All air samples will be transported to and from the sites, using coolers to adhere to temperature requirements outlined in the Air Toxics Monitoring Project QAPP. All samples will be transported using DEQ chain-of-custody procedures for the DEQ Laboratory.

A summary of the sampling containers, preservation requirements, and holding times is presented in Table 3.

Table 3: Summary of sampling parameters

Sample Type	Container	Preservation	Holding Time
Semi-volatile organic compound sample	Polyurethane Foam/XAD Sorbent-Backed Filters	Store the sealed sample containers refrigerated and protected from light for shipment to the laboratory. Store samples refrigerated at 4°C or below for no longer than two weeks prior to extraction	Samples must be extracted within 14 days after sampling and analyzed within 40 days after extraction

2.4. Analytical Parameters, Methods, and Quality Control

A summary of the requested analytical parameters and methods is provided in Table 4. Standard DEQ laboratory operating procedures will be following during the analyses of the samples, including analytical quality control measures and equipment inspection/maintenance.

Table 4: Summary of analytical parameters and methods

Sample Type	Analytical Parameters	Reference Method
Semi-volatile organic compound sample – PUF/XAD Filter	Semi-volatile organic compounds – Full List of Analytes - Table 4.5-5	Method ASTM D6209-98

2.5. Data Management

Analytical data generated by the laboratory will be sent to the project manager as an electronic pdf report. The DEQ laboratory will maintain hard copies of the analytical reports, including all analytical QC measurements. [Unless otherwise arranged](#), data generated by the DEQ laboratory will be moved to the

laboratory online database following release to the project manager. Data in this database is publically available.

3. Assessment and Oversight

Overall project assessment and oversight, including field activities, will be the responsibility of the project manager. Laboratory assessment and oversight will be provided DEQ LEAP management and quality assurance officers as defined in the LEAP quality manual or for cause. Any analytical anomalies or delays encountered during laboratory operations will be communicated to the project manager in writing (e-mail is acceptable). The project manager will also be notified in writing of any data quality limitations that may be the result of laboratory operations.

4. Data Validation and Usability

The DEQ Laboratory will provide standard data review, verification, and validation on all analytical data generated by this project. The extent of the data review, verification, and validation is limited to the analytical processes only. However, in the best judgment of the DEQ QAO, any data that may be inaccurate, misleading, or otherwise fails the DEQ laboratory's quality standards due to field or sampling activities will be identified in the final analytical report. Moreover, this data will be appropriately qualified when transferred to the Laboratory online database. Data quality levels (DQL) will be assigned in accordance to DEQ guidance document *Data Validation and Qualification* ([DEQ09-LAB-0006-QAG](#)). Generally, only DQLs of A, or B will be acceptable for this project unless the basis for the data acceptability is approved and documented by the project manager. All data verification, validation, and assessment activities for project purposes are the responsibility of the project manager.

Appendix A Proposed Air Sampling Locations

