EXPANDED REMEDIAL INVESTIGATION

Former Agricultural Properties
7109 - 7601 48th Street E, Fife, WA
Map 042017-3, Parcels: 047, 048, 008, 024, 025, 018, 039, 040, 037, 038, 029, and 031

Cleanup Site ID 15535; Facility Site ID 36429

Report Prepared For:

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December 20, 2023

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1.0 INTRODUCTION

Introduction and Purpose

This report documents the results of an Expanded Remedial Investigation, completed by BB&A Environmental (BB&A) at the *subject property*, identified as the former residential and agricultural properties located at 7109 to 7601 (north side of) 48th Street East, in Fife, Washington (herein referred to as the *subject property).* Pierce County identifies the *subject property* as approximately 18 acres in size and composed of the following parcels within map 042017-3: 047, 048, 008, 024, 025, 018, 039, 040, 037, 038, 029, and 031.

The purpose of the Expanded Remedial Investigation was to sample and analyze soil and groundwater for an expanded list of pesticides at the *subject property*. BB&A Environmental (BB&A) was retained by Papé Properties, Inc. to perform the Expanded Remedial Investigation prior to light-industrial redevelopment of the *subject property* with Papé Machinery and Papé Material Handling facilities.

2.0 SITE DESCRIPTION

2.1 Location and Legal Description

The *subject property* is an approximately 18-acre, former agricultural- and residential-use property located at 7109 to 7601 (north side of) 48th Street East, in Fife, Washington. Pierce County identifies the *subject property* as approximately 18 acres in size and composed of the following parcels within map 042017-3: 047, 048, 008, 024, 025, 018, 039, 040, 037, 038, 029, and 031. The geodesic location of the *subject property* is described as the southwest quarter of Section 17, Township 20 North, Range 4 East. The general location of the *subject property* is depicted on the Site Vicinity map included as **Figure 1.** A site location map and aerial photograph are provided on the following pages as **Figures 1** and **2**. A Site Plan is provided as **Figure 3**.

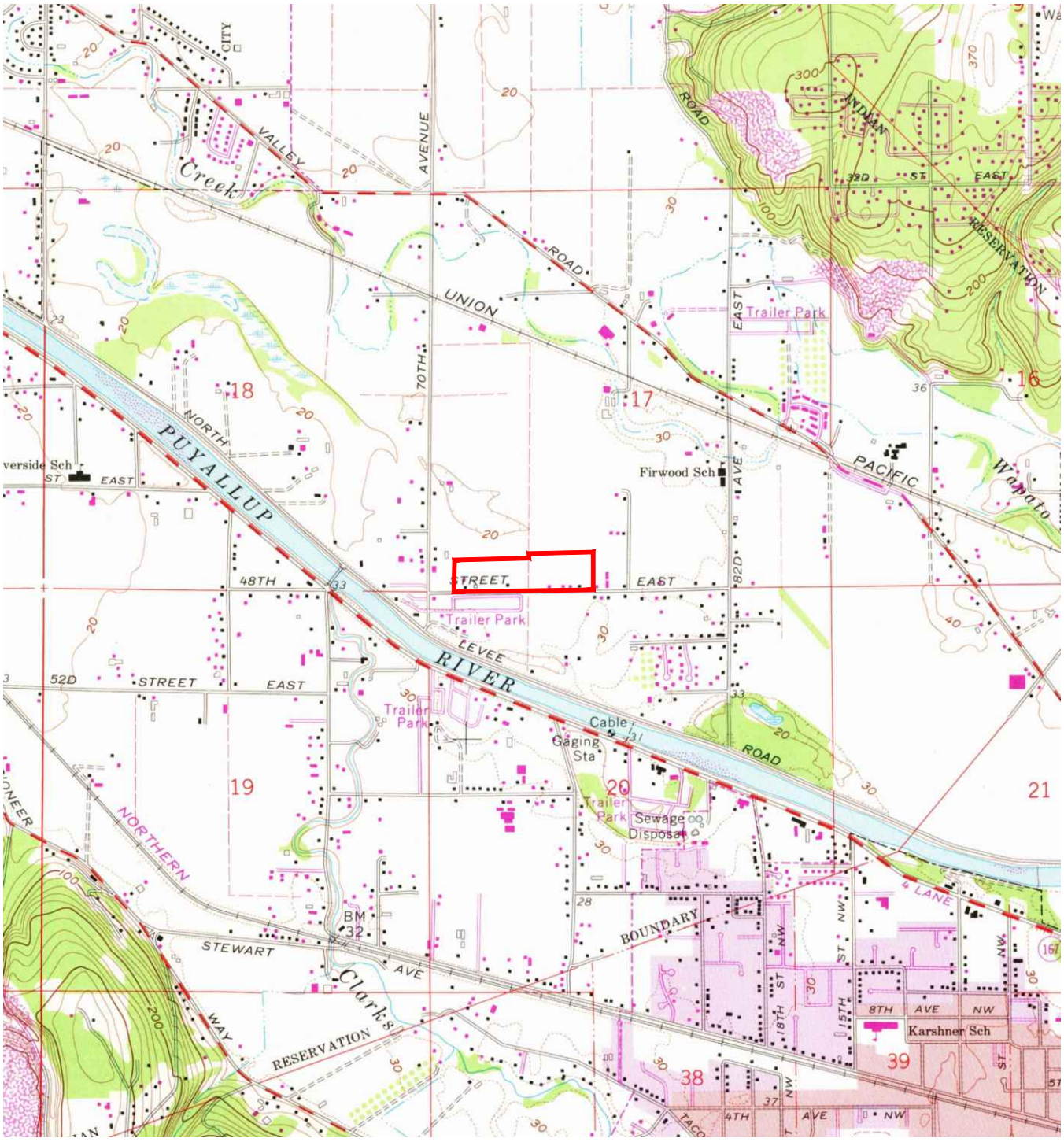
2.2 Subject Property Description

The *subject property* is an approximately 18-acre former agricultural and residential property, composed of several tax lots, located in southeast Fife, Washington. At the time of the site reconnaissance, the *subject property* was noted to be completely bare ground and absent of any former residential structures. No evidence of current agricultural operations was noted.

Adjacent and nearby properties to the north and west are primarily of industrial use, and adjacent and nearby properties to the south and east are predominantly of residential and agricultural use. It should be noted that Papé Properties also owns the three (3) industrial and residential properties (5.65-acres) to the east, and has plans to redevelop these properties as well.

N

0 1/4 1/2 1 (MILE)



SOURCE: USGS TOPOGRAPHIC QUADRANGLE
SERIES: 7.5 MINUTE, PUYPALLUP, WASHINGTON

SITE LOCATION

BB&A ENVIRONMENTAL

EUGENE OFFICE
32986 Roberts Ct.
Coburg, OR
ph: 541.484.9484

PORTLAND OFFICE
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SITE LOCATION MAP
PAPE MACHINERY
7109 TO 7601 48th STREET E., FIFE, WASHINGTON

FIGURE #: 1

PROJECT CODE:	DATE:	SCALE:	DRAWN:	CHECKED:
PAP182PH1.21E	02/03/21	AS SHOWN	K.D.DESIGNS	STEVE OMO

N

0 500
250
(FEET)

PHOTO SOURCE: GOOGLE EARTH, August 18, 2022.

SITE LOCATION

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SITE AERIAL
PAPE MACHINERY
7109 TO 7601 48th STREET E., FIFE, WASHINGTON

FIGURE #: 2

PROJECT CODE:	DATE:	SCALE:	DRAWN:	CHECKED:
PAP182PH1.21E	12/12/23	AS SHOWN	K.D.DESIGNS	STEVE OMO

N

0 120
60
(FEET)

SERVICE STEEL AEROSPACE

CRYSTAL DISTRIBUTION

COMMERCIAL PROPERTY

SUBJECT PROPERTY

TL 042017-3-047
(1.0 Acres)

7111 48th STREET E.

TL 042017-3-048
(1.92 Acres)

7109 48th STREET E.

7223 48th STREET E.

TL 042017-3-008
(1.92 Acres)

TL 042017-3-024
(1.95 Acres)

7305 48th STREET E.

TL 042017-3-025
(1.95 Acres)

TL 042017-3-018
(2.53 Acres)

Trash

TL 042017-3-039
(1.86 Acres)

7501 48th STREET E.

TL 042017-3-040
(0.46 Acres)

TL 042017-3-037
(1.65 Acres)

7511 & 7519 48th STREET E.

7601 48th STREET E.

TL 042017-3-031
(2.15 Acres)

TL 042017-3-029
(0.35 Acres)

48th STREET E.

Drainage Ditch

Drainage Ditch

48th STREET COURT E.

TRAILER PARK PROPERTY

73th AVE. CT. E.

49th STREET E.

Private Drive to Pond

SUBJECT PROPERTY
BOUNDARY LINE

LEGEND

Former Building

Property Line

TL 042017-3-047
(1.0 Acres)

Tax Lot Number
& Acres

FIGURE #: 3

SITE PLAN
PAPE MACHINERY
7109 TO 7601 48th STREET E., FIFE, WASHINGTON

PROJECT CODE: PAP182PH1.21E
DATE: 12/12/23
SCALE: 1"=120'
DRAWN: K.D.DESIGNS
CHECKED: STEVE OMO

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2.3 Current Zoning and Surrounding Land Use

Zoning: The *subject property* is located within the Fife city limits, and is zoned *Community Commercial*. To the north, the adjacent properties are zoned *Industrial*. To the west, east and south adjacent and nearby properties to the south are zoned *Community Commercial*. To the southeast are properties zoned *Single-Family Residential* and *Medium Density Residential*.

Land Use: The adjacent properties to the north and west appear to be of industrial use, although a small agricultural property occupies a parcel to the north. To the south, is a mobile home park that is zoned *Community Commercial*. To the east are three (3) properties (5.65-acres) owned by Papé Properties, that are of industrial and residential use. Papé Properties has plans to redevelop these properties as for industrial use.

3.0 HYDROGEOLOGIC SETTING

3.1 Physical Setting

The *subject property* is relatively level, with a very slight topographical gradient dipping to the north from a topographical high of 27 to 28 feet above mean sea level (MSL) along 48th Street, to a localized low of approximately 22 to 23 feet above MSL at the northeastern portion of the property. Local and regional topography dips gently to the west-northwest (see **Figure 1**).

3.2 Local and Regional Geologic and Hydrogeologic Conditions

According to the US Geological Survey (USGS) *Geologic Map of the Tacoma 1:100,000-Scale Quadrangle, Washington*, the *subject property* and surrounding area are underlain by alluvial (Qa) deposits of loose, stratified fluvial silt, sand, and gravel associated with the Puyallup River valley, within which, the *subject property* is located. More specifically, based on soils encountered in on-site borings, native soils encountered beneath the *subject property* from the surface to a depth of 10 feet below land surface (BLS) include clayey silt and silt with fine-grained sand. Groundwater was found to occur at a depths ranging between six (6) to 10.5 feet BLS, depending on the season.

Local groundwater flow beneath the *subject property* (and nearby areas) is assumed to flow generally west-northwest with decreasing topography towards and parallel to the flow of the Puyallup River.

3.3 Local and Regional Aquifers and Beneficial Groundwater Use

To confirm local stratigraphy and depth to useable aquifers, a water well query was conducted of the Washington Ecology Water Resources database. Using an approximate three-quarter (0.75) mile radius from the *subject property*, the water well query identified 57 well reports. Of these 57 well reports, eight well reports were for seven (7) domestic water wells (two [2] well reports were associated with the same water well, including initial installation, and later for deepening the water well). The screened intervals for each of the seven (7) water wells are identified as follows:

Well ID	**Screened Interval**	**Distance from *Subject Property***
301365	168' - 175'	0.5 miles east of the *subject property*
50066	288' - 298'	0.25 miles south, beyond the Puyallup River
51348	268' - 273'	0.8 miles west-northwest of the *subject property*
52084	287' - 297'	Location Unknown, could be within 500 feet
313681	85' - 90'	0.62 miles southeast of the *subject property*
341330	105' - 110'	0.5 miles east of the *subject property*
1595809	107' - 117'	0.25 miles east of the *subject property*

The City of Fife Public Works Department confirmed that the adjacent trailer park property to the south of the *subject property* received water from the municipal water-supply system.

4.0 HISTORICAL CONTAMINATION AND INVESTIGATIONS

4.1 Historical Contamination

Based on interviews with the former property owners of the *subject property*, no on-site mixing or bulk storage of dieldrin (or pesticides) was ever conducted at the *subject property*. In addition, according to the former property owners, former use of pesticides was conducted in accordance with manufacturers directions and recommendations, and applied as standard operating practices.

4.2 February 2021 Focused Phase II ESA

As part of the Focused Phase II ESA (February 2021), BB&A conducted focused surface soil sampling at the agricultural parcels of the *subject property*, including the former greenhouses on tax parcels 042017-3-037 and 042017-3-039, on the eastern portion of the *subject property*. The purpose of the sampling event was to confirm or deny the presence (and magnitude if present) of herbicides and pesticides in shallow soil in the areas of agricultural use.

4.3 Soil Sampling Methodology

As part of the 2021 focused investigation, composite soil samples were collected from surface soils immediately beneath the tables within the greenhouses, as well as from the agricultural fields composing the *subject property*. The following sample protocols were performed for each composite soil sample:

- **Greenhouse Samples:** Within each greenhouse were raised tables for holding various potted plants. When watered or treated using herbicides or pesticides, excess water runoff from these tables dripped on the soil beneath each table. Within each greenhouse, 10 random grab samples were collected throughout the greenhouse using clean nitrile gloves. The nitrile gloves were changed between samples to prevent cross-contamination. The grab samples were combined and thoroughly mixed within a one-gallon plastic ziploc bag, from which two (2), four (4) ounce soil jars were filled to capacity.

- **Agricultural Fields:** The agricultural fields for parcels (west to east) 047, 048, 008, 024, 025, 018, 039, and 037 were divided into six (6) sampling units, approximately two (2) acres in size. The sampling units are shown on **Figure 4**, as are the approximate location of each grab sample. Within each sampling unit, 10 random grab samples were collected using a shovel and clean nitrile gloves. At each random grab sample location, a one (1) foot by one (1) foot square plug of soil, approximately eight (8) inches deep, was removed using a shovel. To prevent cross-contamination, a grab sample was collected below the root zone at approximately three (3) to eight (8) inches below the surface from the center of the plug that had not come in contact with the shovel. The grab samples were combined and thoroughly mixed within a one-gallon plastic ziploc bag, from which two (2), four (4) ounce soil jars were filled to capacity.

N

0 120
60
(FEET)

SERVICE STEEL AEROSPACE

COMMERCIAL PROPERTY

CRYSTAL DISTRIBUTION

COMMERCIAL PROPERTY

AG COMP 1
Dieldrin= 0.0927

AG COMP 2
Dieldrin= 0.022

AG COMP 3
Dieldrin= 0.115

AG COMP 4
Dieldrin= ND

AG COMP 5
Dieldrin= ND

AG COMP 6
Dieldrin= ND

GH COMP1
GH COMP2
GH COMP3
GH COMP4
GH COMP5
GH COMP6
GH COMP7
GH COMP8
GH COMP9

TL 042017-3-047
(1.0 Acres)

GRASS

TL 042017-3-048
(1.92 Acres)

TL 042017-3-008
(1.92 Acres)

PUMPKIN

TL 042017-3-024
(1.95 Acres)

TL 042017-3-025
(1.95 Acres)

TL 042017-3-018
(2.53 Acres)

TL 042017-3-039
(1.86 Acres)

TL 042017-3-037
(1.65 Acres)

TL 042017-3-031
(2.15 Acres)

TL 042017-3-029
(0.35 Acres)

TL 042017-3-040
(0.46 Acres)

7109 48th STREET E.

7111 48th STREET E.

7223 48th STREET E.

7305 48th STREET E.

7501 48th STREET E.

7511 & 7519 48th STREET E.

7601 48th STREET E.

Former Heating Oil AST & UST

Trash

USTs

AST

Drainage Ditch

48th STREET E.

48th STREET COURT E.

49th STREET E.

73th AVE. CT E.

TRAILER PARK PROPERTY

Private Drive to Pond

Drainage Ditch

SUBJECT PROPERTY

LEGEND

- Building
- Property Line
- TL 042017-3-047 (1.0 Acres) — Tax Lot Number & Acres
- WW — Water Well
- Composite Soil Sample
- AG COMP 2 Dieldrin= 0.022 — Organochlorine Pesticides per EPA Method 8081B; All units in parts per million (ppb); ND= Not Detected
- Yellow Highlighted Text Exceeds MTCA Method B direct contact for cancer.

FIGURE #: 4

SITE PLAN SHOWING DIELDRIN SAMPLE RESULTS – FEBRUARY 2021
7109 TO 7601 48th STREET E., FIFE, WASHINGTON
PAPE MACHINERY

PROJECT CODE: PAP182PH1.21E
DATE: 12/20/23
SCALE: 1"=120'
DRAWN: K.D.DESIGNS
CHECKED: STEVE OMO

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Nitrile gloves were changed after composite sampling of soil in each sample unit to prevent additional cross-contamination. Each clean four (4) ounce glass jar was filled to capacity (i.e., no headspace), and sealed with threaded, teflon-lined caps. The sample jars were uniquely labeled, logged on a chain-of-custody document, and placed on ice in an insulated portable cooler for immediate delivery to Apex Laboratories in Tigard, Oregon.

4.4 Greenhouse Soil Sample Results

The February 2021 composite soil samples were submitted for analysis of Organochlorine Pesticides per EPA Method 8081B, and Herbicides per EPA Method 8151A. The analytical results are summarized below in **Table 1**. Laboratory analysis only detected the herbicide 2,4-D above method reporting limits in four (4) of the greenhouse soil samples. Further, pesticides were not detected in the composite soil samples from Greenhouses 4, 5, 6, and 7 (see **Figure 4**). However in all other composite samples, multiple pesticides were detected, including: Aldrin, beta-BHC, Lindane, cis-Chlordane, trans-Chlordane, 4,4'-DDD, 4,4'-DDE, 4.4'-DDT, Dieldrin, Endosulfan II, Endosulfan Sulfate, Endrin Ketone, and Heptachlor Epoxide.

To evaluate the analytical results, the detected pesticide concentrations were compared to MTCA cleanup levels. MTCA Method A cleanup levels were not available for any of the herbicides or pesticides. Instead, the detected concentrations were compared to MTCA Method B cleanup levels for unrestricted land use. MTCA Method B includes cleanup concentrations for carcinogenic and non-carcinogenic compounds. Dieldrin was found to exceed the carcinogenic MTCA Method B cleanup level of 0.63 milligrams per kilogram (mg/kg), or parts per million (ppm) in two (2) of the composite soil samples: AG Comp 1 at 0.0927 ppm at the far west end of the property, and AG Comp 3 at 0.115 ppm tax lot 024. No soil samples were found to contain dieldrin above the MTCA Method C Cancer cleanup level of 8.2 ppm for industrial use properties. It is important to note that Papé Properties has plans to redevelop the *subject property* (i.e., all tax lots) as industrial properties, including a Papé Machinery facility for sales, service and repair of large earth moving equipment, such as excavators and tractors, and Papé Material Handling Facility for sales, service, and rental of forklifts, and high-lift machinery.

4.5 Water Well Sampling

As part of the Focused Phase II ESA, the water well at 7519 48th Street E was sampled. Prior to sampling, approximately 30 gallons of water was purged from a spigot immediately outside the water well pump house at this address. Upon purging, the water samples were collected directly from the spigot under low-flow conditions. The water sample from this water well was analyzed for dissolved arsenic, nitrates, organochlorine pesticides, and herbicides. None of the potential contaminants analyzed were detected above method-reporting limits.

Table 1: Greenhouse / Agricultural Soil Sampling Analytical Results – February 2021

Multiple Parcels, 7109 - 7519 48th Street E, Fife, Washington

All concentrations in milligrams per kilogram (mg/kg), or parts per million (ppm).

ND (>0.02): Indicates contaminant was not detected above method-reporting limit shown in parenthesis.

Yellow highlighted values indicate concentration exceeding MTCA CULs.

**Except for Arsenic, MTCA A Cleanup Levels are not available. Instead, MTCA Method B Non-Cancer (B-NC) and Method B Cancer (B-C) Cleanup Levels are provided. For Dieldrin, the MTCA C Cancer Cleanup Level (for Industrial Land) is also provided.

Contaminants-of-Potential-Concern	Greenhouse Composite Sample ID									Agricultural Parcel Composite Sample ID						MTCA Method B Cleanup Levels**
	GH Comp1	GH Comp2	GH Comp3	GH Comp4	GH Comp5	GH Comp6	GH Comp7	GH Comp8	GH Comp9	AG Comp1	AG Comp2	AG Comp3	AG Comp4	AG Comp5	AG Comp6	
Organochlorine Pesticides (EPA Method 8081B)																
Aldrin	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	**0.00894**	ND (<0.002)	ND (<0.002)	0.0588[B-C]
beta-BHC	ND (<0.002)	ND (<0.002)	**0.00295**	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	**0.00917**	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	0.556[B-C]
gamma-BHC (Lindane)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	**0.00477**	**0.0235**	ND (<0.002)	ND (<0.002)	0.909[B-C]
cis-Chlordane	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	**0.0255**	**0.00347**	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	2.86[B-C]
trans-Chlordane	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	**0.0122**	ND (<0.002)	**0.00883**	**0.0222**	ND (<0.002)	ND (<0.002)	2.86[B-C]
4,4'-DDD	**0.00361**	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	**0.00757**	**0.00702**	**0.0219**	**0.0232**	**0.0294**	**0.0153**	ND (<0.002)	ND (<0.002)	4.17[B-C]
4,4'-DDE	**0.00256**	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	**0.00597**	**0.00583**	**0.00342**	**0.00889**	**0.0192**	**0.00743**	**0.0123**	**0.00768**	2.94[B-C]
4,4'-DDT	**0.00365**	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	**0.0122**	**0.0129**	**0.00839**	**0.0179**	**0.0429**	**0.0264**	**0.0321**	**0.00871**	2.94[B-C]
Dieldrin	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	**0.0927**	**0.022**	**0.115**	ND (<0.002)	ND (<0.002)	ND (<0.002)	**0.063[B-C] / 8.2[C]**
Endosulfan II	**0.00773**	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	480[B-NC]
Endosulfan Sulfate	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002	ND (<0.002)	ND (<0.002)	ND (<0.002)	**0.00743**	**0.0274**	ND (<0.002)	ND (<0.002)	480[B-NC]
Endrin Ketone	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	**0.0145**	ND (<0.002)	ND (<0.002)	24[B-NC]
Heptachlor epoxide	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002	ND (<0.002)	ND (<0.002)	ND (<0.002)	**0.0214**	**0.0431**	ND (<0.002)	ND (<0.002)	0.11[B-C]
All other Pesticides	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	ND (<0.002)	Various
Herbicides (EPA Method 8151)																
2,4,5-T	ND (<0.013)	ND (<0.012)	ND (<0.015)	ND (<0.012)	ND (<0.012)	ND (<0.011)	ND (<0.012)	ND (<0.014)	ND (<0.013)	ND (<0.013)	ND (<0.012)	ND (<0.012)	ND (<0.013)	ND (<0.013)	ND (<0.013)	800[B-NC]
2,4,5-TP (Silvex)	ND (<0.013)	ND (<0.012)	ND (<0.015)	ND (<0.012)	ND (<0.012)	ND (<0.011)	ND (<0.012)	ND (<0.014)	ND (<0.013)	ND (<0.013)	ND (<0.012)	ND (<0.012)	ND (<0.013)	ND (<0.013)	ND (<0.013)	800[B-NC]
2,4-D	ND (<0.130)	ND (<0.120)	ND (<0.150)	ND (<0.120)	**0.092J**	**0.29**	**0.99**	ND (<0.140)	**0.59**	ND (<0.130)	ND (<0.120)	ND (<0.120)	ND (<0.130)	ND (<0.130)	ND (<0.130)	800[B-NC]
2,4-DB	ND (<0.130)	ND (<0.120)	ND (<0.150)	ND (<0.120)	ND (<0.120)	ND (<0.110)	ND (<0.120)	ND (<0.140)	ND (<0.130)	ND (<0.130)	ND (<0.120)	ND (<0.120)	ND (<0.130)	ND (<0.130)	ND (<0.130)	800[B-NC]
Dalapon	ND (<0.330)	ND (<0.290)	ND (<0.370)	ND (<0.310)	ND (<0.310)	ND (<0.280)	ND (<0.290)	ND (<0.340)	ND (<0.320)	ND (<0.320)	ND (<0.310)	ND (<0.310)	ND (<0.320)	ND (<0.320)	ND (<0.320)	2400[B-NC]
Dicamba	ND (<0.013)	ND (<0.012)	ND (<0.015)	ND (<0.012)	ND (<0.012)	ND (<0.011)	ND (<0.012)	ND (<0.014)	ND (<0.013)	ND (<0.013)	ND (<0.012)	ND (<0.012)	ND (<0.013)	ND (<0.013)	ND (<0.013)	2400[B-NC]
Dichlorprop	ND (<0.130)	ND (<0.120)	ND (<0.150)	ND (<0.120)	ND (<0.120)	ND (<0.110)	ND (<0.120)	ND (<0.140)	ND (<0.130)	ND (<0.130)	ND (<0.120)	ND (<0.120)	ND (<0.130)	ND (<0.130)	ND (<0.130)	800[B-NC]
Dinoseb	ND (<0.130)	ND (<0.120)	ND (<0.150)	ND (<0.120)	ND (<0.120)	ND (<0.110)	ND (<0.120)	ND (<0.140)	ND (<0.130)	ND (<0.130)	ND (<0.120)	ND (<0.120)	ND (<0.130)	ND (<0.130)	ND (<0.130)	80[B-NC]
MCPA	ND (<26)	ND (<23)	ND (<29)	ND (<25)	ND (<25)	ND (<22)	ND (<23)	ND (<27)	ND (<26)	ND (<26)	ND (<25)	ND (<25)	ND (<26)	ND (<26)	ND (<25)	40[B-NC]
MCPP	ND (<13)	ND (<12)	ND (<15)	ND (<12)	ND (<12)	ND (<11)	ND (<12)	ND (<14)	ND (<13)	ND (<13)	ND (<12)	ND (<12)	ND (<13)	ND (<13)	ND (<13)	80[B-NC]
Arsenic	6.44	8.86	10.2	8.14	5.06	2.80	3.71	5.84	4.97	3.32	3.95	4.91	5.43	4.51	4.46	20[A]

5.0 FOCUSED REMEDIAL INVESTIGATION – MARCH 2023

5.1 Purpose

Previous investigations at the *subject property* identified dieldrin in surface soils from two (2) tax lots at concentrations exceeding MTCA Method B (Cancer) Cleanup Levels; although, the detected dieldrin concentrations did not exceed the MTCA Method C cleanup level for industrial use land (see **Table 1**). No other pesticides or herbicides were detected at concentrations exceeding MTCA Method B Cleanup Levels.

In March 2023, BB&A conducted a Focused Remedial Investigation with the purpose of defining the magnitude and extent of dieldrin in soil at the *subject property*. More specifically, the former Composite 1 (COMP 1) and Composite 3 (COMP 3) sample units (shown on **Figure 4**), where dieldrin exceeded MTCA Method B (Cancer) Cleanup Levels, were subdivided and resampled.

5.2 Soil Sampling Methodology and Analytical Results

The area identified as COMP 1, on the west portion of the *subject property* (composed of portions of tax lots 042017-3-047 and 042017-3-048), was subdivided into six (6) approximately equal sub-units, within which COMP 7 through COMP12 soil samples were collected. The area identified as COMP 3, identified as tax lot 042017-3-024, was subdivided into five (5) approximately equal sub-units, within which COMP13 through COMP17 were collected.

Within each sub-unit, 10 random grab samples were collected. The grab samples were collected generally below the root zone to a depth of six (6) inches below land surface. The 10 sub-unit grab samples were combined and thoroughly mixed within a one-gallon plastic ziploc bag, from which eight (8) ounce soil jars were filled to capacity. Clean nitrile gloves were used during collection of soil samples to prevent cross-contamination.

Upon collecting the shallow grab samples to a depth of six (6) inches, a posthole tool was used to advance the hole to deeper depths of approximately 14 to 18 inches. Upon attaining this depth, clean nitrile gloves were used to retrieve a soil sample from the 14 to 18 inch depth, which was combined and thoroughly mixed within a one-gallon plastic ziploc bag, and then transferred to an eight (8) ounce soil jar filled to capacity. To prevent cross-contamination, clean nitrile gloves were used, and the posthole tool was decontaminated between sample sub-units.

The sample containers were uniquely labeled, logged on a chain-of-custody form, and placed on ice until delivery to Apex Laboratory (a Washington certified laboratory) in Tigard, Oregon.

5.3 Soil Sampling Analytical Results

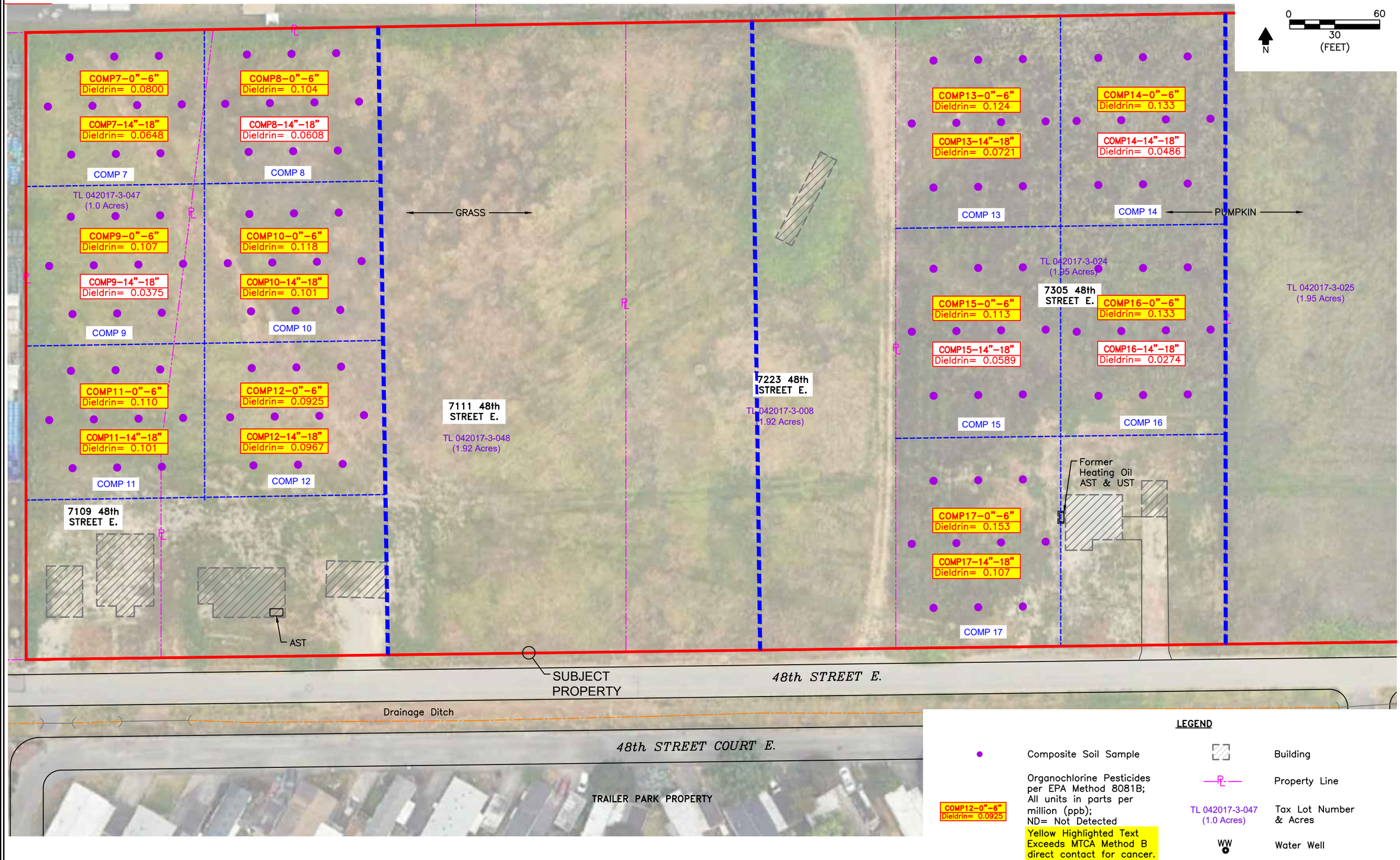
The soil analytical results are summarized on **Table 2** and **Figure 5**.

Table 2: Composite Soil Analytical Results – Focused Remedial Investigation, March 2023

Multiple Parcels, 7109 - 7519 48th Street E, Fife, Washington

All concentrations in milligrams per kilogram (mg/kg), or parts per million (ppm).
Yellow highlighted values indicate concentration exceeding MTCA CULs.
**MTCA Method B Cancer (B-C) and MTCA Method C Cancer Cleanup Levels are provided.

SURFACE SOIL SAMPLE IDENTIFICATION (0" - 6") (Composite ID – Sample Depth)	Dieldrin
Tax lots 042017-3-047 and 042017-3-048	
COMP7 - 0"-6"	**0.080**
COMP8 - 0"-6"	**0.104**
COMP9 - 0"-6"	**0.107**
COMP10 - 0"-6"	**0.118**
COMP11 - 0"-6"	**0.110**
COMP12 - 0"-6"	**0.0925**
Tax lot 042017-3-024	
COMP13 - 0"-6"	**0.124**
COMP14 - 0"-6"	**0.134**
COMP15 - 0"-6"	**0.113**
COMP16 - 0"-6"	**0.133**
COMP17 - 0"-6"	**0.153**
NEAR SURFACE SOIL SAMPLE IDENTIFICATION (14" - 18")	
Tax lots 042017-3-047 and 042017-3-048	
COMP7 - 14"-18"	**0.0648**
COMP8 - 14"-18"	**0.0608**
COMP9 - 14"-18"	**0.0375**
COMP10 - 14"-18"	**0.101**
COMP11 - 14"-18"	**0.101**
COMP12 - 14"-18"	**0.0967**
Tax lot 042017-3-024	
COMP13 - 14"-18"	**0.0721**
COMP14 - 14"-18"	**0.0486**
COMP15 - 14"-18"	**0.0589**
COMP16 - 14"-18"	**0.0274**
COMP17 - 14"-18"	**0.107**
Washington Ecology Model Toxics Control Act (MTCA) Method Cleanup Levels	
MTCA Methods B (Cancer) and C	**0.063[B-C] / 8.2[C]**



LEGEND

●	Composite Soil Sample		Building
COMP12–0”–6” Dieldrin= 0.0925	Organochlorine Pesticides per EPA Method 8081B; All units in parts per million (ppb); ND= Not Detected. Yellow Highlighted Text Exceeds MTCA Method B direct contact for cancer.	—PL—	Property Line
		TL 042017-3-047 (1.0 Acres)	Tax Lot Number & Acres
		WW	Water Well

FIGURE #: 5

SOIL ANALYTICAL RESULTS – MARCH 2023 REMEDIAL INVESTIGATION
PAPE MACHINERY
7109 TO 7601 48th STREET E., FIFE, WASHINGTON

PROJECT CODE: PAP182PH1.21E
DATE: 12/20/23
SCALE: 1”=60’
DRAWN: K.D.DESIGNS
CHECKED: STEVE OMO

PORTLAND OFFICE
25195 SW Parkway Ave.,#207
Wilsonville, OR
ph: 503.570.9484

EUGENE OFFICE
32986 Roberts Ct.
Coburg, OR
ph: 541.484.9484

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Surface / Shallow Sub-Unit Sampling Results: The March 2023 investigation detected dieldrin in all of the shallow soil samples (i.e., near surface to six [6] inch depth) at fairly consistent concentrations. Within the COMP 1 sample unit, dieldrin was detected in shallow soil from sub-units COMP7 through COMP12 at concentrations ranging from 0.08 to 0.118 ppm, with a mean value of 0.102 ppm. All of the detected concentrations exceed the MTCA Method B Cancer cleanup level, but none exceed the MTCA Method C Cancer cleanup level for industrial properties.

Within the COMP 3 sample unit, dieldrin was detected in shallow soil from sub-units COMP13 through COMP17 at concentrations ranging from 0.124 to 0.153 ppm, with a mean value of 0.131 ppm – all exceeding the MTCA Method B (Cancer) cleanup level, but none exceeding the MTCA Method C Cancer cleanup level for industrial properties.

Deeper Sub-Unit Sampling Results: Within the COMP 1 sample unit, dieldrin was detected in deeper soil samples (i.e., 14" to 18") from the sub-units at concentrations ranging from 0.0375 to 0.101 ppm, with a mean value of 0.077 ppm. Dieldrin concentrations in two (2) of the deeper sub-unit samples were below the MTCA Method B cleanup level; however, the mean value was still above the MTCA Method B Cancer cleanup level. None of these detected concentrations exceeded the MTCA Method C Cancer cleanup level for industrial properties.

Within the COMP 3 sample unit, dieldrin was detected in the deeper soil samples (i.e., 14" to 18") from the sub-units at concentrations ranging from 0.0274 to 0.107 ppm, with a mean value of 0.063 ppm. Dieldrin concentrations in three (3) of the sub-unit samples were below the MTCA Method B cleanup level, and the mean value for all of the deeper samples in the COMP 3 sample unit was at the MTCA Method B cleanup level of 0.63 ppm. None of the detected concentrations exceeded the MTCA Method C Cancer cleanup level for industrial properties.

6.0 PRELIMINARY CONCEPTUAL SITE MODEL

The purpose of a Conceptual Site Model (CSM) is to evaluate potential exposure pathways, mechanisms, media, and routes by which human and ecological receptors may be potentially exposed to hazardous substances (in this case, petroleum contamination) at the *subject property*. As part of the CSM process, the following factors were considered:

- Current and future Land and Resource Use (e.g., zoning, land use, use of groundwater);
- Source and extent of contamination;
- Types of contaminants and constituents of potential concern;
- Types of media impacted (e.g., soil, water, vapor, surface water, etc.); and
- Route of exposure (e.g., inhalation, dermal contact, ingestion, etc.)

6.1 Current and Future Land and Resource Use

The *subject property* is located within the Fife city limits, and is zoned *Community Commercial*. To the north, the adjacent properties are zoned *Industrial* and operate as distribution warehouses. Properties to the west are of industrial use as waste transfer and recycling facilities, but are zoned *Community Commercial*. Papé Properties owns the three (3) residential properties (5.65-acres) to the east, and plans to redevelop these properties for industrial use as well. Properties to the south are of residential use as a trailer park, but are zoned *Community Commercial*.

Washington Administrative Code (WAC) 173-340-200 defines "Industrial properties" as those that are zoned “industrial use” by city or county (i.e., local jurisdiction), and/or “have been characterized by, or are to be committed to, traditional industrial uses such as processing or manufacturing of materials, marine terminal and transportation areas and facilities, fabrication, assembly, treatment, or distribution of manufactured products, or storage of bulk materials.” Based on this definition, future use of the *subject property* is considered industrial use, since Papé intends to redevelop the *subject property* with a Papé Machinery facility for sales, service and repair of large earth moving equipment, and a Papé Material Handling facility for sales, service, and rental of forklifts, and high-lift machinery.

6.2 Contaminants of Concern

Based on the results of the February 10, 2021, Focused Phase II ESA, **dieldrin** is considered the only Contaminant of Concern (COC) associated with the *subject property*. According to the U.S. Department of Health Agency for Toxic Substances and Disease Registry (ATSDR), dieldrin is a chlorinated pesticide that was manufactured and used from 1948 to the early 1970's. Dieldrin has a strong affinity for organic matter and sorbs tightly to soil, with little to no leaching to groundwater, and no volatility. It should be noted that aldrin, another chlorinated pesticide, is found to break down in the environment and within insects to form dieldrin.

6.3 Source and Extent of Contamination

The source of contamination identified in soil is the result of historical application of pesticides on the former agricultural portions of tax lots 042017-3-047, 042017-3-048, and 042017-3-024. According to the former owners, pesticides were applied per standard operating practices and manufacturers recommendations. No spills or inadvertent releases of pesticides occurred onsite.

Horizontal and Vertical Extent of Contamination in Soil

- **Vertical:** The findings of the Focused Remedial Investigation did not identify the vertical extent of dieldrin in soil. During surface and shallow soil sampling, the upper 12 to 14 inches were noted to consist of soft silty soils – likely due to the frequent tilling operations of the past. At depths of 16 to 18 inches, the soils were moderately hard and compact. It is suspected that the denser and more compact soils at depths greater than 16 to 18 inches retard the vertical migration of dieldrin.

- **Horizontal:** The findings of the 2021 Focused Phase II ESA suggest that dieldrin contamination in soil exceeding MTCA Method B cleanup levels is limited to tax lots 042017-3-047, 042017-3-048, and 042017-3-024.

Extent of Groundwater Contamination: No pesticides were detected in groundwater from an on-site water well sampled formerly located at 7519 48th Street East. Previous investigations at another portion of the *subject property* found uppermost groundwater to occur at depths ranging between eight (8) and 10.5 feet below land surface. As part of the Expanded Remedial Investigation, groundwater was sampled beneath the tax lots were dieldrin exceeded MTCA B Cancer cleanup levels (discussed in **Section 8.0**).

6.4 Human-Health Routes of Exposure

Based on current and reasonably likely future use of the *subject property*, current use of municipal water-supply sources, depth to soil and groundwater, this Preliminary Conceptual Site Model (CSM) considers the following exposure pathways and receptor scenarios to be reasonably applicable:

- Ingestion, dermal contact, and/or inhalation of soil particulates by Excavation Workers is considered a complete exposure pathway.

- The results of the water well query completed in **Section 3.3** identified seven (7) domestic water wells within three-quarter (0.75) mile radius from the *subject property* – the closest being 0.25 to 0.5 miles to the east, upgradient of the *subject property*. The screened interval for the seven (7) domestic water wells ranged from 85 to 90 feet below land surface (BLS) at the shallowest well, to 288 to 298 feet BLS in the deepest well. All of the adjacent properties were found to be connected to the municipal water-supply system. Based on these findings, uppermost groundwater does not appear to be utilized as a source of domestic water (i.e., drinking water, bathing, etc.), and is considered an incomplete pathway. Further, no pesticides were detected in groundwater from an on-site water well. Ingestion or dermal contact with groundwater by Excavation Workers is considered a complete pathway.

- Inhalation of trench air within open excavations, or vapor intrusion into future onsite buildings is considered a complete exposure pathway. However, it is important to note that dieldrin is not considered a volatile compound – especially decades after the last application.

6.5 Ecological Receptors

Currently, the *subject property* is bare ground, and provides suitable habitat for burrowing insects, reptiles, and mammals, and the birds and mammals that prey on them. Papé currently has plans to redevelop the *subject property* with two (2) separate industrial facilities. These plans will effectively cap the *subject property* with buildings, service shops, concrete and asphalt parking lots and driveways, and gravel yards for displaying equipment. Some minor areas of landscaping and stormwater infrastructure will be included as part of construction and development.

7.0 CLEANUP STANDARDS

7.1 Proposed Soil Cleanup Standard – MTCA Method C Industrial Use

Based on proposed future industrial[1] land use of the *subject property* and adjacent properties to the east, plus zoning and land use of the adjacent properties to the north and west, and the findings of the Preliminary CSM, Model Toxics Control Act (MTCA) Method C Cancer cleanup levels for industrial land use are proposed for soil at the *subject property*. Method C Cancer cleanup levels were developed with industrial sites in mind, utilizing less stringent exposure assumptions, based on a 1 in 100,000 (10^{-5}) cancer risk, and are considered protective of human exposure via direct contact pathway for the *subject property* future land use.

7.2 Proposed Groundwater Cleanup Standards – MTCA Method C Industrial Use

Based on the results of the water well query completed in **Section 3.3**, uppermost groundwater does not appear to be utilized as a source of domestic water (i.e., drinking water, bathing, etc.). Further, based on proposed future industrial land use of the *subject property* and adjacent properties to the east, and industrial use and zoning to the west and north (downgradient), and the findings of the Preliminary CSM, MTCA Method C Cancer cleanup levels for industrial land use are proposed for groundwater beneath the *subject property*.

It is important to note that pesticides were not detected in groundwater from an on-site water well.

[1] Washington Administrative Code (WAC) 173-340-200 defines "Industrial properties" as those that are zoned “industrial use” by city or county (i.e., local jurisdiction), and/or “have been characterized by, or are to be committed to, traditional industrial uses such as processing or manufacturing of materials, marine terminal and transportation areas and facilities, fabrication, assembly, treatment, or distribution of manufactured products, or storage of bulk materials. Based on this definition, future use of the *subject property* as a Papé Machinery facility (sales, service and repair of large earth moving equipment), and Papé Material Handling facility (sales, service, and rental of forklifts, and high-lift machinery) is considered industrial use.

8.0 EXPANDED REMEDIAL INVESTIGATION

8.1 Purpose

In an opinion letter dated, June 12, 2023, the Ecology Toxics Cleanup Program reviewed and commented on BB&A's Focused Phase II ESA from February 2021. In the opinion letter, Ecology determined that additional actions were necessary to determine the nature and extent of contamination at the *subject property*. In response, BB&A provided Ecology with a work plan to additionally investigate pesticide contamination at the *subject property*, specifically at parcels 047, 048, 008, 024, 025, 018, 039, 040, and 037 (of Map #042017-3). The work plan was approved by the Ecology project manager in email correspondence dated August 24, 2023.

To summarize, this phase of the Expanded investigation, included:

- Advancing six (6) push-probe borings to sample groundwater, for analysis of pesticides, beneath tax lots 047, 048, 008, 024, and 025 (of Map #042017-3);
- Sampling surface and near surface soil from tax lots 047, 048, 008, 024, 025, 018, 039, 040, and 037 (of Map #042017-3), for laboratory analysis of metals and an expanded list of pesticides, specifically Organophosphorous (OPP) and carbamate pesticides; and
- Collect one (1) full composite soil sample from all of the tax lots listed above for laboratory analysis for dioxin.

8.1 Push-Probe Groundwater Investigation

On September 7, 2023, as part of this proposed expanded investigation, six (6) push-probe borings were advanced to groundwater to determine if pesticides had leached to groundwater beneath the western half of *the subject property*. The push-probe boring locations are shown on **Figure 6**.

8.1.1 Groundwater Investigation Methodology

The push-probe borings were completed using a track-mounted Geoprobe® 7822, and Geoprobe® tooling. To eliminate potential cross-contamination between the Geoprobe® rods and surface soils that might contain residual pesticides, a five (5) foot long, 4.5-inch diameter stainless steel rod was initially advanced to a depth of five (5) feet with an expendable point. The 4.5-inch diameter rod was lifted a few inches to dislodge the expendable point. Then, within the 4.5-inch diameter rod (acting as an outside casing), 2.25-inch rods (with 1.5-inch inside diameter) were advanced to a depth of 15 feet below land surface (BLS). Upon driving the hollow rods to a depth of 15 feet BLS, three-quarter (3/4)-inch diameter slotted PVC casing was placed within the 2.25-inch diameter rods. The 2.25-inch rod was then lifted, removing the expendable point at the bottom, and exposing the slotted casing to accumulating groundwater. In each boring, groundwater was found to occur at approximately 12 to 13 feet BLS.

N

0 120
60
(FEET)

SERVICE STEEL AEROSPACE

COMMERCIAL PROPERTY

CRYSTAL DISTRIBUTION

COMMERCIAL PROPERTY

TL 042017-3-047
(1.0 Acres)

P2

GRASS

AG COMP 1

AG COMP 2

P3

7223 48th STREET E.

AG COMP 3

P4

PUMPKIN

AG COMP 4

TL 042017-3-024
(1.95 Acres)

TL 042017-3-025
(1.95 Acres)

P6

AG COMP 5

TL 042017-3-018
(2.53 Acres)

TL 042017-3-039
(1.86 Acres)

AG COMP 6

TL 042017-3-037
(1.65 Acres)

GH COMP6

GH COMP7

GH COMP8

GH COMP9

GH COMP5

GH COMP4

GH COMP3

GH COMP2

GH COMP1

USTs

7601 48th STREET E.

TL 042017-3-031
(2.15 Acres)

P1

7109 48th STREET E.

TL 042017-3-048
(1.92 Acres)

7111 48th STREET E.

TL 042017-3-008
(1.92 Acres)

7305 48th STREET E.

P5

Former Heating Oil AST & UST

Trash

7501 48th STREET E.

TL 042017-3-040
(0.46 Acres)

7511 & 7519 48th STREET E.

TL 042017-3-029
(0.35 Acres)

AST

Drainage Ditch

48th STREET E.

Drainage Ditch

48th STREET COURT E.

TRAILER PARK PROPERTY

73th AVE. CT. E.

49th STREET E.

Private Drive to Pond

SUBJECT PROPERTY

LEGEND

P1	Push Probe Groundwater Location and Identification Number
	Building
PL	Property Line
TL 042017-3-047 (1.0 Acres)	Tax Lot Number & Acres
WW	Water Well

FIGURE #:

PUSH-PROBE GROUNDWATER INVESTIGATION – SEPTEMBER 2023
PAPE MACHINERY
7109 TO 7601 48th STREET E., FIFE, WASHINGTON

PROJECT CODE:	PAP182PH1.21E
DATE:	12/20/23
SCALE:	1"=120'
DRAWN:	K.D.DESIGNS
CHECKED:	STEVE OMO

PORTLAND OFFICE
25195 SW Parkway Ave., #207
Wilsonville, OR
ph: 503.570.9484

EUGENE OFFICE
32986 Roberts Ct.
Coburg, OR
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Prior to sampling groundwater, approximately two (2) gallons of groundwater was purged at a low-flow rate until groundwater was clear of sediment. It should be noted that three (3) well casing volumes was estimated at less than one (1) gallon of purge water. Groundwater was purged and sampled using new polyethylene tubing, and a low-flow peristaltic pump (no tubing was re-used between borings). Purged groundwater was placed in a 55-gallon drum pending laboratory analysis. Upon purging a sufficient volume, groundwater was pumped directly into laboratory-supplied glassware, using a peristaltic pump at its lowest setting (0.1 to 0.3 liters per minute).

8.1.2 Groundwater Analytical Methods

Groundwater samples were collected from the six (6) temporary borings, given a unique identification, placed on ice, and logged onto a chain-of-custody document. The groundwater samples were delivered to Apex Laboratory in Tigard, Oregon, for the following laboratory analyses: Organochlorine pesticides per EPA method 8081B, and Organophosphorus (OPP) Pesticides per EPA Method 8270E.

8.1.3 Groundwater Analytical Results

Laboratory analysis of the groundwater samples did not detect any of the 22 organochlorine pesticides analyzed by EPA Method 8081B; nor were any of the 28 OPP pesticides analyzed by EPA Method 8270E. The analytical results are summarized on **Tables 3** and **4**, and the complete Laboratory Report is provided in **Appendix A**.

Most importantly, dieldrin, the only contaminant of concern in soil, was not detected above method-reporting limits in groundwater. Laboratory method-reporting limits for several pesticides (not including dieldrin) were found to exceed MTCA Method B / C Cancer cleanup levels, where indicated in **Tables 3** and **4**. Still, the results indicate that no historical use of pesticides, including dieldrin and/or aldrin, has not adversely impacted groundwater beneath the *subject property*.

Table 3: Groundwater Analytical Results – Organochlorine Pesticides

Multiple Parcels, 7109 - 7519 48th Street E, Fife, Washington

All concentrations in parts per billion (ppb) or micrograms per Liter (ug/L).
ND (<0.0109) : Indicates not detected above method-reporting limit value identified.
Highlighted MTCA Cleanup values indicate reporting limit greater than MTCA B / C cleanup levels.

Organochlorine Pesticides (8081B)	Push-Probe Boring ID						MTCA Method A Cleanup Levels
	P1-GW	P2-GW	P3-GW	P4-GW	P5-GW	P6-GW	
Aldrin	ND<0.0109	ND<0.012	ND<0.0105	ND<0.010	ND<0.0119	ND<0.0106	**0.0026 B / 0.026 C**
alpha-BHC	ND<0.0109	ND<0.012	ND<0.0105	ND<0.010	ND<0.0119	ND<0.0106	**0.014 B / 0.14 C**
beta-BHC	ND<0.0109	ND<0.012	ND<0.0105	ND<0.010	ND<0.0119	ND<0.0106	**0.049 B / 0.49 C**
delta-BHC	ND<0.0109	ND<0.012	ND<0.0105	ND<0.010	ND<0.0119	ND<0.0106	**No MTCA value**
gamma-BHC (Lindane)	ND<0.0109	ND<0.012	ND<0.0105	ND<0.010	ND<0.0119	ND<0.0106	**0.08 B / 0.8 C**
cis-Chlordane	ND<0.0109	ND<0.012	ND<0.0105	ND<0.010	ND<0.0119	ND<0.0106	**4.0 B / 8.8 C**
trans-Chlordane	ND<0.0109	ND<0.012	ND<0.0105	ND<0.010	ND<0.0119	ND<0.0106	**4.0 B / 8.8 C**
4-4'-DDD	ND<0.0109	ND<0.012	ND<0.0105	ND<0.010	ND<0.0119	ND<0.0106	**0.36 B / 3.6 C**
4-4'-DDE	ND<0.0109	ND<0.012	ND<0.0105	ND<0.010	ND<0.0119	ND<0.0106	**0.13 B / 1.3 C**
4-4'-DDT	ND<0.0109	ND<0.012	ND<0.0105	ND<0.010	ND<0.0119	ND<0.0106	**0.26 B / 2.6 C**
Dieldrin	ND<0.0109	ND<0.012	ND<0.0105	ND<0.010	ND<0.0119	ND<0.0106	**0.0055 B/ 0.055 C**
Endosulfan I	ND<0.0109	ND<0.012	ND<0.0105	ND<0.010	ND<0.0119	ND<0.0106	**No MTCA value**
Endosulfan II	ND<0.0109	ND<0.012	ND<0.0105	ND<0.010	ND<0.0119	ND<0.0106	**No MTCA value**
Endosulfan sulfate	ND<0.0109	ND<0.012	ND<0.0105	ND<0.010	ND<0.0119	ND<0.0106	**96 B / 210 C**
Endrin	ND<0.0109	ND<0.012	ND<0.0105	ND<0.010	ND<0.0119	ND<0.0106	**4.8 B / 11.0 C**
Endrin aldehyde	ND<0.0109	ND<0.012	ND<0.0105	ND<0.010	ND<0.0119	ND<0.0106	**No MTCA value**
Endrin ketone	ND<0.0109	ND<0.012	ND<0.0105	ND<0.010	ND<0.0119	ND<0.0106	**No MTCA value**
Heptachlor	ND<0.0109	ND<0.012	ND<0.0105	ND<0.010	ND<0.0119	ND<0.0106	**0.0097 B / 0.097 C**
Heptachlor epoxide	ND<0.0109	ND<0.012	ND<0.0105	ND<0.010	ND<0.0119	ND<0.0106	**0.0048 B / 0.048 C**
Methoxychlor	ND<0.076	ND<0.0843	ND<0.0737	ND<0.070	ND<0.0833	ND<0.0745	**80 B / 180 C**
Chlordane (Tech)	ND<0.408	ND<0.452	ND<0.395	ND<0.375	ND<0.446	ND<0.399	**0.13 B / 1.3 C**
Toxaphene Total	ND<0.408	ND<0.452	ND<0.395	ND<0.375	ND<0.446	ND<0.399	**0.08 B / 0.8 C**

B / C: Where indicated, no MTCA A cleanup level is available, and instead, the most stringent MTCA B and C cancer cleanup levels are shown (Note, that where MTCA Cancer levels are not available, non-cancer values are provided).

Table 4: Groundwater Analytical Results – OPP Pesticides

Multiple Parcels, 7109 - 7519 48th Street E, Fife, Washington

All concentrations in parts per billion (ppb) or micrograms per Liter (ug/L).
ND <0.0109 : Indicates not detected above method-reporting limit value identified.
Highlighted MTCA cleanup values indicate reporting limit greater than MTCA B / C cleanup levels.

Organochlorine Pesticides (8081B)	Push-Probe Boring ID						MTCA Method Cleanup Levels
	P1-GW	P2-GW	P3-GW	P4-GW	P5-GW	P6-GW	
Azinphos methyl (Guthion)	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**48 B / 110 C**
Chlorpyrifos	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**16 B / 35 C**
Coumaphos	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**No MTCA value**
Demeton O	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**0.64 B / 6.4 C**
Demeton S	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**0.64 B / 6.4 C**
Diazinon	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**11 B / 25 C**
Dichlorvos	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**0.3 B / 3.0 C**
Dimethoate	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**35 B / 77 C**
Disulfoton	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**0.64 B / 1.4 C**
EPN	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**0.16 B / 0.35 C**
Ethoprop	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**No MTCA value**
Fensulfothion	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**No MTCA value**
Fenthion	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**No MTCA value**
Malathion	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**320 B / 700 C**
Merphos	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**0.24 B / 0.53 C**
Methyl parathion	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**4.0 B / 8.8 C**
Mevinphos (Phosdrin)	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**No MTCA value**
Monocrotophos	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**No MTCA value**
Naled (Dibrom)	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**16 B / 35 C**
Parathion, ethyl	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**96 B / 210 C**
Phorate	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**3.2 B / 7.0 C**
Ronnel (Fenchlorphos)	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**400 B / 880 C**
Sulfotep	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**No MTCA value**
Sulprofos (Bolstar)	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**No MTCA value**
TEPP	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**No MTCA value**
Tetrachlorvinphos	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**3.6 B / 36 C**
Tokuthion (Prothiofos)	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**3.6 B / 36 C**
Trichloronate	ND<0.568	ND<0.538	ND<0.575	ND<0.610	ND<0.595	ND<0.595	**No MTCA value**

B / C: Where indicated, the most stringent MTCA B and C Cancer cleanup levels are shown; where MTCA C Cancer levels are not available, non-cancer values are provided.

8.2 Expanded Soil Sampling Investigation

As part of the Expanded investigation, composite soil samples were collected from surface / near-surface soils within the area of the former greenhouses (removed in 2021), as well as from the previously subdivided COMP1 through COMP6 agricultural areas composing the *subject property*. The following sample protocols were performed for each composite soil sample:

- **Former Greenhouse Area:** Within the vicinity of the former greenhouse area, 15 random grab samples were collected from surface and near-surface soil at depths between 0" - 6" using clean nitrile gloves, and a shovel.

- **Former Agricultural Fields:** The agricultural fields for parcels (west to east) 047, 048, 008, 024, 025, 018, 039, and 037, were previously sub-divided into six (6) sampling segments (COMP1 – COMP6), at approximately two (2) acres in size. These same sample segments were once again sampled, although this time for laboratory analysis of an expanded list of metals, and an additional list of pesticides requested by Ecology, including Organophosphorous (OPP) and carbamate pesticides. The sampling segments are shown on **Figure 7** as COMP1 through COMP6. Within each sampling segment, 15 random grab samples were collected from surface and near surface soil (i.e., upper six [6] inches), using a shovel and clean nitrile gloves.

8.2.1 Soil Sampling Methodology

At each random grab sample location, a one (1) foot by one (1) foot square plug of soil, approximately eight (8) inches deep, was removed using a shovel. To prevent cross-contamination, each grab sample was collected from surface and near-surface soils (i.e., upper six [6] inches) from the center of the plug that had not come in contact with the shovel. The grab samples were combined and thoroughly mixed within a one-gallon plastic ziploc bag, from which two (2), eight (8) ounce soil jars were filled to capacity.

Nitrile gloves were changed after composite sampling of soil in each sample unit to prevent additional cross-contamination. Each clean eight (8) ounce glass jar was filled to capacity (i.e., no headspace), and sealed with threaded, teflon-lined caps. The sample jars were uniquely labeled, logged on a chain-of-custody document, and placed on ice in an insulated portable cooler.

8.2.2 Laboratory Analysis of Soil Samples

As previously indicated, the composite soil samples were split into two (2) eight (8) ounce soil jars. One (1) composite soil sample from each sampled area was submitted to Apex Laboratories in Tigard, Oregon, for laboratory analysis of RCRA eight (8) metals by EPA Method 6020B, and OPP pesticides by EPA Method 8270E; COMP1 and COMP3 were additionally analyzed for dieldrin by EPA Method 8081B. In addition, each of the second split soil samples were submitted to Pacific Agricultural Laboratory in Sherwood, Oregon, for laboratory analysis of carbamate pesticides.

N

0 120
60
(FEET)

SERVICE STEEL AEROSPACE

COMMERCIAL PROPERTY

CRYSTAL DISTRIBUTION

COMMERCIAL PROPERTY

COMP 1
All 11 Carbamate Pesticides= ND
All 28 OPP Pesticides= ND
Arsenic= 2.82
Barium 35.5
Chromium= 11.5
Lead= 10.6
All Other Metals= ND

COMP 3
All 11 Carbamate Pesticides= ND
All 28 OPP Pesticides= ND
Arsenic= 5.11
Barium 43.9
Cadmium= 0.273
Chromium= 15.3
Lead= 8.10
All Other Metals= ND

COMP 5
All 11 Carbamate Pesticides= ND
All 28 OPP Pesticides= ND
Arsenic= 3.15
Barium 38.6
Chromium= 11.0
Lead= 7.65
All Other Metals= ND

COMP 6
All 11 Carbamate Pesticides= ND
All 28 OPP Pesticides= ND
Arsenic= 3.75
Barium 45.2
Chromium= 14.0
Lead= 7.74
All Other Metals= ND

TL 042017-3-047 (1.0 Acres)

GRASS

PUMPKIN

TL 042017-3-039 (1.86 Acres)

TL 042017-3-037 (1.65 Acres)

COMP 1

COMP 2

COMP 3

COMP 4

COMP 5

COMP 6

7223 48th STREET E.

TL 042017-3-024 (1.95 Acres)

TL 042017-3-025 (1.95 Acres)

TL 042017-3-018 (2.53 Acres)

GH COMP6
GH COMP7
GH COMP8
GH COMP9
GH COMP5
GH COMP4
GH COMP3
GH COMP2
GH COMP1

7601 48th STREET E.

TL 042017-3-031 (2.15 Acres)

7109 48th STREET E.

TL 042017-3-048 (1.92 Acres)

7111 48th STREET E.

TL 042017-3-008 (1.92 Acres)

7305 48th STREET E.

Former Heating Oil AST & UST

Trash

7501 48th STREET E.

TL 042017-3-040 (0.46 Acres)

7511 & 7519 48th STREET E.

TL 042017-3-029 (0.35 Acres)

48th STREET E.

Drainage Ditch

48th STREET COURT E.

Drainage Ditch

COMP 2
All 11 Carbamate Pesticides= ND
All 28 OPP Pesticides= ND
Arsenic= 2.82
Barium 36.1
Chromium= 13.3
Lead= 6.63
All Other Metals= ND

PROPERTY

COMP 4
All 11 Carbamate Pesticides= ND
All 28 OPP Pesticides= ND
Arsenic= 3.98
Barium 42.0
Chromium= 14.1
Lead= 9.62
All Other Metals= ND

COMP GH1-9
All 11 Carbamate Pesticides= ND
All 28 OPP Pesticides= ND
Arsenic= 3.92
Barium 41.5
Chromium= 16.6
Lead= 9.69
All Other Metals= ND

49th STREET E.

Private D

Earth

LEGEND

- Building
- Property Line
- TL 042017-3-047 (1.0 Acres) — Tax Lot Number & Acres
- Composite Soil Sample

Carbamate Pesticides per EPA Method 632;
Organophosphorus Pesticides per Method 8141B;
Total Metals per EPA Method 6020B;
All units in parts per million (ppb);
ND= Not Detected

COMP 2
All 11 Carbamate Pesticides= ND
All 28 OPP Pesticides= ND
Arsenic= 2.82
Barium 36.1
Chromium= 13.3
Lead= 6.63
All Other Metals= ND

FIGURE #: 7

COMPOSITE SOIL SAMPLING LOCATIONS AND RESULTS – SEPTEMBER 2023
PAPE MACHINERY
7109 TO 7601 48th STREET E., FIFE, WASHINGTON

PROJECT CODE: PAP182PH1.21E
DATE: 12/20/23
SCALE: 1"=120'
DRAWN: K.D.DESIGNS
CHECKED: STEVE OMO

PORTLAND OFFICE
25195 SW Parkway Ave.,#207
Wilsonville, OR
ph: 503.570.9484

EUGENE OFFICE
32986 Roberts Ct.
Coburg, OR
ph: 541.484.9484

www.BBAENV.COM

BB&A ENVIRONMENTAL

Per the approved work plan, a full composite soil sample was collected from all remaining composite samples, and submitted to Ceres Analytical Laboratory in El Dorado Hills, California, for analysis of dioxins by EPA Method 1613B.

8.2.3 Soil Analytical Results – Additional Pesticides

Laboratory analysis of the composite soil samples did not detect any of the 11 carbamate pesticides analyzed for by EPA Method 1613B, or 28 OPP pesticides analyzed for by EPA Method 8270E. In general, the non-detect reporting limits were orders of magnitude below the most stringent MTCA Method B and C cleanup levels. The analytical results are summarized on **Tables 5** and **6**, and the complete Laboratory Report is provided in **Appendix A**. Based on the analytical results, OPP and carbamate pesticides do not appear to have been utilized at the *subject property* as part of agricultural use.

Table 5: Soil Analytical Results – Carbamate Pesticides

Multiple Parcels, 7109 - 7519 48th Street E, Fife, Washington

All concentrations in parts per million (ppm) or milligrams per kilogram (mg/Kg).
ND <0.0067 : Indicates not detected above method-reporting limit value identified.
Highlighted MTCA Cleanup values indicate reporting limit greater than MTCA B / C cleanup levels.

Carbamate Pesticides (1613B)	Surface Soil Sample ID (0"-6")							MTCA Method A Cleanup Levels
	COMP1	COMP2	COMP3	COMP4	COMP5	COMP6	COMP GH1-9	
3-Hydroxycarbofuran	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	**No MTCA value**
Aldicarb	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	**80 B / 3,500 C**
Aldicarb Sulfone	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	**80 B / 3,500 C**
Bendiocarb	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	**No MTCA value**
Carbaryl	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	**8,000 B / 350,000 C**
Carbofuran	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	**400 B / 18,000 C**
Methiocarb	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	**No MTCA value**
Methomyl	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	**2,000 B / 88,000 C**
Oxamyl	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	**2,000 B / 88,000 C**
Propoxur (Baygon)	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	**320 B / 14,000 C**
Thiobencarb	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	ND<0.0067	**800 B / 35,000 C**

B / C: Where indicated, no MTCA A cleanup level is available, and instead, the most stringent MTCA B and C cancer cleanup levels are shown (Note, that where MTCA Cancer levels are not available, non-cancer values are provided).

Table 6: Soil Analytical Results – OPP Pesticides

Multiple Parcels, 7109 - 7519 48th Street E, Fife, Washington

All concentrations in parts per million (ppm) or milligrams per kilogram (mg/Kg).
ND <0.0109 : Indicates not detected above method-reporting limit value identified.

Organochlorine Pesticides (8081B)	Surface Soil Sample ID (0"-6")							MTCA Method Cleanup Levels
	COMP1	COMP2	COMP3	COMP4	COMP5	COMP6	COMP GH1-9	
Azinphos methyl (Guthion)	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**240 B / 11,000 C**
Chlorpyrifos	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**80 B / 3,500 C**
Coumaphos	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**No MTCA value**
Demeton O	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**3.2 B / 140 C**
Demeton S	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**3.2 B / 140 C**
Diazinon	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**56 B / 2,500 C**
Dichlorvos	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**3.4 B / 450 C**
Dimethoate	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**180 B / 7,700 C**
Disulfoton	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**3.2 B / 140 C**
EPN	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**0.8 B / 35 C**
Ethoprop	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**No MTCA value**
Fensulfothion	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**No MTCA value**
Fenthion	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**No MTCA value**
Malathion	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**1600 B / 70,000 C**
Merphos	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**2.4 B / 110 C**
Methyl parathion	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**20 B / 880 C**
Mevinphos (Phosdrin)	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**No MTCA value**
Monocrotophos	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**No MTCA value**
Naled (Dibrom)	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**160 B / 7,000 C**
Parathion, ethyl	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**480 B / 21,000 C**
Phorate	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**16 B / 700 C**
Ronnel (Fenchlorphos)	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**4,000 B / 180,000 C**
Sulfotep	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**No MTCA value**
Sulprofos (Bolstar)	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**No MTCA value**
TEPP	ND<0.208	ND<0.207	ND<0.209	ND<0.212	ND<0.211	ND<0.0529	ND<0.209	**No MTCA value**
Tetrachlorvinphos	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**42 B / 5,500 C**
Tokuthion (Prothiofos)	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**42 B / 5,500 C**
Trichloronate	ND<0.0519	ND<0.0517	ND<0.0521	ND<0.053	ND<0.0528	ND<0.0529	ND<0.0522	**No MTCA value**

B / C: Where indicated, the most stringent MTCA B and C Cancer cleanup levels are shown; where MTCA C Cancer levels are not available, non-cancer values are provided.

8.2.4 Soil Analytical Results – Dioxins

Laboratory analysis of the full composite soil sample for dioxins was completed by Ceres Laboratory in El Dorado Hills, California, using EPA Method 1613B. The full composite soil sample was analyzed for tetra through octa chlorinated dioxins, and dibenzofurans. None of these contaminants were detected above laboratory reporting limits (RIs) or method-detection limits (MDLs). The complete Laboratory Report is provided in **Appendix A**. Based on the analytical results, the *subject property* does not appear to have been impacted by dioxins.

8.2.5 Soil Analytical Results – Metals

Each of the composite soil samples were submitted for laboratory analysis of eight (8) priority RCRA metals by EPA Method 6020B. Metals analyzed for included: arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. The analytical results are summarized below in **Table 7**. For assessment purposes, included in **Table 7** are the 90th percentile of natural background soil metal concentrations for Puget Sound (Pierce County included), as documented in the report titled, *Natural Background Soil Concentrations in Washington State*, Toxics Cleanup Program, Department of Ecology, October 1994. The detected metal concentrations were found to be below naturally occurring background concentrations for the Puget Sound region, which includes Pierce County, as well as those values calculated statewide for the State of Washington as well.

Table 7: Soil Analytical Results – RCRA 8 Metals

Multiple Parcels, 7109 - 7519 48th Street E, Fife, Washington

All concentrations in parts per million (ppm) or milligrams per kilogram (mg/Kg).
ND <0.225 : Indicates not detected above method-reporting limit value identified.
Highlighted MTCA Cleanup values indicate reporting limit greater than MTCA B / C cleanup levels.
E: Estimate
USGS: The 90th percentile for barium is based on a USGS report titled, *Background Concentrations of Metals in Soil from Selected Regions in the State of Washington*, 1995.

RCRA Metals (6020B)	Surface Soil Sample ID (0"-6")							90th Percentile Naturally Occurring Background Metal Concentrations
	COMP1	COMP2	COMP3	COMP4	COMP5	COMP6	COMP GH1-9	
Arsenic	**2.82**	**2.82**	**5.11**	**3.98**	**3.15**	**3.75**	**3.82**	7.3
Barium	**35.3**	**36.1**	**43.9**	**42.0**	**38.6**	**45.2**	**41.5**	760^{USGS}
Cadmium	ND<0.225	ND<0.214	**0.273**	ND<0.232	ND<0.228	ND<0.224	ND<0.223	0.77
Chromium	**11.5**	**13.3**	**15.3**	**14.1**	**11.0**	**14.0**	**16.6**	48.15
Lead	**10.6**	**6.63**	**8.10**	**9.62**	**7.65**	**7.74**	**9.69**	16.83
Mercury	ND<0.090	ND<0.0856	ND<0.0916	ND<0.0929	ND<0.0912	ND<0.0897	ND<0.0893	0.07
Selenium	ND<1.13	ND<1.07	ND<1.15	ND<1.16	ND<1.14	ND<1.12	ND<1.12	0.78E
Silver	ND<0.225	ND<0.214	ND<0.229	ND<0.232	ND<0.228	ND<0.224	ND<0.223	0.61

8.3 Dieldrin Discussion

The surface and subsurface investigations conducted in February 2021, March 2023, and September 2023, identified dieldrin in surface and near surface soils at the *subject property*, as the only contaminant of concern, based on concentrations exceeding the MTCA Method B Cancer cleanup levels. No other pesticides were detected above MTCA Method B cleanup levels. However, based on the proposed Conceptual Site Model and future redevelopment of the *subject property* as an industrial property, MTCA Method C cleanup levels are deemed appropriate for the *subject property*. To address the leaching to groundwater pathway, groundwater beneath the western portion of the *subject property* (where dieldrin exceeded MTCA Method B levels) was sampled and analyzed for organochlorine and OPP pesticides. The results indicate that organochlorine and OPP pesticides are not leaching to groundwater. As such, this exposure pathway is considered incomplete.

Based on the findings of this report, and previous investigations, BB&A is of the opinion that current soil and groundwater conditions are protective of human-health and the environment.

9.0 SUMMARY

The results of this Focused Remedial Investigation are summarized as follows:

Site Description

- The *subject property* is an approximately 18-acre, former agricultural- and residential-use property located at 7109 to 7601 (north side of) 48th Street East, in Fife, Washington. Pierce County identifies the *subject property* to be composed of the following parcels within map 042017-3: 047, 048, 008, 024, 025, 018, 039, 040, 037, 038, 029, and 031. At the time of the remedial investigation, the *subject property* was noted to be completely bare ground and absent of any former residential structures or agricultural fields or structures (e.g., greenhouses).

- Adjacent and nearby properties to the north and west are primarily of industrial use, and adjacent and nearby properties to the south and east are predominantly of residential and agricultural use. Papé Properties also owns the three (3) industrial and residential properties (5.65-acres) to the east, and has plans to redevelop these properties for industrial use.

- **History and Proposed Redevelopment:** The *subject property* appears to have been predominantly of agricultural use since at least the 1940's, with several residences along the southern portion of the property, adjacent to 48th Street East. Papé Properties has plans to redevelop the *subject property* (i.e., all tax lots) as industrial properties, including a Papé Machinery facility for sales, service and repair of large earth moving equipment, such as excavators and tractors, and Papé Material Handling Facility for sales, service, and rental of forklifts, and high-lift machinery.

Focused Phase II Investigation – February 2021

- In February 2021, a Focused Phase II ESA was conducted at the *subject property.* As part of the focused investigation, composite soil samples were collected from surface soils immediately beneath the plant-growing tables in the former greenhouses, as well as from the agricultural fields composing the *subject property*. Each composite sample was composed of 10 random surface / near-surface soil samples. Similarly, the agricultural parcels were subdivided into six (6) segments, where 10 random grab samples were collected and combined for six (6) composite soil samples (collected just beneath the root zone). Clean nitrile gloves were changed between samples to prevent cross-contamination.

Soil Analytical Results: Laboratory analysis of the composite soil samples detected the herbicide 2,4-D in four (4) greenhouse composite samples and the following pesticides in most of the greenhouse and agricultural field samples: Aldrin, beta-BHC, Lindane, cis-Chlordane, trans-Chlordane, 4,4'-DDD, 4,4'-DDE, 4.4'-DDT, Dieldrin, Endosulfan II, Endosulfan Sulfate, Endrin Ketone, and Heptachlor Epoxide.

MTCA Cleanup Level Comparison: To evaluate the herbicide and pesticide analytical results, the detected concentrations were compared to applicable MTCA Method B Cancer cleanup levels for unrestricted land use. Dieldrin was found to slightly exceed the *carcinogenic* MTCA Method B cleanup level in composite soil samples COMP1 and COMP3 from the west-half agricultural fields; however, the detected concentrations were well below MTCA C Cancer cleanup levels for industrial use. All other detected herbicide and pesticide concentrations were generally orders of magnitude below MTCA Method B / C cleanup levels.

- **Water Well Sampling**: As part of the Focused Phase II ESA, the water well at 7519 48th Street E was sampled for dissolved arsenic, nitrates, organochlorine pesticides, and herbicides. None of the potential contaminants analyzed for were detected above method-reporting limits.

Remedial Investigation – March 2023

- In March 2023, BB&A conducted a Focused Remedial Investigation with the purpose of defining the magnitude and extent of dieldrin in soil at the *subject property*. More specifically, the former Composite 1 (COMP 1) and Composite 3 (COMP 3) sample units, where dieldrin exceeded MTCA Method B Cancer Cleanup Levels, were subdivided and resampled. The area identified as COMP 1, on the west portion of the *subject property* (composed of portions of tax lots 047 and 048), was subdivided into six (6) approximately equal sub-units. The area identified as COMP 3, identified as tax lot 024, was subdivided into five (5) approximately equal sub-units. Within each sub-unit, 10 random grab samples were collected at depths of two (2) to eight (8) inches below the root zone, and again at a depth of 14 to 18 inches. The 10 sub-unit grab samples were combined and mixed within a one-gallon plastic ziploc bag, from which eight (8) ounce soil jars were filled to capacity.

  Surface / Shallow Sub-Unit Sampling Results: Laboratory analysis detected dieldrin in all of the shallow soil samples (i.e., two [2] to six [6] inch depth) at fairly consistent concentrations: dieldrin was detected in the sub-units of the COMP 1 sample unit at concentrations ranging from 0.08 to 0.118 ppm; and dieldrin was detected in the sub-units of the COMP 3 sample unit at concentrations ranging from 0.124 to 0.153 ppm – all exceeding the MTCA Method B (Cancer) cleanup level of 0.063 ppm; yet all well below the MTCA C Cancer cleanup levels for industrial use.

Deeper Sub-Unit Sampling Results: Within the COMP 1 sub-units, dieldrin was detected in the deeper soil samples (i.e., 14" to 18") at concentrations ranging from 0.0375 to 0.101 ppm (mean value of 0.077 ppm), with dieldrin concentrations in two (2) of the deeper sub-unit samples below the MTCA Method B cleanup level, and all well below the MTCA C Cancer cleanup levels for industrial use.

Within the COMP 3 sub-units, dieldrin was detected in the deeper soil samples (i.e., 14" to 18") at concentrations ranging from 0.0274 to 0.107 ppm, with a mean value of 0.063 ppm (at MTCA Method B cleanup level), and dieldrin concentrations in three (3) sub-units below the MTCA Method B cleanup level of 0.063 ppm, and all well below the MTCA C Cancer cleanup levels for industrial use.

Conceptual Site Model (CSM): BB&A developed a preliminary CSM for the *subject property*. The results of the CSM identified the following receptors and exposure pathways as applicable:

- Based on proposed future industrial use of the *subject property* and adjacent properties to the east, MTCA Method C Cancer cleanup levels for industrial land use are applicable for soil and groundwater at the *subject property*;
- Ingestion, dermal contact, or inhalation of soil particulates by Excavation Workers;
- Ingestion, dermal contact, and inhalation with groundwater by Excavation Workers (Shallow groundwater [less than 15 feet] as a drinking water source is considered an incomplete pathway); and
- Inhalation of trench air within open excavations, or vapor intrusion into future onsite buildings.

Expanded Remedial Investigation – September 2023

- In September 2023, BB&A conducted an approved Expanded Remedial Investigation, which included:
  - Advancing six (6) push-probe borings to sample groundwater, for analysis of pesticides, beneath tax lots 047, 048, 008, 024, and 025 (of Map #042017-3);
  - Sampling surface and near surface soil from tax lots 047, 048, 008, 024, 025, 018, 039, 040, and 037 (of Map #042017-3), for laboratory analysis of metals and an expanded list of pesticides, specifically Organophosphorous (OPP) and carbamate pesticides; and
  - Collect one (1) full composite soil sample from all of the tax lots listed above for laboratory analysis for dioxin.

Push-Probe Groundwater Analytical Results: Six (6) push-probe borings were advanced on the western portion of the *subject property* using a track-mounted Geoprobe® 7822, and Geoprobe® tooling. Each push-probe boring was advanced to a depth of 15 feet below land surface, and temporary PVC slotted casing was used to intercept groundwater.

Push-probes P1 and P2 were placed on the sample unit COMP1; push-probe P3 was placed on sample unit COMP2; push-probes P4 and P5 were placed on sample unit COMP3; and push-probe P6 was placed on sample unit COMP4. Groundwater samples from each of the temporary borings were analyzed for Organochlorine pesticides per EPA method 8081B, and Organophosphorus (OPP) pesticides per EPA Method 8270E. Laboratory analysis of the groundwater samples did not detect any of the 22 organochlorine pesticides analyzed by EPA Method 8081B; nor were any of the 28 OPP pesticides analyzed by EPA Method 8270E. Most importantly, dieldrin, the only contaminant of concern in soil, was not detected above method-reporting limits in groundwater. The results indicate that no historical use of pesticides, including dieldrin and/or aldrin, has not adversely impacted groundwater beneath the *subject property*.

Surface Soil Analytical Results – Sept. 2023: As part of the Expanded investigation, composite soil samples were collected from surface / near-surface soils within the area of the former greenhouses (removed in 2021), as well as from the previously subdivided COMP1 through COMP6 agricultural areas (i.e., tax lots 047, 048, 008, 024, 025, 018, 039, and 037) composing the *subject property*. Each of the composite samples were composed of 15 random grab samples collected from surface and near-surface soil at depths between 0" - 6" using clean nitrile gloves, and a shovel. It should be noted that the composite soil samples were more heavily weighted on the upper four (4) inches of soil. Care was taken to eliminate cross-contamination. Each of the composite soil samples were analyzed for RCRA eight (8) metals, OPP pesticides, and carbamate pesticides.

Laboratory analysis of the composite soil samples did not detect any of the 11 carbamate pesticides analyzed for by EPA Method 1613B, or 28 OPP pesticides analyzed for by EPA Method 8270E. Based on the analytical results, OPP and carbamate pesticides do not appear to have been utilized at the *subject property* as part of agricultural use. Detected metal concentrations were below naturally occurring background concentrations for the Puget Sound region, which includes Pierce County.

10.0 CONCLUSIONS AND OPINIONS

Based on the findings of the Remedial Investigation, the following conclusions, opinions, and recommendations are provided:

- Historical application of chlorinated pesticides occurred on former agricultural fields of the *subject property.* Dieldrin was detected in numerous composite soil samples from the uppermost six (6) inches, consistently at concentrations exceeding the MTCA Method B Cancer cleanup level, but well below the MTCA Method B Non-Cancer cleanup level, and an order of magnitude below the MTCA Method C Cancer cleanup level for industrial use.

- Papé Properties plans to redevelop the *subject property* (i.e., all tax lots, plus adjacent tax lots to the east) as industrial properties, including a Papé Machinery facility for sales, service and repair of large earth moving equipment, such as excavators and tractors, and Papé Material Handling Facility for sales, service, and rental of forklifts, and high-lift machinery.

- Based on the Conceptual Site Model (CSM) developed for the *subject property*, and proposed future industrial use of the *subject property*, MTCA Method C Cancer cleanup levels are reasonably appropriate for the *subject property*. All soil samples have been detected well below MTCA Method C cleanup levels. Adverse exposure to dieldrin by future on-site workers is not likely. No pesticides were detected in groundwater beneath the *subject property*, therefore, the leaching to groundwater pathway is considered incomplete.

- Based on the soil and groundwater results, and future proposed redevelopment of the *subject property*, BB&A is of the opinion that the site is protective of human-health and the environment, and recommends that a no further action (NFA) determination be issued for the *subject property*.

11.0 LIMITATIONS

The professional services of BB&A Environmental have been rendered using the degree of care and skill ordinarily exercised under similar circumstances by reputable environmental consulting firms practicing in this or similar locations. No other warranty expressed or implied is made.

Soil samples were analyzed to identify and delineate surface and near-surface impact in areas most likely to have been impacted by historical applications of chlorinated pesticides. The results of their analyses only indicate the presence or absence of pesticides (i.e., specifically dieldrin) in those discrete and composited sample locations. Analytical data from the laboratory samples should only be considered as indicators of site conditions and not a guarantee of the absence of pesticides in areas not sampled.

The conclusions presented in this report are based only on the observations made during field investigation and data provided by others. The accuracy of these findings is based upon the accuracy of data and information provided by others. The findings of this assessment should not be considered as scientific certainties, but rather as professional opinion based upon selected and limited data.

If you have any questions concerning the information contained in this report, please do not hesitate to contact us.

Stephen M. Omo, RG
Project Manager / Geologist

Randall J. Boese, RG/LHG
Senior Hydrogeologist

APPENDIX A

Laboratory Report and Chain-of-Custody Documents

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

Thursday, September 28, 2023

Steve Omo
BB&A Environmental - Wilsonville
25195 SW Parkway Ave, Suite #207
Wilsonville, OR 97070

RE: A3I0893 - Fife AG Fields - PAP182MAG.23E

Thank you for using Apex Laboratories. We greatly appreciate your business and strive to provide the highest quality services to the environmental industry.

Enclosed are the results of analyses for work order A3I0893, which was received by the laboratory on 9/8/2023 at 11:27:00AM.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: DAuvil@apex-labs.com, or by phone at 503-718-2323.

Please note: All samples will be disposed of within 30 days of sample receipt, unless prior arrangements have been made.

Cooler Receipt Information					
Acceptable Receipt Temperature is less than, or equal to, 6 degC (not frozen), or received on ice the same day as sampling.					
(See Cooler Receipt Form for details)					
Cooler #1	2.5	degC	Cooler #2	3.7	degC

This Final Report is the official version of the data results for this sample submission, unless superseded by a subsequent, labeled amended report.
All other deliverables derived from this data, including Electronic Data Deliverables (EDDs), CLP-like forms, client requested summary sheets, and all other products are considered secondary to this report.

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document(s) and updated by any subsequent written communications. This analytical report must be reproduced in its entirety.

Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Client Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PAP182-COMP 1	A3I0893-01	Soil	09/07/23 14:20	09/08/23 11:27
PAP182-COMP 2	A3I0893-02	Soil	09/07/23 13:45	09/08/23 11:27
PAP182-COMP 3	A3I0893-03	Soil	09/07/23 12:10	09/08/23 11:27
PAP182-COMP 4	A3I0893-04	Soil	09/07/23 12:45	09/08/23 11:27
PAP182-COMP 5	A3I0893-05	Soil	09/07/23 11:15	09/08/23 11:27
PAP182-COMP 6	A3I0893-06	Soil	09/07/23 15:10	09/08/23 11:27
PAP182-COMP GH 1-9	A3I0893-07	Soil	09/07/23 10:10	09/08/23 11:27
PAP182-P1-GW	A3I0893-08	Water	09/07/23 15:45	09/08/23 11:27
PAP182-P2-GW	A3I0893-09	Water	09/07/23 15:00	09/08/23 11:27
PAP182-P3-GW	A3I0893-10	Water	09/07/23 14:30	09/08/23 11:27
PAP182-P4-GW	A3I0893-11	Water	09/07/23 13:00	09/08/23 11:27
PAP182-P5-GW	A3I0893-12	Water	09/07/23 11:45	09/08/23 11:27
PAP182-P6-GW	A3I0893-13	Water	09/07/23 11:15	09/08/23 11:27
PAP182- FULL COMP	A3I0893-14	Soil	09/07/23 16:00	09/08/23 11:27

Apex Laboratories

Darrell Auvil, Client Services Manager

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6700 S.W. Sandburg Street
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503-718-2323
ORELAP ID: **OR100062**

BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-COMP 1 (A3I0893-01RE3)				**Matrix: Soil**		**Batch: 23I0535**		**C-05**
Dieldrin	**38.7**	---	2.06	ug/kg dry	1	09/19/23 15:20	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery: 56 %*		*Limits: 42-129 %*	*1*	*09/19/23 15:20*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*92 %*	*55-130 %*	*1*	*09/19/23 15:20*	*EPA 8081B*	
PAP182-COMP 3 (A3I0893-03RE3)				**Matrix: Soil**		**Batch: 23I0535**		**C-05**
Dieldrin	**92.8**	---	2.08	ug/kg dry	1	09/19/23 15:38	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery: 76 %*		*Limits: 42-129 %*	*1*	*09/19/23 15:38*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*118 %*	*55-130 %*	*1*	*09/19/23 15:38*	*EPA 8081B*	
PAP182-P1-GW (A3I0893-08)				**Matrix: Water**		**Batch: 23I0438**		
Aldrin	ND	---	0.0109	ug/L	1	09/15/23 15:32	EPA 8081B	Q-30
alpha-BHC	ND	---	0.0109	ug/L	1	09/15/23 15:32	EPA 8081B	
beta-BHC	ND	---	0.0109	ug/L	1	09/15/23 15:32	EPA 8081B	
delta-BHC	ND	---	0.0109	ug/L	1	09/15/23 15:32	EPA 8081B	
gamma-BHC (Lindane)	ND	---	0.0109	ug/L	1	09/15/23 15:32	EPA 8081B	
cis-Chlordane	ND	---	0.0109	ug/L	1	09/15/23 15:32	EPA 8081B	
trans-Chlordane	ND	---	0.0109	ug/L	1	09/15/23 15:32	EPA 8081B	
4,4'-DDD	ND	---	0.0109	ug/L	1	09/15/23 15:32	EPA 8081B	
4,4'-DDE	ND	---	0.0109	ug/L	1	09/15/23 15:32	EPA 8081B	
4,4'-DDT	ND	---	0.0109	ug/L	1	09/15/23 15:32	EPA 8081B	
Dieldrin	ND	---	0.0109	ug/L	1	09/15/23 15:32	EPA 8081B	
Endosulfan I	ND	---	0.0109	ug/L	1	09/15/23 15:32	EPA 8081B	
Endosulfan II	ND	---	0.0109	ug/L	1	09/15/23 15:32	EPA 8081B	
Endosulfan sulfate	ND	---	0.0109	ug/L	1	09/15/23 15:32	EPA 8081B	
Endrin	ND	---	0.0109	ug/L	1	09/15/23 15:32	EPA 8081B	
Endrin aldehyde [2C]	ND	---	0.0109	ug/L	1	09/15/23 15:32	EPA 8081B	
Endrin ketone	ND	---	0.0109	ug/L	1	09/15/23 15:32	EPA 8081B	
Heptachlor [2C]	ND	---	0.0109	ug/L	1	09/15/23 15:32	EPA 8081B	
Heptachlor epoxide	ND	---	0.0109	ug/L	1	09/15/23 15:32	EPA 8081B	
Methoxychlor	ND	---	0.0761	ug/L	1	09/15/23 15:32	EPA 8081B	
Chlordane (Technical) [2C]	ND	---	0.408	ug/L	1	09/15/23 15:32	EPA 8081B	
Toxaphene (Total) [2C]	ND	---	0.408	ug/L	1	09/15/23 15:32	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery: 66 %*		*Limits: 25-140 %*	*1*	*09/15/23 15:32*	*EPA 8081B*	

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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

BB&A Environmental - Wilsonville	Project: Fife AG Fields	
25195 SW Parkway Ave, Suite #207	Project Number: PAP182MAG.23E	Report ID:
Wilsonville, OR 97070	Project Manager: Steve Omo	A3I0893 - 09 28 23 1238

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-P1-GW (A3I0893-08)				**Matrix: Water**		**Batch: 23I0438**		
Surrogate: Decachlorobiphenyl (Surr)		*Recovery: 80 %*	*Limits: 30-135 %*		*1*	*09/15/23 15:32*	*EPA 8081B*	
PAP182-P2-GW (A3I0893-09)				**Matrix: Water**		**Batch: 23I0438**		
Aldrin [2C]	ND	---	0.0120	ug/L	1	09/15/23 15:48	EPA 8081B	Q-30
alpha-BHC [2C]	ND	---	0.0120	ug/L	1	09/15/23 15:48	EPA 8081B	
beta-BHC [2C]	ND	---	0.0120	ug/L	1	09/15/23 15:48	EPA 8081B	
delta-BHC [2C]	ND	---	0.0120	ug/L	1	09/15/23 15:48	EPA 8081B	
gamma-BHC (Lindane) [2C]	ND	---	0.0120	ug/L	1	09/15/23 15:48	EPA 8081B	
cis-Chlordane [2C]	ND	---	0.0120	ug/L	1	09/15/23 15:48	EPA 8081B	
trans-Chlordane [2C]	ND	---	0.0120	ug/L	1	09/15/23 15:48	EPA 8081B	
4,4'-DDD [2C]	ND	---	0.0120	ug/L	1	09/15/23 15:48	EPA 8081B	
4,4'-DDE [2C]	ND	---	0.0120	ug/L	1	09/15/23 15:48	EPA 8081B	
4,4'-DDT [2C]	ND	---	0.0120	ug/L	1	09/15/23 15:48	EPA 8081B	
Dieldrin [2C]	ND	---	0.0120	ug/L	1	09/15/23 15:48	EPA 8081B	
Endosulfan I [2C]	ND	---	0.0120	ug/L	1	09/15/23 15:48	EPA 8081B	
Endosulfan II [2C]	ND	---	0.0120	ug/L	1	09/15/23 15:48	EPA 8081B	
Endosulfan sulfate	ND	---	0.0120	ug/L	1	09/15/23 15:48	EPA 8081B	
Endrin [2C]	ND	---	0.0120	ug/L	1	09/15/23 15:48	EPA 8081B	
Endrin aldehyde [2C]	ND	---	0.0120	ug/L	1	09/15/23 15:48	EPA 8081B	
Endrin ketone	ND	---	0.0120	ug/L	1	09/15/23 15:48	EPA 8081B	
Heptachlor [2C]	ND	---	0.0120	ug/L	1	09/15/23 15:48	EPA 8081B	
Heptachlor epoxide [2C]	ND	---	0.0120	ug/L	1	09/15/23 15:48	EPA 8081B	
Methoxychlor	ND	---	0.0843	ug/L	1	09/15/23 15:48	EPA 8081B	
Chlordane (Technical) [2C]	ND	---	0.452	ug/L	1	09/15/23 15:48	EPA 8081B	
Toxaphene (Total) [2C]	ND	---	0.452	ug/L	1	09/15/23 15:48	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery: 74 %*	*Limits: 25-140 %*		*1*	*09/15/23 15:48*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*91 %*	*30-135 %*	*1*	*09/15/23 15:48*	*EPA 8081B*	
PAP182-P3-GW (A3I0893-10)				**Matrix: Water**		**Batch: 23I0438**		
Aldrin [2C]	ND	---	0.0105	ug/L	1	09/15/23 16:05	EPA 8081B	Q-30
alpha-BHC [2C]	ND	---	0.0105	ug/L	1	09/15/23 16:05	EPA 8081B	
beta-BHC [2C]	ND	---	0.0105	ug/L	1	09/15/23 16:05	EPA 8081B	
delta-BHC [2C]	ND	---	0.0105	ug/L	1	09/15/23 16:05	EPA 8081B	
gamma-BHC (Lindane) [2C]	ND	---	0.0105	ug/L	1	09/15/23 16:05	EPA 8081B	

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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-P3-GW (A3I0893-10)				**Matrix: Water**		**Batch: 23I0438**		
cis-Chlordane [2C]	ND	---	0.0105	ug/L	1	09/15/23 16:05	EPA 8081B	
trans-Chlordane	ND	---	0.0105	ug/L	1	09/15/23 16:05	EPA 8081B	
4,4'-DDD [2C]	ND	---	0.0105	ug/L	1	09/15/23 16:05	EPA 8081B	
4,4'-DDE [2C]	ND	---	0.0105	ug/L	1	09/15/23 16:05	EPA 8081B	
4,4'-DDT [2C]	ND	---	0.0105	ug/L	1	09/15/23 16:05	EPA 8081B	
Dieldrin [2C]	ND	---	0.0105	ug/L	1	09/15/23 16:05	EPA 8081B	
Endosulfan I [2C]	ND	---	0.0105	ug/L	1	09/15/23 16:05	EPA 8081B	
Endosulfan II [2C]	ND	---	0.0105	ug/L	1	09/15/23 16:05	EPA 8081B	
Endosulfan sulfate	ND	---	0.0105	ug/L	1	09/15/23 16:05	EPA 8081B	
Endrin [2C]	ND	---	0.0105	ug/L	1	09/15/23 16:05	EPA 8081B	
Endrin aldehyde [2C]	ND	---	0.0105	ug/L	1	09/15/23 16:05	EPA 8081B	
Endrin ketone	ND	---	0.0105	ug/L	1	09/15/23 16:05	EPA 8081B	
Heptachlor [2C]	ND	---	0.0105	ug/L	1	09/15/23 16:05	EPA 8081B	
Heptachlor epoxide [2C]	ND	---	0.0105	ug/L	1	09/15/23 16:05	EPA 8081B	
Methoxychlor	ND	---	0.0737	ug/L	1	09/15/23 16:05	EPA 8081B	
Chlordane (Technical) [2C]	ND	---	0.395	ug/L	1	09/15/23 16:05	EPA 8081B	
Toxaphene (Total) [2C]	ND	---	0.395	ug/L	1	09/15/23 16:05	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*68 %*	*Limits: 25-140 %*	*1*	*09/15/23 16:05*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*78 %*	*30-135 %*	*1*	*09/15/23 16:05*	*EPA 8081B*	
PAP182-P4-GW (A3I0893-11)				**Matrix: Water**		**Batch: 23I0438**		
Aldrin [2C]	ND	---	0.0100	ug/L	1	09/15/23 16:21	EPA 8081B	Q-30
alpha-BHC [2C]	ND	---	0.0100	ug/L	1	09/15/23 16:21	EPA 8081B	
beta-BHC [2C]	ND	---	0.0100	ug/L	1	09/15/23 16:21	EPA 8081B	
delta-BHC [2C]	ND	---	0.0100	ug/L	1	09/15/23 16:21	EPA 8081B	
gamma-BHC (Lindane) [2C]	ND	---	0.0100	ug/L	1	09/15/23 16:21	EPA 8081B	
cis-Chlordane [2C]	ND	---	0.0100	ug/L	1	09/15/23 16:21	EPA 8081B	
trans-Chlordane [2C]	ND	---	0.0100	ug/L	1	09/15/23 16:21	EPA 8081B	
4,4'-DDD [2C]	ND	---	0.0100	ug/L	1	09/15/23 16:21	EPA 8081B	
4,4'-DDE [2C]	ND	---	0.0100	ug/L	1	09/15/23 16:21	EPA 8081B	
4,4'-DDT [2C]	ND	---	0.0100	ug/L	1	09/15/23 16:21	EPA 8081B	
Dieldrin [2C]	ND	---	0.0100	ug/L	1	09/15/23 16:21	EPA 8081B	
Endosulfan I [2C]	ND	---	0.0100	ug/L	1	09/15/23 16:21	EPA 8081B	

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ORELAP ID: **OR100062**

BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-P4-GW (A3I0893-11)				**Matrix: Water**		**Batch: 23I0438**		
Endosulfan II [2C]	ND	---	0.0100	ug/L	1	09/15/23 16:21	EPA 8081B	
Endosulfan sulfate	ND	---	0.0100	ug/L	1	09/15/23 16:21	EPA 8081B	
Endrin [2C]	ND	---	0.0100	ug/L	1	09/15/23 16:21	EPA 8081B	
Endrin aldehyde [2C]	ND	---	0.0100	ug/L	1	09/15/23 16:21	EPA 8081B	
Endrin ketone	ND	---	0.0100	ug/L	1	09/15/23 16:21	EPA 8081B	
Heptachlor [2C]	ND	---	0.0100	ug/L	1	09/15/23 16:21	EPA 8081B	
Heptachlor epoxide [2C]	ND	---	0.0100	ug/L	1	09/15/23 16:21	EPA 8081B	
Methoxychlor	ND	---	0.0700	ug/L	1	09/15/23 16:21	EPA 8081B	
Chlordane (Technical) [2C]	ND	---	0.375	ug/L	1	09/15/23 16:21	EPA 8081B	
Toxaphene (Total) [2C]	ND	---	0.375	ug/L	1	09/15/23 16:21	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*72 %*	*Limits: 25-140 %*	*1*	*09/15/23 16:21*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*84 %*	*30-135 %*	*1*	*09/15/23 16:21*	*EPA 8081B*	
PAP182-P5-GW (A3I0893-12)				**Matrix: Water**		**Batch: 23I0438**		
Aldrin [2C]	ND	---	0.0119	ug/L	1	09/15/23 16:37	EPA 8081B	Q-30
alpha-BHC [2C]	ND	---	0.0119	ug/L	1	09/15/23 16:37	EPA 8081B	
beta-BHC [2C]	ND	---	0.0119	ug/L	1	09/15/23 16:37	EPA 8081B	
delta-BHC [2C]	ND	---	0.0119	ug/L	1	09/15/23 16:37	EPA 8081B	
gamma-BHC (Lindane) [2C]	ND	---	0.0119	ug/L	1	09/15/23 16:37	EPA 8081B	
cis-Chlordane [2C]	ND	---	0.0119	ug/L	1	09/15/23 16:37	EPA 8081B	
trans-Chlordane	ND	---	0.0119	ug/L	1	09/15/23 16:37	EPA 8081B	
4,4'-DDD	ND	---	0.0119	ug/L	1	09/15/23 16:37	EPA 8081B	
4,4'-DDE [2C]	ND	---	0.0119	ug/L	1	09/15/23 16:37	EPA 8081B	
4,4'-DDT [2C]	ND	---	0.0119	ug/L	1	09/15/23 16:37	EPA 8081B	
Dieldrin [2C]	ND	---	0.0119	ug/L	1	09/15/23 16:37	EPA 8081B	
Endosulfan I [2C]	ND	---	0.0119	ug/L	1	09/15/23 16:37	EPA 8081B	
Endosulfan II [2C]	ND	---	0.0119	ug/L	1	09/15/23 16:37	EPA 8081B	
Endosulfan sulfate	ND	---	0.0119	ug/L	1	09/15/23 16:37	EPA 8081B	
Endrin [2C]	ND	---	0.0119	ug/L	1	09/15/23 16:37	EPA 8081B	
Endrin aldehyde [2C]	ND	---	0.0119	ug/L	1	09/15/23 16:37	EPA 8081B	
Endrin ketone	ND	---	0.0119	ug/L	1	09/15/23 16:37	EPA 8081B	
Heptachlor [2C]	ND	---	0.0119	ug/L	1	09/15/23 16:37	EPA 8081B	
Heptachlor epoxide [2C]	ND	---	0.0119	ug/L	1	09/15/23 16:37	EPA 8081B	

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BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-P5-GW (A3I0893-12)				**Matrix: Water**		**Batch: 23I0438**		
Methoxychlor	ND	---	0.0833	ug/L	1	09/15/23 16:37	EPA 8081B	
Chlordane (Technical) [2C]	ND	---	0.446	ug/L	1	09/15/23 16:37	EPA 8081B	
Toxaphene (Total) [2C]	ND	---	0.446	ug/L	1	09/15/23 16:37	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*78 %*	*Limits: 25-140 %*	*1*	*09/15/23 16:37*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*93 %*	*30-135 %*	*1*	*09/15/23 16:37*	*EPA 8081B*	
PAP182-P6-GW (A3I0893-13)				**Matrix: Water**		**Batch: 23I0438**		
Aldrin [2C]	ND	---	0.0106	ug/L	1	09/15/23 16:53	EPA 8081B	Q-30
alpha-BHC [2C]	ND	---	0.0106	ug/L	1	09/15/23 16:53	EPA 8081B	
beta-BHC [2C]	ND	---	0.0106	ug/L	1	09/15/23 16:53	EPA 8081B	
delta-BHC [2C]	ND	---	0.0106	ug/L	1	09/15/23 16:53	EPA 8081B	
gamma-BHC (Lindane) [2C]	ND	---	0.0106	ug/L	1	09/15/23 16:53	EPA 8081B	
cis-Chlordane [2C]	ND	---	0.0106	ug/L	1	09/15/23 16:53	EPA 8081B	
trans-Chlordane [2C]	ND	---	0.0106	ug/L	1	09/15/23 16:53	EPA 8081B	
4,4'-DDD [2C]	ND	---	0.0106	ug/L	1	09/15/23 16:53	EPA 8081B	
4,4'-DDE [2C]	ND	---	0.0106	ug/L	1	09/15/23 16:53	EPA 8081B	
4,4'-DDT [2C]	ND	---	0.0106	ug/L	1	09/15/23 16:53	EPA 8081B	
Dieldrin [2C]	ND	---	0.0106	ug/L	1	09/15/23 16:53	EPA 8081B	
Endosulfan I [2C]	ND	---	0.0106	ug/L	1	09/15/23 16:53	EPA 8081B	
Endosulfan II [2C]	ND	---	0.0106	ug/L	1	09/15/23 16:53	EPA 8081B	
Endosulfan sulfate	ND	---	0.0106	ug/L	1	09/15/23 16:53	EPA 8081B	
Endrin [2C]	ND	---	0.0106	ug/L	1	09/15/23 16:53	EPA 8081B	
Endrin aldehyde [2C]	ND	---	0.0106	ug/L	1	09/15/23 16:53	EPA 8081B	
Endrin ketone	ND	---	0.0106	ug/L	1	09/15/23 16:53	EPA 8081B	
Heptachlor [2C]	ND	---	0.0106	ug/L	1	09/15/23 16:53	EPA 8081B	
Heptachlor epoxide [2C]	ND	---	0.0106	ug/L	1	09/15/23 16:53	EPA 8081B	
Methoxychlor	ND	---	0.0745	ug/L	1	09/15/23 16:53	EPA 8081B	
Chlordane (Technical) [2C]	ND	---	0.399	ug/L	1	09/15/23 16:53	EPA 8081B	
Toxaphene (Total) [2C]	ND	---	0.399	ug/L	1	09/15/23 16:53	EPA 8081B	
Surrogate: 2,4,5,6-TCMX (Surr)		*Recovery:*	*74 %*	*Limits: 25-140 %*	*1*	*09/15/23 16:53*	*EPA 8081B*	
Decachlorobiphenyl (Surr)			*89 %*	*30-135 %*	*1*	*09/15/23 16:53*	*EPA 8081B*	

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BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

ANALYTICAL SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-COMP 1 (A3I0893-01)				**Matrix: Soil**		**Batch: 23I0375**		
Azinphos methyl (Guthion)	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Chlorpyrifos	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Coumaphos	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Demeton O	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Demeton S	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Diazinon	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Dichlorvos	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Dimethoate	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Disulfoton	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
EPN	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Ethoprop	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Fensulfothion	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Fenthion	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Malathion	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Merphos	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Methyl parathion	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Mevinphos (Phosdrin)	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Monocrotophos	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Naled (Dibrom)	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Parathion, ethyl	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Phorate	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Ronnel (Fenchlorphos)	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Sulfotep	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Sulprofos (Bolstar)	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
TEPP	ND	---	208	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Tetrachlorvinphos (Rabon)	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Tokuthion (Prothiofos)	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Trichloronate	ND	---	51.9	ug/kg dry	1	09/14/23 00:51	EPA 8270E OPPs	
Surrogate: Tributyl phosphate (Surr)		*Recovery:*	*92 %*	*Limits: 10-136 %*	*1*	*09/14/23 00:51*	*EPA 8270E OPPs*	
Triphenyl phosphate (Surr)			*101 %*	*34-121 %*	*1*	*09/14/23 00:51*	*EPA 8270E OPPs*	
PAP182-COMP 2 (A3I0893-02)				**Matrix: Soil**		**Batch: 23I0375**		
Azinphos methyl (Guthion)	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	

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BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

ANALYTICAL SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-COMP 2 (A3I0893-02)				**Matrix: Soil**		**Batch: 23I0375**		
Chlorpyrifos	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Coumaphos	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Demeton O	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Demeton S	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Diazinon	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Dichlorvos	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Dimethoate	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Disulfoton	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
EPN	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Ethoprop	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Fensulfothion	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Fenthion	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Malathion	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Merphos	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Methyl parathion	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Mevinphos (Phosdrin)	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Monocrotophos	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Naled (Dibrom)	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Parathion, ethyl	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Phorate	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Ronnel (Fenchlorphos)	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Sulfotep	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Sulprofos (Bolstar)	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
TEPP	ND	---	207	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Tetrachlorvinphos (Rabon)	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Tokuthion (Prothiofos)	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Trichloronate	ND	---	51.7	ug/kg dry	1	09/14/23 01:27	EPA 8270E OPPs	
Surrogate: Tributyl phosphate (Surr)			*Recovery: 99 %*	*Limits: 10-136 %*	*1*	*09/14/23 01:27*	*EPA 8270E OPPs*	
Triphenyl phosphate (Surr)			*101 %*	*34-121 %*	*1*	*09/14/23 01:27*	*EPA 8270E OPPs*	
PAP182-COMP 3 (A3I0893-03)				**Matrix: Soil**		**Batch: 23I0375**		
Azinphos methyl (Guthion)	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Chlorpyrifos	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	

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25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

ANALYTICAL SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-COMP 3 (A3I0893-03)				**Matrix: Soil**		**Batch: 23I0375**		
Coumaphos	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Demeton O	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Demeton S	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Diazinon	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Dichlorvos	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Dimethoate	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Disulfoton	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
EPN	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Ethoprop	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Fensulfothion	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Fenthion	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Malathion	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Merphos	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Methyl parathion	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Mevinphos (Phosdrin)	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Monocrotophos	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Naled (Dibrom)	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Parathion, ethyl	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Phorate	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Ronnel (Fenchlorphos)	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Sulfotep	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Sulprofos (Bolstar)	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
TEPP	ND	---	209	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Tetrachlorvinphos (Rabon)	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Tokuthion (Prothiofos)	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Trichloronate	ND	---	52.1	ug/kg dry	1	09/14/23 02:03	EPA 8270E OPPs	
Surrogate: Tributyl phosphate (Surr)		*Recovery:*	*91 %*	*Limits: 10-136 %*	*1*	*09/14/23 02:03*	*EPA 8270E OPPs*	
Triphenyl phosphate (Surr)			*92 %*	*34-121 %*	*1*	*09/14/23 02:03*	*EPA 8270E OPPs*	
PAP182-COMP 4 (A3I0893-04)				**Matrix: Soil**		**Batch: 23I0375**		
Azinphos methyl (Guthion)	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Chlorpyrifos	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Coumaphos	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	

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Darrell Auvil, Client Services Manager

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ORELAP ID: OR100062

ANALYTICAL REPORT

BB&A Environmental - Wilsonville	Project: Fife AG Fields	
25195 SW Parkway Ave, Suite #207	Project Number: PAP182MAG.23E	Report ID:
Wilsonville, OR 97070	Project Manager: Steve Omo	A3I0893 - 09 28 23 1238

ANALYTICAL SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-COMP 4 (A3I0893-04)				**Matrix: Soil**		**Batch: 23I0375**		
Demeton O	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Demeton S	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Diazinon	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Dichlorvos	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Dimethoate	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Disulfoton	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
EPN	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Ethoprop	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Fensulfothion	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Fenthion	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Malathion	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Merphos	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Methyl parathion	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Mevinphos (Phosdrin)	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Monocrotophos	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Naled (Dibrom)	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Parathion, ethyl	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Phorate	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Ronnel (Fenchlorphos)	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Sulfotep	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Sulprofos (Bolstar)	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
TEPP	ND	---	212	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Tetrachlorvinphos (Rabon)	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Tokuthion (Prothiofos)	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Trichloronate	ND	---	53.0	ug/kg dry	1	09/14/23 11:52	EPA 8270E OPPs	
Surrogate: Tributyl phosphate (Surr)		*Recovery:*	*90 %*	*Limits: 10-136 %*	*1*	*09/14/23 11:52*	*EPA 8270E OPPs*	
Triphenyl phosphate (Surr)			*92 %*	*34-121 %*	*1*	*09/14/23 11:52*	*EPA 8270E OPPs*	
PAP182-COMP 5 (A3I0893-05)				**Matrix: Soil**		**Batch: 23I0375**		
Azinphos methyl (Guthion)	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Chlorpyrifos	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Coumaphos	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Demeton O	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	

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ORELAP ID: **OR100062**

BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

ANALYTICAL SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-COMP 5 (A3I0893-05)				**Matrix: Soil**		**Batch: 23I0375**		
Demeton S	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Diazinon	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Dichlorvos	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Dimethoate	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Disulfoton	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
EPN	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Ethoprop	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Fensulfothion	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Fenthion	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Malathion	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Merphos	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Methyl parathion	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Mevinphos (Phosdrin)	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Monocrotophos	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Naled (Dibrom)	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Parathion, ethyl	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Phorate	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Ronnel (Fenchlorphos)	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Sulfotep	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Sulprofos (Bolstar)	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
TEPP	ND	---	211	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Tetrachlorvinphos (Rabon)	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Tokuthion (Prothiofos)	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Trichloronate	ND	---	52.8	ug/kg dry	1	09/14/23 12:28	EPA 8270E OPPs	
Surrogate: Tributyl phosphate (Surr)		*Recovery:*	*95 %*	*Limits: 10-136 %*	*1*	*09/14/23 12:28*	*EPA 8270E OPPs*	
Triphenyl phosphate (Surr)			*96 %*	*34-121 %*	*1*	*09/14/23 12:28*	*EPA 8270E OPPs*	
PAP182-COMP 6 (A3I0893-06)				**Matrix: Soil**		**Batch: 23I0375**		
Azinphos methyl (Guthion)	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Chlorpyrifos	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Coumaphos	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Demeton O	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Demeton S	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	

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ORELAP ID: **OR100062**

BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

ANALYTICAL SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-COMP 6 (A3I0893-06)				**Matrix: Soil**		**Batch: 23I0375**		
Diazinon	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Dichlorvos	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Dimethoate	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Disulfoton	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
EPN	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Ethoprop	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Fensulfothion	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Fenthion	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Malathion	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Merphos	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Methyl parathion	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Mevinphos (Phosdrin)	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Monocrotophos	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Naled (Dibrom)	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Parathion, ethyl	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Phorate	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Ronnel (Fenchlorphos)	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Sulfotep	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Sulprofos (Bolstar)	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
TEPP	ND	---	212	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Tetrachlorvinphos (Rabon)	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Tokuthion (Prothiofos)	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Trichloronate	ND	---	52.9	ug/kg dry	1	09/14/23 13:04	EPA 8270E OPPs	
Surrogate: Tributyl phosphate (Surr)		*Recovery:*	*91 %*	*Limits: 10-136 %*	*1*	*09/14/23 13:04*	*EPA 8270E OPPs*	
Triphenyl phosphate (Surr)			*95 %*	*34-121 %*	*1*	*09/14/23 13:04*	*EPA 8270E OPPs*	
PAP182-COMP GH 1-9 (A3I0893-07RE1)				**Matrix: Soil**		**Batch: 23I0375**		
Azinphos methyl (Guthion)	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Chlorpyrifos	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Coumaphos	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Demeton O	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Demeton S	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Diazinon	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	

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BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

ANALYTICAL SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-COMP GH 1-9 (A3I0893-07RE1)				**Matrix: Soil**		**Batch: 23I0375**		
Dichlorvos	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Dimethoate	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Disulfoton	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
EPN	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Ethoprop	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Fensulfothion	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Fenthion	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Malathion	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Merphos	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Methyl parathion	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Mevinphos (Phosdrin)	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Monocrotophos	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Naled (Dibrom)	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Parathion, ethyl	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Phorate	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Ronnel (Fenchlorphos)	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Sulfotep	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Sulprofos (Bolstar)	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
TEPP	ND	---	209	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Tetrachlorvinphos (Rabon)	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Tokuthion (Prothiofos)	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Trichloronate	ND	---	52.2	ug/kg dry	1	09/13/23 18:53	EPA 8270E OPPs	
Surrogate: Tributyl phosphate (Surr)		*Recovery:*	*86 %*	*Limits: 10-136 %*	*1*	*09/13/23 18:53*	*EPA 8270E OPPs*	
Triphenyl phosphate (Surr)			*90 %*	*34-121 %*	*1*	*09/13/23 18:53*	*EPA 8270E OPPs*	
PAP182-P1-GW (A3I0893-08)				**Matrix: Water**		**Batch: 23I0405**		
Azinphos methyl (Guthion)	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Chlorpyrifos	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Coumaphos	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Demeton O	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Demeton S	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Diazinon	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Dichlorvos	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	

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BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

ANALYTICAL SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-P1-GW (A3I0893-08)				**Matrix: Water**		**Batch: 23I0405**		
Dimethoate	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Disulfoton	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
EPN	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Ethoprop	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Fensulfothion	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Fenthion	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Malathion	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Merphos	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Methyl parathion	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Mevinphos (Phosdrin)	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Monocrotophos	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Naled (Dibrom)	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Parathion, ethyl	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Phorate	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Ronnel (Fenchlorphos)	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Sulfotep	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Sulprofos (Bolstar)	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
TEPP	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Tetrachlorvinphos (Rabon)	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Tokuthion (Prothiofos)	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Trichloronate	ND	---	0.568	ug/L	1	09/14/23 15:11	EPA 8270E OPPs	
Surrogate: Tributyl phosphate (Surr)		*Recovery:*	*98 %*	*Limits: 56-124 %*	*1*	*09/14/23 15:11*	*EPA 8270E OPPs*	
Triphenyl phosphate (Surr)			*98 %*	*58-121 %*	*1*	*09/14/23 15:11*	*EPA 8270E OPPs*	
PAP182-P2-GW (A3I0893-09)				**Matrix: Water**		**Batch: 23I0405**		
Azinphos methyl (Guthion)	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Chlorpyrifos	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Coumaphos	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Demeton O	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Demeton S	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Diazinon	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Dichlorvos	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Dimethoate	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	

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Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: **OR100062**

BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

ANALYTICAL SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-P2-GW (A3I0893-09)				**Matrix: Water**		**Batch: 23I0405**		
Disulfoton	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
EPN	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Ethoprop	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Fensulfothion	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Fenthion	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Malathion	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Merphos	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Methyl parathion	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Mevinphos (Phosdrin)	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Monocrotophos	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Naled (Dibrom)	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Parathion, ethyl	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Phorate	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Ronnel (Fenchlorphos)	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Sulfotep	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Sulprofos (Bolstar)	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
TEPP	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Tetrachlorvinphos (Rabon)	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Tokuthion (Prothiofos)	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Trichloronate	ND	---	0.538	ug/L	1	09/14/23 15:43	EPA 8270E OPPs	
Surrogate: Tributyl phosphate (Surr)		*Recovery:*	*92 %*	*Limits:*	*56-124 %*	*09/14/23 15:43*	*EPA 8270E OPPs*	
Triphenyl phosphate (Surr)			*91 %*		*58-121 %*	*09/14/23 15:43*	*EPA 8270E OPPs*	
PAP182-P3-GW (A3I0893-10)				**Matrix: Water**		**Batch: 23I0405**		
Azinphos methyl (Guthion)	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Chlorpyrifos	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Coumaphos	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Demeton O	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Demeton S	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Diazinon	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Dichlorvos	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Dimethoate	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Disulfoton	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	

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ORELAP ID: **OR100062**

BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

ANALYTICAL SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-P3-GW (A3I0893-10)				**Matrix: Water**		**Batch: 23I0405**		
EPN	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Ethoprop	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Fensulfothion	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Fenthion	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Malathion	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Merphos	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Methyl parathion	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Mevinphos (Phosdrin)	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Monocrotophos	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Naled (Dibrom)	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Parathion, ethyl	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Phorate	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Ronnel (Fenchlorphos)	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Sulfotep	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Sulprofos (Bolstar)	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
TEPP	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Tetrachlorvinphos (Rabon)	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Tokuthion (Prothiofos)	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Trichloronate	ND	---	0.575	ug/L	1	09/14/23 16:19	EPA 8270E OPPs	
Surrogate: Tributyl phosphate (Surr)		*Recovery:*	*103 %*	*Limits:*	*56-124 %*	*1*	*09/14/23 16:19*	*EPA 8270E OPPs*	
Triphenyl phosphate (Surr)			*104 %*		*58-121 %*	*1*	*09/14/23 16:19*	*EPA 8270E OPPs*	
PAP182-P4-GW (A3I0893-11)				**Matrix: Water**		**Batch: 23I0405**		
Azinphos methyl (Guthion)	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Chlorpyrifos	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Coumaphos	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Demeton O	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Demeton S	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Diazinon	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Dichlorvos	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Dimethoate	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Disulfoton	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
EPN	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	

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BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

ANALYTICAL SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-P4-GW (A3I0893-11)				**Matrix: Water**		**Batch: 23I0405**		
Ethoprop	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Fensulfothion	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Fenthion	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Malathion	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Merphos	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Methyl parathion	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Mevinphos (Phosdrin)	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Monocrotophos	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Naled (Dibrom)	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Parathion, ethyl	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Phorate	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Ronnel (Fenchlorphos)	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Sulfotep	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Sulprofos (Bolstar)	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
TEPP	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Tetrachlorvinphos (Rabon)	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Tokuthion (Prothiofos)	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Trichloronate	ND	---	0.610	ug/L	1	09/14/23 16:51	EPA 8270E OPPs	
Surrogate: Tributyl phosphate (Surr)		*Recovery:*	*94 %*	*Limits:*	*56-124 %*	*1*	*09/14/23 16:51*	*EPA 8270E OPPs*
Triphenyl phosphate (Surr)			*96 %*		*58-121 %*	*1*	*09/14/23 16:51*	*EPA 8270E OPPs*
PAP182-P5-GW (A3I0893-12)				**Matrix: Water**		**Batch: 23I0405**		
Azinphos methyl (Guthion)	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Chlorpyrifos	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Coumaphos	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Demeton O	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Demeton S	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Diazinon	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Dichlorvos	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Dimethoate	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Disulfoton	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
EPN	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Ethoprop	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	

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BB&A Environmental - Wilsonville
25195 SW Parkway Ave, Suite #207
Wilsonville, OR 97070

Project: **Fife AG Fields**
Project Number: **PAP182MAG.23E**
Project Manager: **Steve Omo**

Report ID:
A3I0893 - 09 28 23 1238

ANALYTICAL SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-P5-GW (A3I0893-12)				**Matrix: Water**		**Batch: 23I0405**		
Fensulfothion	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Fenthion	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Malathion	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Merphos	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Methyl parathion	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Mevinphos (Phosdrin)	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Monocrotophos	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Naled (Dibrom)	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Parathion, ethyl	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Phorate	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Ronnel (Fenchlorphos)	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Sulfotep	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Sulprofos (Bolstar)	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
TEPP	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Tetrachlorvinphos (Rabon)	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Tokuthion (Prothiofos)	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Trichloronate	ND	---	0.595	ug/L	1	09/14/23 17:24	EPA 8270E OPPs	
Surrogate: Tributyl phosphate (Surr)		*Recovery:*	*100 %*	*Limits:*	*56-124 %*	*09/14/23 17:24*	*EPA 8270E OPPs*	
Triphenyl phosphate (Surr)			*103 %*		*58-121 %*	*09/14/23 17:24*	*EPA 8270E OPPs*	
PAP182-P6-GW (A3I0893-13)				**Matrix: Water**		**Batch: 23I0405**		
Azinphos methyl (Guthion)	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Chlorpyrifos	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Coumaphos	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Demeton O	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Demeton S	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Diazinon	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Dichlorvos	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Dimethoate	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Disulfoton	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
EPN	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Ethoprop	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Fensulfothion	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	

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BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

ANALYTICAL SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-P6-GW (A3I0893-13)				**Matrix: Water**		**Batch: 23I0405**		
Fenthion	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Malathion	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Merphos	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Methyl parathion	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Mevinphos (Phosdrin)	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Monocrotophos	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Naled (Dibrom)	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Parathion, ethyl	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Phorate	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Ronnel (Fenchlorphos)	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Sulfotep	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Sulprofos (Bolstar)	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
TEPP	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Tetrachlorvinphos (Rabon)	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Tokuthion (Prothiofos)	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Trichloronate	ND	---	0.595	ug/L	1	09/14/23 17:56	EPA 8270E OPPs	
Surrogate: Tributyl phosphate (Surr)		*Recovery:*	*99 %*	*Limits:*	*56-124 %*	*1*	*09/14/23 17:56*	*EPA 8270E OPPs*	
Triphenyl phosphate (Surr)			*103 %*		*58-121 %*	*1*	*09/14/23 17:56*	*EPA 8270E OPPs*	

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Darrell Auvil, Client Services Manager

APEX LABORATORIES

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ORELAP ID: **OR100062**

ANALYTICAL REPORT

BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-COMP 1 (A3I0893-01)				**Matrix: Soil**				
Batch: 23I0489								
Arsenic	**2.82**	---	1.13	mg/kg dry	10	09/16/23 02:18	EPA 6020B	
Barium	**35.3**	---	1.13	mg/kg dry	10	09/16/23 02:18	EPA 6020B	
Cadmium	ND	---	0.225	mg/kg dry	10	09/16/23 02:18	EPA 6020B	
Chromium	**11.5**	---	1.13	mg/kg dry	10	09/16/23 02:18	EPA 6020B	
Lead	**10.6**	---	0.225	mg/kg dry	10	09/16/23 02:18	EPA 6020B	
Mercury	ND	---	0.0901	mg/kg dry	10	09/16/23 02:18	EPA 6020B	
Selenium	ND	---	1.13	mg/kg dry	10	09/16/23 02:18	EPA 6020B	
Silver	ND	---	0.225	mg/kg dry	10	09/16/23 02:18	EPA 6020B	
PAP182-COMP 2 (A3I0893-02)				**Matrix: Soil**				
Batch: 23I0489								
Arsenic	**2.82**	---	1.07	mg/kg dry	10	09/16/23 02:23	EPA 6020B	
Barium	**36.1**	---	1.07	mg/kg dry	10	09/16/23 02:23	EPA 6020B	
Cadmium	ND	---	0.214	mg/kg dry	10	09/16/23 02:23	EPA 6020B	
Chromium	**13.3**	---	1.07	mg/kg dry	10	09/16/23 02:23	EPA 6020B	
Lead	**6.63**	---	0.214	mg/kg dry	10	09/16/23 02:23	EPA 6020B	
Mercury	ND	---	0.0856	mg/kg dry	10	09/16/23 02:23	EPA 6020B	
Selenium	ND	---	1.07	mg/kg dry	10	09/16/23 02:23	EPA 6020B	
Silver	ND	---	0.214	mg/kg dry	10	09/16/23 02:23	EPA 6020B	
PAP182-COMP 3 (A3I0893-03)				**Matrix: Soil**				
Batch: 23I0489								
Arsenic	**5.11**	---	1.15	mg/kg dry	10	09/16/23 02:28	EPA 6020B	
Barium	**43.9**	---	1.15	mg/kg dry	10	09/16/23 02:28	EPA 6020B	
Cadmium	**0.273**	---	0.229	mg/kg dry	10	09/16/23 02:28	EPA 6020B	
Chromium	**15.3**	---	1.15	mg/kg dry	10	09/16/23 02:28	EPA 6020B	
Lead	**8.10**	---	0.229	mg/kg dry	10	09/16/23 02:28	EPA 6020B	
Mercury	ND	---	0.0916	mg/kg dry	10	09/16/23 02:28	EPA 6020B	
Selenium	ND	---	1.15	mg/kg dry	10	09/16/23 02:28	EPA 6020B	
Silver	ND	---	0.229	mg/kg dry	10	09/16/23 02:28	EPA 6020B	
PAP182-COMP 4 (A3I0893-04)				**Matrix: Soil**				
Batch: 23I0489								

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Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: **OR100062**

BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-COMP 4 (A3I0893-04)				**Matrix: Soil**				
Arsenic	**3.98**	---	1.16	mg/kg dry	10	09/16/23 02:33	EPA 6020B	
Barium	**42.0**	---	1.16	mg/kg dry	10	09/16/23 02:33	EPA 6020B	
Cadmium	ND	---	0.232	mg/kg dry	10	09/16/23 02:33	EPA 6020B	
Chromium	**14.1**	---	1.16	mg/kg dry	10	09/16/23 02:33	EPA 6020B	
Lead	**9.62**	---	0.232	mg/kg dry	10	09/16/23 02:33	EPA 6020B	
Mercury	ND	---	0.0929	mg/kg dry	10	09/16/23 02:33	EPA 6020B	
Selenium	ND	---	1.16	mg/kg dry	10	09/16/23 02:33	EPA 6020B	
Silver	ND	---	0.232	mg/kg dry	10	09/16/23 02:33	EPA 6020B	
PAP182-COMP 5 (A3I0893-05)				**Matrix: Soil**				
Batch: 23I0489								
Arsenic	**3.15**	---	1.14	mg/kg dry	10	09/16/23 02:38	EPA 6020B	
Barium	**38.6**	---	1.14	mg/kg dry	10	09/16/23 02:38	EPA 6020B	
Cadmium	ND	---	0.228	mg/kg dry	10	09/16/23 02:38	EPA 6020B	
Chromium	**11.0**	---	1.14	mg/kg dry	10	09/16/23 02:38	EPA 6020B	
Lead	**7.65**	---	0.228	mg/kg dry	10	09/16/23 02:38	EPA 6020B	
Mercury	ND	---	0.0912	mg/kg dry	10	09/16/23 02:38	EPA 6020B	
Selenium	ND	---	1.14	mg/kg dry	10	09/16/23 02:38	EPA 6020B	
Silver	ND	---	0.228	mg/kg dry	10	09/16/23 02:38	EPA 6020B	
PAP182-COMP 6 (A3I0893-06)				**Matrix: Soil**				
Batch: 23I0489								
Arsenic	**3.75**	---	1.12	mg/kg dry	10	09/16/23 02:43	EPA 6020B	
Barium	**45.2**	---	1.12	mg/kg dry	10	09/16/23 02:43	EPA 6020B	
Cadmium	ND	---	0.224	mg/kg dry	10	09/16/23 02:43	EPA 6020B	
Chromium	**14.0**	---	1.12	mg/kg dry	10	09/16/23 02:43	EPA 6020B	
Lead	**7.74**	---	0.224	mg/kg dry	10	09/16/23 02:43	EPA 6020B	
Mercury	ND	---	0.0897	mg/kg dry	10	09/16/23 02:43	EPA 6020B	
Selenium	ND	---	1.12	mg/kg dry	10	09/16/23 02:43	EPA 6020B	
Silver	ND	---	0.224	mg/kg dry	10	09/16/23 02:43	EPA 6020B	
PAP182-COMP GH 1-9 (A3I0893-07)				**Matrix: Soil**				
Batch: 23I0489								
Arsenic	**3.82**	---	1.12	mg/kg dry	10	09/16/23 02:48	EPA 6020B	

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ORELAP ID: **OR100062**

BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-COMP GH 1-9 (A3I0893-07)				**Matrix: Soil**				
Barium	**41.5**	---	1.12	mg/kg dry	10	09/16/23 02:48	EPA 6020B	
Cadmium	ND	---	0.223	mg/kg dry	10	09/16/23 02:48	EPA 6020B	
Chromium	**16.6**	---	1.12	mg/kg dry	10	09/16/23 02:48	EPA 6020B	
Lead	**9.69**	---	0.223	mg/kg dry	10	09/16/23 02:48	EPA 6020B	
Mercury	ND	---	0.0893	mg/kg dry	10	09/16/23 02:48	EPA 6020B	
Selenium	ND	---	1.12	mg/kg dry	10	09/16/23 02:48	EPA 6020B	
Silver	ND	---	0.223	mg/kg dry	10	09/16/23 02:48	EPA 6020B	

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ANALYTICAL REPORT

BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Sample Result	Detection Limit	Reporting Limit	Units	Dilution	Date Analyzed	Method Ref.	Notes
PAP182-COMP 1 (A3I0893-01)				**Matrix: Soil**		**Batch: 23I0284**		
% Solids	**95.9**	---	1.00	%	1	09/12/23 06:49	EPA 8000D	
PAP182-COMP 2 (A3I0893-02)				**Matrix: Soil**		**Batch: 23I0284**		
% Solids	**94.6**	---	1.00	%	1	09/12/23 06:49	EPA 8000D	
PAP182-COMP 3 (A3I0893-03)				**Matrix: Soil**		**Batch: 23I0284**		
% Solids	**95.1**	---	1.00	%	1	09/12/23 06:49	EPA 8000D	
PAP182-COMP 4 (A3I0893-04)				**Matrix: Soil**		**Batch: 23I0284**		
% Solids	**93.6**	---	1.00	%	1	09/12/23 06:49	EPA 8000D	
PAP182-COMP 5 (A3I0893-05)				**Matrix: Soil**		**Batch: 23I0284**		
% Solids	**94.7**	---	1.00	%	1	09/12/23 06:49	EPA 8000D	
PAP182-COMP 6 (A3I0893-06)				**Matrix: Soil**		**Batch: 23I0284**		
% Solids	**93.9**	---	1.00	%	1	09/12/23 06:49	EPA 8000D	
PAP182-COMP GH 1-9 (A3I0893-07)				**Matrix: Soil**		**Batch: 23I0284**		
% Solids	**94.9**	---	1.00	%	1	09/12/23 06:49	EPA 8000D	

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25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23I0438 - EPA 3510C (Neutral pH)							**Water**					
Blank (23I0438-BLK1)			Prepared: 09/14/23 12:54 Analyzed: 09/15/23 14:43									
EPA 8081B												
Aldrin	ND	---	0.0100	ug/L	1	---	---	---	---	---	---	Q-30
alpha-BHC	ND	---	0.0100	ug/L	1	---	---	---	---	---	---	
beta-BHC	ND	---	0.0100	ug/L	1	---	---	---	---	---	---	
delta-BHC	ND	---	0.0100	ug/L	1	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	---	0.0100	ug/L	1	---	---	---	---	---	---	
cis-Chlordane	ND	---	0.0100	ug/L	1	---	---	---	---	---	---	
trans-Chlordane	ND	---	0.0100	ug/L	1	---	---	---	---	---	---	
4,4'-DDD	ND	---	0.0100	ug/L	1	---	---	---	---	---	---	
4,4'-DDE	ND	---	0.0100	ug/L	1	---	---	---	---	---	---	
4,4'-DDT	ND	---	0.0100	ug/L	1	---	---	---	---	---	---	
Dieldrin	ND	---	0.0100	ug/L	1	---	---	---	---	---	---	
Endosulfan I	ND	---	0.0100	ug/L	1	---	---	---	---	---	---	
Endosulfan II	ND	---	0.0100	ug/L	1	---	---	---	---	---	---	
Endosulfan sulfate	ND	---	0.0100	ug/L	1	---	---	---	---	---	---	
Endrin	ND	---	0.0100	ug/L	1	---	---	---	---	---	---	
Endrin aldehyde	ND	---	0.0100	ug/L	1	---	---	---	---	---	---	
Endrin ketone	ND	---	0.0100	ug/L	1	---	---	---	---	---	---	
Heptachlor	ND	---	0.0100	ug/L	1	---	---	---	---	---	---	
Heptachlor epoxide	ND	---	0.0100	ug/L	1	---	---	---	---	---	---	
Methoxychlor	ND	---	0.0700	ug/L	1	---	---	---	---	---	---	
Chlordane (Technical)	ND	---	0.375	ug/L	1	---	---	---	---	---	---	
Toxaphene (Total)	ND	---	0.375	ug/L	1	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 48 %*	*Limits: 25-140 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*65 %*	*30-135 %*			*"*					
LCS (23I0438-BS1)			Prepared: 09/14/23 12:54 Analyzed: 09/15/23 15:00									
EPA 8081B												
Aldrin	0.175	---	0.0100	ug/L	1	0.500	---	**35**	**45-134%**	---	---	Q-30
alpha-BHC	0.455	---	0.0100	ug/L	1	0.500	---	91	54-138%	---	---	
beta-BHC	0.471	---	0.0100	ug/L	1	0.500	---	94	56-136%	---	---	
delta-BHC	0.451	---	0.0100	ug/L	1	0.500	---	90	52-142%	---	---	
gamma-BHC (Lindane)	0.467	---	0.0100	ug/L	1	0.500	---	93	59-134%	---	---	
cis-Chlordane	0.428	---	0.0100	ug/L	1	0.500	---	86	60-129%	---	---	

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25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23I0438 - EPA 3510C (Neutral pH)							**Water**					
LCS (23I0438-BS1)			Prepared: 09/14/23 12:54 Analyzed: 09/15/23 15:00									
trans-Chlordane	0.431	---	0.0100	ug/L	1	0.500	---	86	56-136%	---	---	
4,4'-DDD	0.481	---	0.0100	ug/L	1	0.500	---	96	56-143%	---	---	
4,4'-DDE	0.447	---	0.0100	ug/L	1	0.500	---	89	57-135%	---	---	
4,4'-DDT	0.420	---	0.0100	ug/L	1	0.500	---	84	51-143%	---	---	
Dieldrin	0.506	---	0.0100	ug/L	1	0.500	---	101	60-136%	---	---	
Endosulfan I	0.480	---	0.0100	ug/L	1	0.500	---	96	62-126%	---	---	
Endosulfan II	0.494	---	0.0100	ug/L	1	0.500	---	99	52-135%	---	---	
Endosulfan sulfate	0.426	---	0.0100	ug/L	1	0.500	---	85	62-133%	---	---	Q-31
Endrin	0.491	---	0.0100	ug/L	1	0.500	---	98	60-138%	---	---	
Endrin aldehyde	0.435	---	0.0100	ug/L	1	0.500	---	87	51-132%	---	---	
Endrin ketone	0.472	---	0.0100	ug/L	1	0.500	---	94	58-134%	---	---	Q-31
Heptachlor	0.339	---	0.0100	ug/L	1	0.500	---	68	54-130%	---	---	
Heptachlor epoxide	0.478	---	0.0100	ug/L	1	0.500	---	96	61-133%	---	---	
Methoxychlor	0.502	---	0.0700	ug/L	1	0.500	---	100	54-145%	---	---	Q-31
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 48 %*		*Limits: 25-140 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*72 %*		*30-135 %*				*"*			
LCS Dup (23I0438-BSD1)			Prepared: 09/14/23 12:54 Analyzed: 09/15/23 15:16									**Q-19**
EPA 8081B												
Aldrin	0.173	---	0.0100	ug/L	1	0.500	---	**35**	**45-134%**	1	30%	Q-30
alpha-BHC	0.455	---	0.0100	ug/L	1	0.500	---	91	54-138%	0.09	30%	
beta-BHC	0.466	---	0.0100	ug/L	1	0.500	---	93	56-136%	1	30%	
delta-BHC	0.449	---	0.0100	ug/L	1	0.500	---	90	52-142%	0.4	30%	
gamma-BHC (Lindane)	0.462	---	0.0100	ug/L	1	0.500	---	92	59-134%	1	30%	
cis-Chlordane	0.441	---	0.0100	ug/L	1	0.500	---	88	60-129%	3	30%	
trans-Chlordane	0.439	---	0.0100	ug/L	1	0.500	---	88	56-136%	2	30%	
4,4'-DDD	0.469	---	0.0100	ug/L	1	0.500	---	94	56-143%	2	30%	
4,4'-DDE	0.442	---	0.0100	ug/L	1	0.500	---	88	57-135%	1	30%	
4,4'-DDT	0.406	---	0.0100	ug/L	1	0.500	---	81	51-143%	3	30%	
Dieldrin	0.502	---	0.0100	ug/L	1	0.500	---	100	60-136%	0.8	30%	
Endosulfan I	0.479	---	0.0100	ug/L	1	0.500	---	96	62-126%	0.3	30%	
Endosulfan II	0.492	---	0.0100	ug/L	1	0.500	---	98	52-135%	0.3	30%	
Endosulfan sulfate	0.417	---	0.0100	ug/L	1	0.500	---	83	62-133%	2	30%	Q-31
Endrin	0.496	---	0.0100	ug/L	1	0.500	---	99	60-138%	1	30%	

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25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23I0438 - EPA 3510C (Neutral pH)							**Water**					
LCS Dup (23I0438-BSD1)			Prepared: 09/14/23 12:54		Analyzed: 09/15/23 15:16							**Q-19**
Endrin aldehyde	0.412	---	0.0100	ug/L	1	0.500	---	82	51-132%	6	30%	
Endrin ketone	0.458	---	0.0100	ug/L	1	0.500	---	92	58-134%	3	30%	Q-31
Heptachlor	0.367	---	0.0100	ug/L	1	0.500	---	73	54-130%	8	30%	
Heptachlor epoxide	0.484	---	0.0100	ug/L	1	0.500	---	97	61-133%	1	30%	
Methoxychlor	0.457	---	0.0700	ug/L	1	0.500	---	91	54-145%	9	30%	Q-31
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 64 %*		*Limits: 25-140 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*73 %*		*30-135 %*				*"*			

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25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23I0535 - EPA 3546/3640A (GPC)							**Soil**					
Blank (23I0535-BLK1)			Prepared: 09/15/23 06:55	Analyzed: 09/19/23 13:53								**C-05**
EPA 8081B												
Aldrin	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---	
alpha-BHC	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---	
beta-BHC	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---	
delta-BHC	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---	
cis-Chlordane	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---	
trans-Chlordane	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDD	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDE	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---	
4,4'-DDT	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---	
Dieldrin	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan I	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan II	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---	
Endosulfan sulfate	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---	
Endrin	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---	
Endrin aldehyde	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---	
Endrin ketone	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---	
Heptachlor	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---	
Heptachlor epoxide	ND	---	2.00	ug/kg wet	1	---	---	---	---	---	---	
Methoxychlor	ND	---	6.00	ug/kg wet	1	---	---	---	---	---	---	
Chlordane (Technical)	ND	---	60.0	ug/kg wet	1	---	---	---	---	---	---	
Toxaphene (Total)	ND	---	60.0	ug/kg wet	1	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 75 %*	*Limits: 42-129 %*				*Dilution: 1x*				
Decachlorobiphenyl (Surr)			*89 %*	*55-130 %*				*"*				
LCS (23I0535-BS1)			Prepared: 09/15/23 06:55	Analyzed: 09/19/23 14:11								**C-05**
EPA 8081B												
Aldrin	41.4	---	2.00	ug/kg wet	1	50.0	---	83	45-136%	---	---	
alpha-BHC	41.6	---	2.00	ug/kg wet	1	50.0	---	83	45-137%	---	---	
beta-BHC	41.1	---	2.00	ug/kg wet	1	50.0	---	82	50-136%	---	---	
delta-BHC	45.9	---	2.00	ug/kg wet	1	50.0	---	92	47-139%	---	---	
gamma-BHC (Lindane)	41.9	---	2.00	ug/kg wet	1	50.0	---	84	49-135%	---	---	
cis-Chlordane	50.2	---	2.00	ug/kg wet	1	50.0	---	100	54-133%	---	---	

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ORELAP ID: **OR100062**

BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23I0535 - EPA 3546/3640A (GPC)							**Soil**					
LCS (23I0535-BS1)			Prepared: 09/15/23 06:55		Analyzed: 09/19/23 14:11							**C-05**
trans-Chlordane	50.2	---	2.00	ug/kg wet	1	50.0	---	100	53-135%	---	---	
4,4'-DDD	54.9	---	2.00	ug/kg wet	1	50.0	---	110	56-139%	---	---	
4,4'-DDE	54.6	---	2.00	ug/kg wet	1	50.0	---	109	56-134%	---	---	
4,4'-DDT	61.3	---	2.00	ug/kg wet	1	50.0	---	123	50-141%	---	---	
Dieldrin	53.3	---	2.00	ug/kg wet	1	50.0	---	107	56-136%	---	---	
Endosulfan I	50.9	---	2.00	ug/kg wet	1	50.0	---	102	53-132%	---	---	
Endosulfan II	56.4	---	2.00	ug/kg wet	1	50.0	---	113	53-134%	---	---	
Endosulfan sulfate	58.6	---	2.00	ug/kg wet	1	50.0	---	117	55-136%	---	---	
Endrin	70.7	---	2.00	ug/kg wet	1	50.0	---	**141**	**57-140%**	---	---	Q-41
Endrin aldehyde	48.5	---	2.00	ug/kg wet	1	50.0	---	97	35-137%	---	---	
Endrin ketone	56.9	---	2.00	ug/kg wet	1	50.0	---	114	55-136%	---	---	
Heptachlor	47.7	---	2.00	ug/kg wet	1	50.0	---	95	47-136%	---	---	
Heptachlor epoxide	48.1	---	2.00	ug/kg wet	1	50.0	---	96	52-136%	---	---	
Methoxychlor	74.0	---	6.00	ug/kg wet	1	50.0	---	**148**	**52-143%**	---	---	Q-41
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 84 %*		*Limits: 42-129 %*			*Dilution: 1x*				
Decachlorobiphenyl (Surr)			*122 %*		*55-130 %*			*"*				
Duplicate (23I0535-DUP1)			Prepared: 09/15/23 06:55		Analyzed: 09/19/23 14:46							**C-05**
QC Source Sample: Non-SDG (A3I0752-02RE6)												
Aldrin	ND	---	1.97	ug/kg wet	1	---	ND	---	---	---	30%	
alpha-BHC	ND	---	1.97	ug/kg wet	1	---	ND	---	---	---	30%	
beta-BHC	ND	---	1.97	ug/kg wet	1	---	ND	---	---	---	30%	
delta-BHC	ND	---	1.97	ug/kg wet	1	---	ND	---	---	---	30%	
gamma-BHC (Lindane)	ND	---	1.97	ug/kg wet	1	---	ND	---	---	---	30%	
cis-Chlordane	ND	---	1.97	ug/kg wet	1	---	ND	---	---	---	30%	
trans-Chlordane	ND	---	1.97	ug/kg wet	1	---	ND	---	---	---	30%	
4,4'-DDD	ND	---	1.97	ug/kg wet	1	---	ND	---	---	---	30%	
4,4'-DDE	**6.21**	---	1.97	ug/kg wet	1	---	5.46	---	---	13	30%	
4,4'-DDT	**3.53**	---	1.97	ug/kg wet	1	---	2.56	---	---	**32**	**30%**	P-11, Q-05
Dieldrin	ND	---	1.97	ug/kg wet	1	---	ND	---	---	---	30%	
Endosulfan I	ND	---	1.97	ug/kg wet	1	---	ND	---	---	---	30%	
Endosulfan II	ND	---	1.97	ug/kg wet	1	---	ND	---	---	---	30%	
Endosulfan sulfate	ND	---	1.97	ug/kg wet	1	---	ND	---	---	---	30%	
Endrin	ND	---	1.97	ug/kg wet	1	---	ND	---	---	---	30%	

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25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23I0535 - EPA 3546/3640A (GPC)							**Soil**					
Duplicate (23I0535-DUP1)			Prepared: 09/15/23 06:55		Analyzed: 09/19/23 14:46							**C-05**
QC Source Sample: Non-SDG (A3I0752-02RE6)												
Endrin aldehyde	ND	---	1.97	ug/kg wet	1	---	ND	---	---	---	30%	
Endrin ketone	ND	---	1.97	ug/kg wet	1	---	ND	---	---	---	30%	
Heptachlor	ND	---	1.97	ug/kg wet	1	---	ND	---	---	---	30%	
Heptachlor epoxide	ND	---	1.97	ug/kg wet	1	---	ND	---	---	---	30%	
Methoxychlor	ND	---	5.92	ug/kg wet	1	---	ND	---	---	---	30%	
Chlordane (Technical)	ND	---	59.2	ug/kg wet	1	---	ND	---	---	---	30%	
Toxaphene (Total)	ND	---	59.2	ug/kg wet	1	---	ND	---	---	---	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 70 %*		*Limits: 42-129 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*106 %*		*55-130 %*				*"*			
Matrix Spike (23I0535-MS1)			Prepared: 09/15/23 06:55		Analyzed: 09/19/23 15:03							**C-05**
QC Source Sample: Non-SDG (A3I0752-02RE6)												
EPA 8081B												
Aldrin	38.4	---	1.93	ug/kg wet	1	48.2	ND	80	45-136%	---	---	
alpha-BHC	36.7	---	1.93	ug/kg wet	1	48.2	ND	76	45-137%	---	---	
beta-BHC	43.2	---	1.93	ug/kg wet	1	48.2	ND	90	50-136%	---	---	
delta-BHC	47.5	---	1.93	ug/kg wet	1	48.2	ND	98	47-139%	---	---	
gamma-BHC (Lindane)	37.3	---	1.93	ug/kg wet	1	48.2	ND	77	49-135%	---	---	
cis-Chlordane	50.9	---	1.93	ug/kg wet	1	48.2	ND	105	54-133%	---	---	
trans-Chlordane	54.3	---	1.93	ug/kg wet	1	48.2	ND	113	53-135%	---	---	
4,4'-DDD	55.3	---	1.93	ug/kg wet	1	48.2	ND	115	56-139%	---	---	
4,4'-DDE	52.4	---	1.93	ug/kg wet	1	48.2	5.46	97	56-134%	---	---	
4,4'-DDT	60.4	---	1.93	ug/kg wet	1	48.2	2.56	120	50-141%	---	---	
Dieldrin	53.7	---	1.93	ug/kg wet	1	48.2	ND	111	56-136%	---	---	
Endosulfan I	51.3	---	1.93	ug/kg wet	1	48.2	ND	106	53-132%	---	---	
Endosulfan II	56.4	---	1.93	ug/kg wet	1	48.2	ND	117	53-134%	---	---	
Endosulfan sulfate	56.7	---	1.93	ug/kg wet	1	48.2	ND	118	55-136%	---	---	
Endrin	71.4	---	1.93	ug/kg wet	1	48.2	ND	**148**	**57-140%**	---	---	Q-41
Endrin aldehyde	47.1	---	1.93	ug/kg wet	1	48.2	ND	98	35-137%	---	---	
Endrin ketone	54.5	---	1.93	ug/kg wet	1	48.2	ND	113	55-136%	---	---	
Heptachlor	43.9	---	1.93	ug/kg wet	1	48.2	ND	91	47-136%	---	---	
Heptachlor epoxide	47.3	---	1.93	ug/kg wet	1	48.2	ND	98	52-136%	---	---	
Methoxychlor	71.9	---	5.79	ug/kg wet	1	48.2	ND	**149**	**52-143%**	---	---	Q-41

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BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23I0535 - EPA 3546/3640A (GPC)							**Soil**					
Matrix Spike (23I0535-MS1)			Prepared: 09/15/23 06:55 Analyzed: 09/19/23 15:03									**C-05**
QC Source Sample: Non-SDG (A3I0752-02RE6)												
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 68 %*	*Limits: 42-129 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*111 %*	*55-130 %*			*"*					

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Project: **Fife AG Fields**
Project Number: **PAP182MAG.23E**
Project Manager: **Steve Omo**

Report ID:
A3I0893 - 09 28 23 1238

QUALITY CONTROL (QC) SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23I0375 - EPA 3546							**Soil**					
Blank (23I0375-BLK1)			Prepared: 09/13/23 10:49		Analyzed: 09/13/23 15:15							
EPA 8270E OPPs												
Azinphos methyl (Guthion)	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Chlorpyrifos	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Coumaphos	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Demeton O	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Demeton S	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Diazinon	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Dichlorvos	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Dimethoate	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Disulfoton	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
EPN	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Ethoprop	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Fensulfothion	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Fenthion	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Malathion	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Merphos	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Methyl parathion	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Mevinphos (Phosdrin)	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Monocrotophos	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Naled (Dibrom)	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Parathion, ethyl	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Phorate	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Ronnel (Fenchlorphos)	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Sulfotep	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Sulprofos (Bolstar)	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
TEPP	ND	---	200	ug/kg wet	1	---	---	---	---	---	---	
Tetrachlorvinphos (Rabon)	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Tokuthion (Prothiofos)	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Trichloronate	ND	---	50.0	ug/kg wet	1	---	---	---	---	---	---	
Surr: Tributyl phosphate (Surr)			*Recovery: 75 %*		*Limits: 10-136 %*				*Dilution: 1x*			
Triphenyl phosphate (Surr)			*84 %*		*34-121 %*				*"*			
LCS (23I0375-BS1)			Prepared: 09/13/23 10:49		Analyzed: 09/13/23 15:51							
EPA 8270E OPPs												

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BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23I0375 - EPA 3546							**Soil**					
LCS (23I0375-BS1)			Prepared: 09/13/23 10:49		Analyzed: 09/13/23 15:51							
Azinphos methyl (Guthion)	565	---	50.0	ug/kg wet	1	400	---	141	38-156%	---	---	Q-41
Chlorpyrifos	404	---	50.0	ug/kg wet	1	400	---	101	47-140%	---	---	
Coumaphos	411	---	50.0	ug/kg wet	1	400	---	103	37-160%	---	---	
Demeton O	176	---	50.0	ug/kg wet	1	184	---	96	66-127%	---	---	
Demeton S	184	---	50.0	ug/kg wet	1	194	---	95	70-121%	---	---	
Diazinon	434	---	50.0	ug/kg wet	1	400	---	108	42-134%	---	---	
Dichlorvos	389	---	50.0	ug/kg wet	1	400	---	97	39-142%	---	---	
Dimethoate	372	---	50.0	ug/kg wet	1	400	---	93	16-139%	---	---	
Disulfoton	430	---	50.0	ug/kg wet	1	400	---	108	28-145%	---	---	
EPN	431	---	50.0	ug/kg wet	1	400	---	108	44-137%	---	---	
Ethoprop	415	---	50.0	ug/kg wet	1	400	---	104	47-128%	---	---	
Fensulfothion	382	---	50.0	ug/kg wet	1	400	---	95	27-147%	---	---	
Fenthion	420	---	50.0	ug/kg wet	1	400	---	105	44-134%	---	---	
Malathion	374	---	50.0	ug/kg wet	1	400	---	94	46-137%	---	---	
Merphos	431	---	50.0	ug/kg wet	1	400	---	108	66-131%	---	---	
Methyl parathion	451	---	50.0	ug/kg wet	1	400	---	113	49-138%	---	---	Q-41
Mevinphos (Phosdrin)	395	---	50.0	ug/kg wet	1	400	---	99	12-176%	---	---	
Monocrotophos	266	---	50.0	ug/kg wet	1	400	---	67	10-153%	---	---	
Naled (Dibrom)	358	---	50.0	ug/kg wet	1	400	---	90	10-174%	---	---	
Parathion, ethyl	404	---	50.0	ug/kg wet	1	400	---	101	50-139%	---	---	
Phorate	437	---	50.0	ug/kg wet	1	400	---	109	23-142%	---	---	
Ronnel (Fenchlorphos)	431	---	50.0	ug/kg wet	1	400	---	108	45-138%	---	---	
Sulfotep	385	---	50.0	ug/kg wet	1	400	---	96	52-126%	---	---	
Sulprofos (Bolstar)	415	---	50.0	ug/kg wet	1	400	---	104	48-139%	---	---	
TEPP	231	---	200	ug/kg wet	1	400	---	58	16-126%	---	---	
Tetrachlorvinphos (Rabon)	405	---	50.0	ug/kg wet	1	400	---	101	54-129%	---	---	
Tokuthion (Prothiofos)	434	---	50.0	ug/kg wet	1	400	---	108	45-136%	---	---	
Trichloronate	417	---	50.0	ug/kg wet	1	400	---	104	37-140%	---	---	
Surr: Tributyl phosphate (Surr)			*Recovery: 90 %*		*Limits: 10-136 %*			*Dilution: 1x*				
Triphenyl phosphate (Surr)			*91 %*		*34-121 %*			*"*				
Duplicate (23I0375-DUP1)			Prepared: 09/13/23 10:49		Analyzed: 09/13/23 18:17							**PRO, R-04**
QC Source Sample: Non-SDG (A3I0808-02RE1)												
Azinphos methyl (Guthion)	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	

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Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23I0375 - EPA 3546							**Soil**					
Duplicate (23I0375-DUP1)			Prepared: 09/13/23 10:49		Analyzed: 09/13/23 18:17							**PRO, R-04**
QC Source Sample: Non-SDG (A3I0808-02RE1)												
Chlorpyrifos	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Coumaphos	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Demeton O	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Demeton S	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Diazinon	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Dichlorvos	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Dimethoate	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Disulfoton	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
EPN	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Ethoprop	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Fensulfothion	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Fenthion	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Malathion	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Merphos	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Methyl parathion	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Mevinphos (Phosdrin)	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Monocrotophos	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Naled (Dibrom)	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Parathion, ethyl	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Phorate	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Ronnel (Fenchlorphos)	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Sulfotep	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Sulprofos (Bolstar)	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
TEPP	ND	---	793	ug/kg wet	4	---	ND	---	---	---	30%	
Tetrachlorvinphos (Rabon)	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Tokuthion (Prothiofos)	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	
Trichloronate	ND	---	198	ug/kg wet	4	---	ND	---	---	---	30%	

Surr: Tributyl phosphate (Surr) *Recovery: 37 %* *Limits: 10-136 %* *Dilution: 4x*
Triphenyl phosphate (Surr) *71 %* *34-121 %* *"*

Matrix Spike (23I0375-MS1) Prepared: 09/13/23 10:49 Analyzed: 09/13/23 19:29

QC Source Sample: PAP182-COMP GH 1-9 (A3I0893-07RE1)

EPA 8270E OPPs

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ORELAP ID: **OR100062**

BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23I0375 - EPA 3546							**Soil**					
Matrix Spike (23I0375-MS1)			Prepared: 09/13/23 10:49		Analyzed: 09/13/23 19:29							
QC Source Sample: PAP182-COMP GH 1-9 (A3I0893-07RE1)												
Azinphos methyl (Guthion)	790	---	52.6	ug/kg dry	1	421	ND	**188**	**38-156%**	---	---	E, Q-01, Q-41
Chlorpyrifos	431	---	52.6	ug/kg dry	1	421	ND	103	47-140%	---	---	
Coumaphos	602	---	52.6	ug/kg dry	1	421	ND	143	37-160%	---	---	
Demeton O	185	---	52.6	ug/kg dry	1	194	ND	96	66-127%	---	---	
Demeton S	186	---	52.6	ug/kg dry	1	204	ND	91	70-121%	---	---	
Diazinon	383	---	52.6	ug/kg dry	1	421	ND	91	42-134%	---	---	
Dichlorvos	499	---	52.6	ug/kg dry	1	421	ND	119	39-142%	---	---	
Dimethoate	413	---	52.6	ug/kg dry	1	421	ND	98	16-139%	---	---	
Disulfoton	412	---	52.6	ug/kg dry	1	421	ND	91	28-145%	---	---	
EPN	542	---	52.6	ug/kg dry	1	421	ND	129	44-137%	---	---	
Ethoprop	416	---	52.6	ug/kg dry	1	421	ND	99	47-128%	---	---	
Fensulfothion	603	---	52.6	ug/kg dry	1	421	ND	143	27-147%	---	---	
Fenthion	436	---	52.6	ug/kg dry	1	421	ND	104	44-134%	---	---	
Malathion	416	---	52.6	ug/kg dry	1	421	ND	99	46-137%	---	---	
Merphos	474	---	52.6	ug/kg dry	1	421	ND	113	66-131%	---	---	
Methyl parathion	517	---	52.6	ug/kg dry	1	421	ND	123	49-138%	---	---	Q-41
Mevinphos (Phosdrin)	423	---	52.6	ug/kg dry	1	421	ND	101	12-176%	---	---	
Monocrotophos	213	---	52.6	ug/kg dry	1	421	ND	51	10-153%	---	---	
Naled (Dibrom)	358	---	52.6	ug/kg dry	1	421	ND	85	10-174%	---	---	
Parathion, ethyl	439	---	52.6	ug/kg dry	1	421	ND	104	50-139%	---	---	
Phorate	418	---	52.6	ug/kg dry	1	421	ND	99	23-142%	---	---	
Ronnel (Fenchlorphos)	451	---	52.6	ug/kg dry	1	421	ND	107	45-138%	---	---	
Sulfotep	392	---	52.6	ug/kg dry	1	421	ND	93	52-126%	---	---	
Sulprofos (Bolstar)	435	---	52.6	ug/kg dry	1	421	ND	103	48-139%	---	---	
TEPP	ND	---	210	ug/kg dry	1	421	ND	27	16-126%	---	---	
Tetrachlorvinphos (Rabon)	497	---	52.6	ug/kg dry	1	421	ND	118	54-129%	---	---	
Tokuthion (Prothiofos)	477	---	52.6	ug/kg dry	1	421	ND	113	45-136%	---	---	
Trichloronate	416	---	52.6	ug/kg dry	1	421	ND	99	37-140%	---	---	
Surr: Tributyl phosphate (Surr)			*Recovery: 96 %*		*Limits: 10-136 %*				*Dilution: 1x*			
Triphenyl phosphate (Surr)			*99 %*		*34-121 %*				*"*			

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BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23I0405 - EPA 3510C (Neutral pH)								Water				
Blank (23I0405-BLK1)			Prepared: 09/14/23 06:55 Analyzed: 09/14/23 13:36									
EPA 8270E OPPs												
Azinphos methyl (Guthion)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Chlorpyrifos	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Coumaphos	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Demeton O	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Demeton S	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Diazinon	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dichlorvos	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Dimethoate	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Disulfoton	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
EPN	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Ethoprop	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Fensulfothion	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Fenthion	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Malathion	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Merphos	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Methyl parathion	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Mevinphos (Phosdrin)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Monocrotophos	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Naled (Dibrom)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Parathion, ethyl	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Phorate	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Ronnel (Fenchlorphos)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Sulfotep	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Sulprofos (Bolstar)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
TEPP	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tetrachlorvinphos (Rabon)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Tokuthion (Prothiofos)	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Trichloronate	ND	---	0.500	ug/L	1	---	---	---	---	---	---	
Surr: Tributyl phosphate (Surr)			*Recovery: 96 %*			*Limits: 56-124 %*			*Dilution: 1x*			
Triphenyl phosphate (Surr)			*95 %*			*58-121 %*			*"*			
LCS (23I0405-BS1)			Prepared: 09/14/23 06:55 Analyzed: 09/14/23 14:07									
EPA 8270E OPPs												

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BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23I0405 - EPA 3510C (Neutral pH)							**Water**					
LCS (23I0405-BS1)			Prepared: 09/14/23 06:55 Analyzed: 09/14/23 14:07									
Chlorpyrifos	4.05	---	1.00	ug/L	2	4.00	---	101	47-133%	---	---	
Coumaphos	5.61	---	1.00	ug/L	2	4.00	---	**140**	**45-135%**	---	---	Q-41, Q-29
Demeton O	1.90	---	1.00	ug/L	2	1.84	---	103	10-125%	---	---	
Demeton S	1.98	---	1.00	ug/L	2	1.94	---	102	21-162%	---	---	
Diazinon	4.34	---	1.00	ug/L	2	4.00	---	108	43-129%	---	---	
Dichlorvos	5.05	---	1.00	ug/L	2	4.00	---	126	39-138%	---	---	
Dimethoate	3.94	---	1.00	ug/L	2	4.00	---	99	26-125%	---	---	
Disulfoton	4.13	---	1.00	ug/L	2	4.00	---	103	36-134%	---	---	
EPN	4.85	---	1.00	ug/L	2	4.00	---	121	47-133%	---	---	Q-41
Ethoprop	4.13	---	1.00	ug/L	2	4.00	---	103	52-125%	---	---	
Fensulfothion	5.70	---	1.00	ug/L	2	4.00	---	**143**	**15-141%**	---	---	Q-41, Q-29
Fenthion	4.19	---	1.00	ug/L	2	4.00	---	105	42-137%	---	---	
Malathion	4.01	---	1.00	ug/L	2	4.00	---	100	44-132%	---	---	
Merphos	5.05	---	1.00	ug/L	2	4.00	---	126	26-133%	---	---	Q-41
Methyl parathion	4.85	---	1.00	ug/L	2	4.00	---	121	49-134%	---	---	Q-41
Mevinphos (Phosdrin)	4.42	---	1.00	ug/L	2	4.00	---	111	10-196%	---	---	
Monocrotophos	0.787	---	0.500	ug/L	2	4.00	---	20	10-159%	---	---	
Naled (Dibrom)	3.73	---	1.00	ug/L	2	4.00	---	93	10-146%	---	---	
Parathion, ethyl	4.22	---	1.00	ug/L	2	4.00	---	106	52-134%	---	---	
Phorate	4.27	---	1.00	ug/L	2	4.00	---	107	23-139%	---	---	
Ronnel (Fenchlorphos)	4.28	---	1.00	ug/L	2	4.00	---	107	42-133%	---	---	
Sulfotep	3.87	---	1.00	ug/L	2	4.00	---	97	47-126%	---	---	
Sulprofos (Bolstar)	4.05	---	1.00	ug/L	2	4.00	---	101	47-135%	---	---	
TEPP	3.40	---	1.00	ug/L	2	4.00	---	85	10-208%	---	---	
Tetrachlorvinphos (Rabon)	4.78	---	1.00	ug/L	2	4.00	---	119	42-125%	---	---	
Tokuthion (Prothiofos)	4.40	---	1.00	ug/L	2	4.00	---	110	43-132%	---	---	
Trichloronate	3.98	---	1.00	ug/L	2	4.00	---	100	28-137%	---	---	
Surr: Tributyl phosphate (Surr)			*Recovery: 103 %*			*Limits: 56-124 %*			*Dilution: 2x*			
Triphenyl phosphate (Surr)			*103 %*			*58-121 %*			*"*			
LCS (23I0405-BS2)			Prepared: 09/14/23 06:55 Analyzed: 09/15/23 21:00									**Q-16**
EPA 8270E OPPs												
Azinphos methyl (Guthion)	8.41	---	2.50	ug/L	5	4.00	---	**210**	**43-135%**	---	---	Q-29, Q-41

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Project: **Fife AG Fields**
Project Number: **PAP182MAG.23E**
Project Manager: **Steve Omo**

Report ID:
A3I0893 - 09 28 23 1238

QUALITY CONTROL (QC) SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23I0405 - EPA 3510C (Neutral pH)							**Water**					
LCS Dup (23I0405-BSD1)			Prepared: 09/14/23 06:55 Analyzed: 09/14/23 14:39									**Q-19**
EPA 8270E OPPs												
Chlorpyrifos	4.01	---	1.00	ug/L	2	4.00	---	100	47-133%	1	30%	
Coumaphos	5.45	---	1.00	ug/L	2	4.00	---	**136**	**45-135%**	3	30%	Q-41, Q-29
Demeton O	1.92	---	1.00	ug/L	2	1.84	---	104	10-125%	1	30%	
Demeton S	1.93	---	1.00	ug/L	2	1.94	---	99	21-162%	3	30%	
Diazinon	4.28	---	1.00	ug/L	2	4.00	---	107	43-129%	1	30%	
Dichlorvos	5.21	---	1.00	ug/L	2	4.00	---	130	39-138%	3	30%	
Dimethoate	4.02	---	1.00	ug/L	2	4.00	---	101	26-125%	2	30%	
Disulfoton	4.08	---	1.00	ug/L	2	4.00	---	102	36-134%	1	30%	
EPN	4.74	---	1.00	ug/L	2	4.00	---	118	47-133%	2	30%	Q-41
Ethoprop	4.22	---	1.00	ug/L	2	4.00	---	105	52-125%	2	30%	
Fensulfothion	5.52	---	1.00	ug/L	2	4.00	---	138	15-141%	3	30%	Q-41
Fenthion	4.19	---	1.00	ug/L	2	4.00	---	105	42-137%	0.2	30%	
Malathion	3.95	---	1.00	ug/L	2	4.00	---	99	44-132%	1	30%	
Merphos	4.96	---	1.00	ug/L	2	4.00	---	124	26-133%	2	30%	Q-41
Methyl parathion	4.82	---	1.00	ug/L	2	4.00	---	120	49-134%	0.7	30%	Q-41
Mevinphos (Phosdrin)	4.56	---	1.00	ug/L	2	4.00	---	114	10-196%	3	30%	
Monocrotophos	0.825	---	0.500	ug/L	2	4.00	---	21	10-159%	5	30%	
Naled (Dibrom)	4.05	---	1.00	ug/L	2	4.00	---	101	10-146%	8	30%	
Parathion, ethyl	4.16	---	1.00	ug/L	2	4.00	---	104	52-134%	1	30%	
Phorate	4.40	---	1.00	ug/L	2	4.00	---	110	23-139%	3	30%	
Ronnel (Fenchlorphos)	4.28	---	1.00	ug/L	2	4.00	---	107	42-133%	0.09	30%	
Sulfotep	3.86	---	1.00	ug/L	2	4.00	---	97	47-126%	0.2	30%	
Sulprofos (Bolstar)	4.02	---	1.00	ug/L	2	4.00	---	101	47-135%	0.7	30%	
TEPP	3.75	---	1.00	ug/L	2	4.00	---	94	10-208%	10	30%	
Tetrachlorvinphos (Rabon)	4.76	---	1.00	ug/L	2	4.00	---	119	42-125%	0.3	30%	
Tokuthion (Prothiofos)	4.32	---	1.00	ug/L	2	4.00	---	108	43-132%	2	30%	
Trichloronate	3.94	---	1.00	ug/L	2	4.00	---	98	28-137%	1	30%	
Surr: Tributyl phosphate (Surr)			*Recovery: 107 %*		*Limits: 56-124 %*			*Dilution: 2x*				
Triphenyl phosphate (Surr)			*102 %*		*58-121 %*			*"*				
LCS Dup (23I0405-BSD2)			Prepared: 09/14/23 06:55 Analyzed: 09/15/23 21:35									**Q-16, Q-19**
EPA 8270E OPPs												
Azinphos methyl (Guthion)	8.30	---	2.50	ug/L	5	4.00	---	**208**	**43-135%**	1	30%	Q-29, Q-41

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BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

QUALITY CONTROL (QC) SAMPLE RESULTS

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23I0405 - EPA 3510C (Neutral pH)												**Water**

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25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23I0489 - EPA 3051A							**Soil**					
Blank (23I0489-BLK1)			Prepared: 09/15/23 12:07 Analyzed: 09/16/23 01:01									
EPA 6020B												
Arsenic	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Barium	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Cadmium	ND	---	0.200	mg/kg wet	10	---	---	---	---	---	---	
Chromium	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Lead	ND	---	0.200	mg/kg wet	10	---	---	---	---	---	---	
Mercury	ND	---	0.0800	mg/kg wet	10	---	---	---	---	---	---	
Selenium	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Silver	ND	---	0.200	mg/kg wet	10	---	---	---	---	---	---	
LCS (23I0489-BS1)			Prepared: 09/15/23 12:07 Analyzed: 09/16/23 01:07									
EPA 6020B												
Arsenic	48.1	---	1.00	mg/kg wet	10	50.0	---	96	80-120%	---	---	
Barium	49.5	---	1.00	mg/kg wet	10	50.0	---	99	80-120%	---	---	
Cadmium	48.3	---	0.200	mg/kg wet	10	50.0	---	97	80-120%	---	---	
Chromium	48.0	---	1.00	mg/kg wet	10	50.0	---	96	80-120%	---	---	
Lead	50.7	---	0.200	mg/kg wet	10	50.0	---	101	80-120%	---	---	
Mercury	1.01	---	0.0800	mg/kg wet	10	1.00	---	101	80-120%	---	---	
Selenium	24.1	---	1.00	mg/kg wet	10	25.0	---	97	80-120%	---	---	
Silver	27.4	---	0.200	mg/kg wet	10	25.0	---	110	80-120%	---	---	
Duplicate (23I0489-DUP1)			Prepared: 09/15/23 12:07 Analyzed: 09/16/23 01:17									
QC Source Sample: Non-SDG (A3I0802-01)												
Arsenic	**7.86**	---	1.23	mg/kg dry	10	---	7.40	---	---	6	20%	
Barium	**126**	---	1.23	mg/kg dry	10	---	117	---	---	7	20%	
Cadmium	ND	---	0.246	mg/kg dry	10	---	ND	---	---	---	20%	
Chromium	**36.9**	---	1.23	mg/kg dry	10	---	34.7	---	---	6	20%	
Lead	**6.20**	---	0.246	mg/kg dry	10	---	5.57	---	---	11	20%	
Mercury	ND	---	0.0983	mg/kg dry	10	---	ND	---	---	---	20%	
Selenium	ND	---	1.23	mg/kg dry	10	---	ND	---	---	---	20%	
Silver	ND	---	0.246	mg/kg dry	10	---	ND	---	---	---	20%	
Matrix Spike (23I0489-MS1)			Prepared: 09/15/23 12:07 Analyzed: 09/16/23 01:22									

Apex Laboratories

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Darrell Auvil, Client Services Manager

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: OR100062

ANALYTICAL REPORT

BB&A Environmental - Wilsonville	Project: Fife AG Fields	
25195 SW Parkway Ave, Suite #207	Project Number: PAP182MAG.23E	Report ID:
Wilsonville, OR 97070	Project Manager: Steve Omo	A3I0893 - 09 28 23 1238

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020B (ICPMS)

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23I0489 - EPA 3051A							**Soil**					
Matrix Spike (23I0489-MS1)			Prepared: 09/15/23 12:07 Analyzed: 09/16/23 01:22									
QC Source Sample: Non-SDG (A3I0802-01)												
EPA 6020B												
Arsenic	70.7	---	1.28	mg/kg dry	10	64.1	7.40	99	75-125%	---	---	
Barium	213	---	1.28	mg/kg dry	10	64.1	117	**149**	**75-125%**	---	---	Q-04
Cadmium	62.1	---	0.257	mg/kg dry	10	64.1	ND	97	75-125%	---	---	
Chromium	102	---	1.28	mg/kg dry	10	64.1	34.7	104	75-125%	---	---	
Lead	65.6	---	0.257	mg/kg dry	10	64.1	5.57	94	75-125%	---	---	
Mercury	1.19	---	0.103	mg/kg dry	10	1.28	ND	93	75-125%	---	---	
Selenium	30.8	---	1.28	mg/kg dry	10	32.1	ND	96	75-125%	---	---	
Silver	34.6	---	0.257	mg/kg dry	10	32.1	ND	108	75-125%	---	---	

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ORELAP ID: **OR100062**

BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	Detection Limit	Reporting Limit	Units	Dilution	Spike Amount	Source Result	% REC	% REC Limits	RPD	RPD Limit	Notes
Batch 23I0284 - Total Solids (Dry Weight) - 2022							Soil					
Duplicate (23I0284-DUP1)			Prepared: 09/11/23 10:25		Analyzed: 09/12/23 06:49							
QC Source Sample: Non-SDG (A3I0907-01)												
% Solids	**78.1**	---	1.00	%	1	---	78.3	---	---	0.2	10%	
Duplicate (23I0284-DUP2)			Prepared: 09/11/23 10:25		Analyzed: 09/12/23 06:49							
QC Source Sample: Non-SDG (A3I0907-02)												
% Solids	**77.6**	---	1.00	%	1	---	78.6	---	---	1	10%	
Duplicate (23I0284-DUP3)			Prepared: 09/11/23 10:25		Analyzed: 09/12/23 06:49							
QC Source Sample: Non-SDG (A3I0907-03)												
% Solids	**81.9**	---	1.00	%	1	---	81.9	---	---	0.04	10%	
Duplicate (23I0284-DUP4)			Prepared: 09/11/23 10:25		Analyzed: 09/12/23 06:49							
QC Source Sample: Non-SDG (A3I0907-04)												
% Solids	**67.5**	---	1.00	%	1	---	67.4	---	---	0.2	10%	
Duplicate (23I0284-DUP5)			Prepared: 09/11/23 10:25		Analyzed: 09/12/23 06:49							
QC Source Sample: Non-SDG (A3I0907-05)												
% Solids	**77.5**	---	1.00	%	1	---	76.6	---	---	1	10%	
Duplicate (23I0284-DUP6)			Prepared: 09/11/23 18:49		Analyzed: 09/12/23 06:49							
QC Source Sample: Non-SDG (A3I0949-01)												
% Solids	**69.4**	---	1.00	%	1	---	69.9	---	---	0.6	10%	
Duplicate (23I0284-DUP7)			Prepared: 09/11/23 18:49		Analyzed: 09/12/23 06:49							
QC Source Sample: Non-SDG (A3I0962-02)												
% Solids	**92.5**	---	1.00	%	1	---	93.6	---	---	1	10%	

No Client related Batch QC samples analyzed for this batch. See notes page for more information.

Apex Laboratories

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APEX LABORATORIES

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

ANALYTICAL REPORT

BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

SAMPLE PREPARATION INFORMATION

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3510C (Neutral pH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23I0438							
A3I0893-08	Water	EPA 8081B	09/07/23 15:45	09/14/23 12:54	920mL/5mL	1000mL/5mL	1.09
A3I0893-09	Water	EPA 8081B	09/07/23 15:00	09/14/23 12:54	830mL/5mL	1000mL/5mL	1.20
A3I0893-10	Water	EPA 8081B	09/07/23 14:30	09/14/23 12:54	950mL/5mL	1000mL/5mL	1.05
A3I0893-11	Water	EPA 8081B	09/07/23 13:00	09/14/23 12:54	1000mL/5mL	1000mL/5mL	1.00
A3I0893-12	Water	EPA 8081B	09/07/23 11:45	09/14/23 12:54	840mL/5mL	1000mL/5mL	1.19
A3I0893-13	Water	EPA 8081B	09/07/23 11:15	09/14/23 12:54	940mL/5mL	1000mL/5mL	1.06

Prep: EPA 3546/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23I0535							
A3I0893-01RE3	Soil	EPA 8081B	09/07/23 14:20	09/15/23 08:33	10.11g/10mL	10g/5mL	1.98
A3I0893-03RE3	Soil	EPA 8081B	09/07/23 12:10	09/15/23 08:33	10.11g/10mL	10g/5mL	1.98

Organophosphorus Pesticides (OPPs) by EPA 8270E (GC/MS)

Prep: EPA 3510C (Neutral pH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23I0405							
A3I0893-08	Water	EPA 8270E OPPs	09/07/23 15:45	09/14/23 06:55	880mL/2mL	1000mL/2mL	1.14
A3I0893-09	Water	EPA 8270E OPPs	09/07/23 15:00	09/14/23 06:55	930mL/2mL	1000mL/2mL	1.08
A3I0893-10	Water	EPA 8270E OPPs	09/07/23 14:30	09/14/23 06:55	870mL/2mL	1000mL/2mL	1.15
A3I0893-11	Water	EPA 8270E OPPs	09/07/23 13:00	09/14/23 06:55	820mL/2mL	1000mL/2mL	1.22
A3I0893-12	Water	EPA 8270E OPPs	09/07/23 11:45	09/14/23 06:55	840mL/2mL	1000mL/2mL	1.19
A3I0893-13	Water	EPA 8270E OPPs	09/07/23 11:15	09/14/23 06:55	840mL/2mL	1000mL/2mL	1.19

Prep: EPA 3546

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23I0375							
A3I0893-01	Soil	EPA 8270E OPPs	09/07/23 14:20	09/13/23 10:49	10.04g/5mL	10g/5mL	1.00
A3I0893-02	Soil	EPA 8270E OPPs	09/07/23 13:45	09/13/23 10:49	10.22g/5mL	10g/5mL	0.98
A3I0893-03	Soil	EPA 8270E OPPs	09/07/23 12:10	09/13/23 10:49	10.08g/5mL	10g/5mL	0.99
A3I0893-04	Soil	EPA 8270E OPPs	09/07/23 12:45	09/13/23 10:49	10.07g/5mL	10g/5mL	0.99
A3I0893-05	Soil	EPA 8270E OPPs	09/07/23 11:15	09/13/23 10:49	10.01g/5mL	10g/5mL	1.00
A3I0893-06	Soil	EPA 8270E OPPs	09/07/23 15:10	09/13/23 10:49	10.07g/5mL	10g/5mL	0.99
A3I0893-07RE1	Soil	EPA 8270E OPPs	09/07/23 10:10	09/13/23 10:49	10.09g/5mL	10g/5mL	0.99

Apex Laboratories

Darrell Auvil, Client Services Manager

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503-718-2323
ORELAP ID: **OR100062**

BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020B (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23I0489							
A3I0893-01	Soil	EPA 6020B	09/07/23 14:20	09/15/23 12:07	0.463g/50mL	0.5g/50mL	1.08
A3I0893-02	Soil	EPA 6020B	09/07/23 13:45	09/15/23 12:07	0.494g/50mL	0.5g/50mL	1.01
A3I0893-03	Soil	EPA 6020B	09/07/23 12:10	09/15/23 12:07	0.459g/50mL	0.5g/50mL	1.09
A3I0893-04	Soil	EPA 6020B	09/07/23 12:45	09/15/23 12:07	0.46g/50mL	0.5g/50mL	1.09
A3I0893-05	Soil	EPA 6020B	09/07/23 11:15	09/15/23 12:07	0.463g/50mL	0.5g/50mL	1.08
A3I0893-06	Soil	EPA 6020B	09/07/23 15:10	09/15/23 12:07	0.475g/50mL	0.5g/50mL	1.05
A3I0893-07	Soil	EPA 6020B	09/07/23 10:10	09/15/23 12:07	0.472g/50mL	0.5g/50mL	1.06

Percent Dry Weight

Prep: Total Solids (Dry Weight) - 2022

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 23I0284							
A3I0893-01	Soil	EPA 8000D	09/07/23 14:20	09/11/23 10:25			NA
A3I0893-02	Soil	EPA 8000D	09/07/23 13:45	09/11/23 10:25			NA
A3I0893-03	Soil	EPA 8000D	09/07/23 12:10	09/11/23 10:25			NA
A3I0893-04	Soil	EPA 8000D	09/07/23 12:45	09/11/23 10:25			NA
A3I0893-05	Soil	EPA 8000D	09/07/23 11:15	09/11/23 10:25			NA
A3I0893-06	Soil	EPA 8000D	09/07/23 15:10	09/11/23 10:25			NA
A3I0893-07	Soil	EPA 8000D	09/07/23 10:10	09/11/23 10:25			NA

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503-718-2323
ORELAP ID: **OR100062**

BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

QUALIFIER DEFINITIONS

Client Sample and Quality Control (QC) Sample Qualifier Definitions:

Apex Laboratories

C-05	Extract has undergone a GPC (Gel-Permeation Chromatography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
E	Estimated Value. The result is above the calibration range of the instrument.
P-11	Result estimated. Secondary column confirmation does not meet method criteria due to matrix interference.
PRO	Sample has undergone sample processing prior to extraction and analysis.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-16	Reanalysis of an original Batch QC sample.
Q-19	Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
Q-29	Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
Q-30	Recovery for Lab Control Spike (LCS) is below the lower control limit. Data may be biased low.
Q-31	Estimated Results. Recovery of Continuing Calibration Verification sample below lower control limit for this analyte. Results are likely biased low.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
R-04	Reporting levels elevated due to preparation and/or analytical dilution necessary for analysis.

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ANALYTICAL REPORT

BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

REPORTING NOTES AND CONVENTIONS:

Abbreviations:

DET Analyte DETECTED at or above the detection or reporting limit.

ND Analyte NOT DETECTED at or above the detection or reporting limit.

NR Result Not Reported

RPD Relative Percent Difference. RPDs for Matrix Spikes and Matrix Spike Duplicates are based on concentration, not recovery.

Detection Limits: Limit of Detection (LOD)

Limits of Detection (LODs) are normally set at a level of one half the validated Limit of Quantitation (LOQ).
If no value is listed ('-----'), then the data has not been evaluated below the Reporting Limit.

Reporting Limits: Limit of Quantitation (LOQ)

Validated Limits of Quantitation (LOQs) are reported as the Reporting Limits for all analyses where the LOQ, MRL, PQL or CRL are requested. The LOQ represents a level at or above the low point of the calibration curve, that has been validated according to Apex Laboratories' comprehensive LOQ policies and procedures.

Reporting Conventions:

Basis: Results for soil samples are generally reported on a 100% dry weight basis.
The Result Basis is listed following the units as " dry", " wet", or " " (blank) designation.

" dry" Sample results and Reporting Limits are reported on a dry weight basis. (i.e. "ug/kg dry")
See Percent Solids section for details of dry weight analysis.

" wet" Sample results and Reporting Limits for this analysis are normally dry weight corrected, but have not been modified in this case.

" " Results without 'wet' or 'dry' designation are not normally dry weight corrected. These results are considered 'As Received'.

Results for Volatiles analyses on soils and sediments that are reported on a “dry weight” basis include the water miscible solvent (WMS) correction referenced in the EPA 8000 Method guidance documents. Solid and Liquid samples reported on an “As Received” basis do not have the WMS correction applied, as dry weight was not performed.

QC Source:

In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) may be analyzed to demonstrate accuracy and precision of the extraction batch.

Non-Client Batch QC Samples (Duplicates and Matrix Spike/Duplicates) may not be included in this report. Please request a Full QC report if this data is required.

Miscellaneous Notes:

" --- " QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

" *** " Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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REPORTING NOTES AND CONVENTIONS (Cont.):

Blanks:

Standard practice is to evaluate the results from Blank QC Samples down to a level equal to ½ the Reporting Limit (RL).

-For Blank hits falling between ½ the RL and the RL (J flagged hits), the associated sample and QC data will receive a 'B-02' qualifier.

-For Blank hits above the RL, the associated sample and QC data will receive a 'B' qualifier, per Apex Laboratories' Blank Policy.
For further details, please request a copy of this document.

-Sample results flagged with a 'B' or 'B-02' qualifier are potentially biased high if the sample results are less than ten times the level found in the blank for inorganic analyses, or less than five times the level found in the blank for organic analyses.

'B' and 'B-02' qualifications are only applied to sample results detected above the Reporting Level, if results are not reported to the MDL.

Preparation Notes:

Mixed Matrix Samples:

Water Samples:

Water samples containing significant amounts of sediment are decanted or separated prior to extraction, and only the water portion analyzed, unless otherwise directed by the client.

Soil and Sediment Samples:

Soil and Sediment samples containing significant amounts of water are decanted prior to extraction, and only the solid portion analyzed, unless otherwise directed by the client.

Sampling and Preservation Notes:

Certain regulatory programs, such as National Pollutant Discharge Elimination System (NPDES), require that activities such as sample filtration (for dissolved metals, orthophosphate, hexavalent chromium, etc.) and testing of short hold analytes (pH, Dissolved Oxygen, etc.) be performed in the field (on-site) within a short time window. In addition, sample matrix spikes are required for some analyses, and sufficient volume must be provided, and billable site specific QC requested, if this is required. All regulatory permits should be reviewed to ensure that these requirements are being met.

Data users should be aware of which regulations pertain to the samples they submit for testing. If related sample collection activities are not approved for a particular regulatory program, results should be considered estimates. Apex Laboratories will qualify these analytes according to the most stringent requirements, however results for samples that are for non-regulatory purposes may be acceptable.

Samples that have been filtered and preserved at Apex Laboratories per client request are listed in the preparation section of the report with the date and time of filtration listed.

Apex Laboratories maintains detailed records on sample receipt, including client label verification, cooler temperature, sample preservation, hold time compliance and field filtration. Data is qualified as necessary, and the lack of qualification indicates compliance with required parameters.

Apex Laboratories

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ANALYTICAL REPORT

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25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

LABORATORY ACCREDITATION INFORMATION

ORELAP Certification ID: OR100062 (Primary Accreditation) - EPA ID: OR01039

All methods and analytes reported from work performed at Apex Laboratories are included on Apex Laboratories' ORELAP Scope of Certification, with the exception of any analyte(s) listed below:

Apex Laboratories

Matrix	Analysis	TNI_ID	Analyte	TNI_ID	Accreditation

All reported analytes are included in Apex Laboratories' current ORELAP scope.

Secondary Accreditations

Apex Laboratories also maintains reciprocal accreditation with non-TNI states (Washington DOE), as well as other state specific accreditations not listed here.

Subcontract Laboratory Accreditations

Subcontracted data falls outside of Apex Laboratories' Scope of Accreditation.
Please see the Subcontract Laboratory report for full details, or contact your Project Manager for more information.

Field Testing Parameters

Results for Field Tested data are provded by the client or sampler, and fall outside of Apex Laboratories' Scope of Accreditation.

Apex Laboratories

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APEX LABS

CHAIN OF CUSTODY

12232 S.W. Garden Place, Tigard, OR 97223 Ph: 503-718-2323 Fax: 503-718-0333

Lab # A3I0893

COC 1 OF 1

Company: BB&A Environmental | Project Mgr: Steve Omo | Project Name: FIFE AG Fields | Project # PAP182MAG.23E

Address: 25195 SW Parkway Ave. #207, Wilsonville, OR 97070 | Phone: 503-570-9484 | Fax: | Email: smomo@bbaenv.com

Sampled by: Steve Omo

Site Location: WA OR

Other:

ANALYSIS REQUEST

SAMPLE ID	LAB ID #	DATE	TIME	MATRIX	# OF CONTAINERS	NWTPH-HCID	NWTPH-Dx	NWTPH-Gx	BTEX + N	8260 RBDM VOCs	8260 Halo VOCs	8260 VOCs	8270 SIM PAHs	8082 PCBs	8081 Chlor. Pest	RCRA Metals (8)	Priority Metals (13)	Al, Sb, As, Ba, Be, Cd Ca, Cr, Co, Cu, Fe, Pb Hg, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn	TCLP Metals (8)	Organochlorine Pesticides 8081	OPP Pesticides	DIELDRIN 8081	DIOXIN
PAP182 - COMP 1		9/7/2023	14:20	S	1											X					X	X	
PAP182 - COMP 2		9/7/2023	13:45	S	1											X					X		
PAP182 - COMP 3		9/7/2023	12:10	S	1											X					X	X	
PAP182 - COMP 4		9/7/2023	12:45	S	1											X					X		
PAP182 - COMP 5		9/7/2023	11:15	S	1											X					X		
PAP182 - COMP 6		9/7/2023	15:10	S	1											X					X		
PAP182 - COMP GH 1-9		9/7/2023	10:10	S	1											X					X		
PAP182 - P1 -GW		9/7/2023	15:45	W	3															X	X		
PAP182 - P2 -GW		9/7/2023	15:00	W	3															X	X		
PAP182 - P3 -GW		9/7/2023	14:30	W	3															X	X		
PAP182 - P4 -GW		9/7/2023	13:00	W	3															X	X		
PAP182 - P5 -GW		9/7/2023	11:45	W	3															X	X		
PAP182 - P6 -GW		9/7/2023	11:15	W	3															X	X		
PAP182 - FULL COMP		9/7/2023	16:00	S	1																		X

Normal Turn Around Time (TAT) = 7-10 Business Days

TAT Requested (circle): 24 HR 48 HR 72 HR 4 DAY 5 DAY Other: ________

SAMPLES ARE HELD FOR 30 DAYS

SPECIAL INSTRUCTIONS:

EMAIL DRAFT RESULTS

250 ml Poly FIELD FILTERED – might have had filter break-through on P2? P3?

RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:
Signature: [signature]	Date: 9/8/2023	Signature: [signature]	9-8-23	Signature:	Date:	Signature:
Printed Name: STEPHEN OMO	Time: 11:27	Printed Name: Diego Salazar	1127	Printed Name:	Time:	Printed Name:
Company: BB&A ENVIRONMENTAL		Company: Apex		Company:		Company:

Apex Laboratories, LLC
6700 S.W. Sandburg Street
Tigard, OR 97223
503-718-2323
ORELAP ID: **OR100062**

BB&A Environmental - Wilsonville	Project: **Fife AG Fields**	
25195 SW Parkway Ave, Suite #207	Project Number: **PAP182MAG.23E**	**Report ID:**
Wilsonville, OR 97070	Project Manager: **Steve Omo**	**A3I0893 - 09 28 23 1238**

APEX LABS COOLER RECEIPT FORM

Client: BB&A Environmental Element WO#: A3 I0893

Project/Project #: Fife AG fields / PAP182MAG.23E

Delivery Info:

Date/time received: 9-8-23 @ 1127 By: DJS

Delivered by: Apex__Client__ESS~~X~~ FedEx__UPS__Radio__Morgan__SDS__Evergreen__Other__ DJS 9-8-23

Cooler Inspection Date/time inspected: 9-8-23 @ 1127 By: DJS

Chain of Custody included? Yes X No

Signed/dated by client? Yes Y No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (°C)	2.5	3.7					
Custody seals? (Y/N)	N	N					
Received on ice? (Y/N)	Y	Y					
Temp. blanks? (Y/N)	Y	Y					
Ice type: (Gel/Real/Other)	Gel	Gel					
Condition (In/Out):	In	In					

Cooler out of temp? (Y/N) Possible reason why:

Green dots applied to out of temperature samples? Yes~~No~~

Out of temperature samples form initiated? Yes~~No~~

Sample Inspection: Date/time inspected: 9-8-23 @ 1312 By: DJS

All samples intact? Yes X No ___ Comments:

Bottle labels/COCs agree? Yes X No ___ Comments:

COC/container discrepancies form initiated? Yes ___ No X

Containers/volumes received appropriate for analysis? Yes X No ___ Comments:

Do VOA vials have visible headspace? Yes ___ No ___ NA X

Comments

Water samples: pH checked: Yes X No___NA___ pH appropriate? Yes X No___NA___

Comments:

Additional information:

Labeled by: DJS Witness: VT Cooler Inspected by: DJS

Form Y-003 R-00

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document(s) and updated by any subsequent written communications. This analytical report must be reproduced in its entirety.

Darrell Auvil, Client Services Manager

CERES Analytical Laboratory, Inc.
4919 Windplay Dr. Suite 1, El Dorado Hills, CA 95762

September 28, 2023 Ceres ID: 16884

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223

The following report contains the results for the one soil sample received on September 12, 2023. This sample was analyzed for tetra through octa chlorinated dioxins and dibenzofurans by EPA method 1613. Standard 2-week turn-around time was provided for this work.

Sample results are reported on a dry weight basis.

This work was authorized under Apex Laboratories' Project # A3I0893.

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (CCV) met the acceptance criteria.

The report consists of a Cover Letter, Sample Inventory (Section I), Data Summary (Section II), Sample Tracking (Section VI), and Qualifiers/Abbreviations (Section VII). Raw Data (Section III), Continuing Calibration (Section IV), and Initial Calibration (Section V) are available in a full report (.pdf format) upon request.

If you have any questions regarding this report, please feel free to contact me at (916)932-5011.

Sincerely,

James M. Hedin
Director of Operations/CEO
jhedin@ceres-lab.com

Section I: Sample Inventory

Ceres Sample ID:	Sample ID	Date Received	Collection Date	&Time
16884-001	PAP182- FULL COMP (A3I0893-14)	9/13/2023	9/7/2023	16:00

Section II: Data Summary

CERES Analytical Laboratory, Inc.
4919 Windplay Dr. Suite 1, El Dorado Hills, CA 95762

EPA Method 1613B

Quality Assurance Sample **Method Blank**	**QC Batch #:** 2957 **Matrix:** Soil	**Date Received:** NA **Date Extracted:** 9/23/2023
Project ID: A3I0893	**Sample Size:** 10.00 g	**Date Analyzed:** 9/28/2023

Analyte	Conc. (pg/g)	MDL	RL	Qual.	Labeled Standards	% R	LCL-UCL (a)	Qualifiers
2,3,7,8-TCDD	DL= 0.193	0.172	0.500		13C-2378-TCDD	80.0	25-164	
12378-PeCDD	DL= 0.809	0.327	2.50		13C-12378-PeCDD	82.7	25-181	
123478-HxCDD	DL= 0.567	0.327	2.50		13C-123478-HxCDD	91.2	32-141	
123678-HxCDD	DL= 0.523	0.655	2.50		13C-123678-HxCDD	74.2	28-130	
123789-HxCDD	DL= 0.606	0.315	2.50		13C-1234678-HpCDD	78.5	23-140	
1234678-HpCDD	DL= 1.01	0.409	2.50		13C-OCDD	61.2	17-157	
OCDD	DL= 3.20	1.01	5.00		13C-2378-TCDF	77.7	24-169	
2,3,7,8-TCDF	DL= 0.161	0.0886	0.500		13C-12378-PeCDF	84.9	24-185	
12378-PeCDF	DL= 0.382	0.412	2.50		13C-23478-PeCDF	84.1	21-178	
23478-PeCDF	DL= 0.363	0.422	2.50		13C-123478-HxCDF	89.5	26-152	
123478-HxCDF	DL= 1.33	0.518	2.50		13C-123678-HxCDF	75.3	26-123	
123678-HxCDF	DL= 1.23	0.533	2.50		13C-234678-HxCDF	82.5	28-136	
234678-HxCDF	DL= 1.17	0.319	2.50		13C-123789-HxCDF	79.5	29-147	
123789-HxCDF	DL= 1.45	0.425	2.50		13C-1234678-HpCDF	83.2	28-143	
1234678-HpCDF	DL= 0.768	0.279	2.50		13C-1234789-HpCDF	75.5	26-138	
1234789-HpCDF	DL= 1.08	0.378	2.50					
OCDF	DL= 1.44	0.461	5.00					

Totals	Conc. (pg/g)	EMPC
Total TCDD	DL= 0.193	
Total PeCDD	DL= 0.809	
Total HxCDD	DL= 0.606	
Total HpCDD	DL= 0.743	
Total TCDF	DL= 0.161	
Total PeCDF	DL= 0.382	
Total HxCDF	DL= 1.45	
Total HpCDF	DL= 1.08	

CRS

37Cl4-2378-TCDD	105	35-197

DL - Signifies Non-Detect (ND<) sample specific detection limit.
EMPC - Estimated Maximum Possible Concentration due to ion abundance ratio failure.
(a) - Lower control limit - Upper control limit
(b) - TEQ based on (2005) World Health Organization (WHO) Toxic Equivalent Factors.

Total Toxic Equivalency (TEQ min.) (b)**:** 0.0 pg/g

Analyst: JMH **Reviewed by: BS**

CERES Analytical Laboratory, Inc.
4919 Windplay Dr. Suite 1, El Dorado Hills, CA 95762

EPA Method 1613B

Quality Assurance Sample **Ongoing Precision and Recovery**	**QC Batch #:** 2957 **Matrix:** Soil	**Date Received:** NA **Date Extracted:** 9/23/2023 **Date Analyzed:** 9/28/2023
Project ID: A3I0893	**Sample Size:** 10.00 g	

Analyte	Conc. (ng/mL)	Limits (a)
2,3,7,8-TCDD	10.4	6.7-15.8
12378-PeCDD	57.2	35-71
123478-HxCDD	52.1	35-82
123678-HxCDD	51.5	38-67
123789-HxCDD	53.6	32-81
1234678-HpCDD	55.2	35-70
OCDD	111	78-144
2,3,7,8-TCDF	10.8	7.5-15.8
12378-PeCDF	55.7	40-67
23478-PeCDF	58.9	34-80
123478-HxCDF	49.3	36-67
123678-HxCDF	61.1	42-65
234678-HxCDF	53.3	35-78
123789-HxCDF	50.4	39-65
1234678-HpCDF	55.0	41-61
1234789-HpCDF	52.7	39-69
OCDF	110	63-170

Labeled Standards	% Rec.	Limits (a)
13C-2378-TCDD	82.0	20-175
13C-12378-PeCDD	83.5	21-227
13C-123478-HxCDD	82.3	21-193
13C-123678-HxCDD	68.9	25-163
13C-1234678-HpCDD	73.7	26-166
13C-OCDD	62.3	13-198
13C-2378-TCDF	78.1	22-152
13C-12378-PeCDF	86.1	21-192
13C-23478-PeCDF	86.9	13-328
13C-123478-HxCDF	76.4	19-202
13C-123678-HxCDF	64.4	21-159
13C-234678-HxCDF	72.3	22-176
13C-123789-HxCDF	73.2	17-205
13C-1234678-HpCDF	77.8	21-158
13C-1234789-HpCDF	71.6	20-186
CRS		
37Cl4-2378-TCDD	107	31-191

(a) Limits based on method acceptance criteria.

Analyst: JMH **Reviewed by: BS**

CERES Analytical Laboratory, Inc.
4919 Windplay Dr. Suite 1, El Dorado Hills, CA 95762

EPA Method 1613B

Client Sample ID: PAP182- FULL COMP (A3I0893-14)		
Project ID: A3I0893	**Ceres Sample ID:** 16884-001	**Date Received:** 9/13/2023
	QC Batch #: 2957	**Date Extracted:** 9/23/2023
Date Collected: 9/7/2023	**Matrix:** Soil	**Date Analyzed:** 9/28/2023
Time Collected: 4:00 PM	**Sample Size:** 10.61 g **% Solids:** 94.5	

Analyte	Conc. (pg/g)	MDL	RL	Qual.
2,3,7,8-TCDD	DL= 0.215	0.172	0.499	
12378-PeCDD	DL= 0.700	0.327	2.49	
123478-HxCDD	DL= 0.592	0.327	2.49	
123678-HxCDD	4.27	0.655	2.49	
123789-HxCDD	2.42	0.315	2.49	
1234678-HpCDD	62.5	0.409	2.49	
OCDD	462	1.01	4.99	
2,3,7,8-TCDF	1.49	0.0886	0.499	
12378-PeCDF	DL= 0.898	0.412	2.49	
23478-PeCDF	DL= 0.815	0.422	2.49	
123478-HxCDF	DL= 2.15	0.518	2.49	
123678-HxCDF	DL= 2.00	0.533	2.49	
234678-HxCDF	DL= 2.00	0.319	2.49	
123789-HxCDF	DL= 2.45	0.425	2.49	
1234678-HpCDF	9.01	0.279	2.49	
1234789-HpCDF	DL= 1.05	0.378	2.49	
OCDF	20.3	0.461	4.99	

Totals	Conc. (pg/g)	EMPC	
Total TCDD	6.29		
Total PeCDD	2.03		
Total HxCDD	26.4		
Total HpCDD	108		
Total TCDF	17.7		X
Total PeCDF	8.11		
Total HxCDF	10.6		
Total HpCDF	26.5		

Labeled Standards	% R	LCL-UCL (a)	Qualifiers
13C-2378-TCDD	89.2	25-164	
13C-12378-PeCDD	88.4	25-181	
13C-123478-HxCDD	79.9	32-141	
13C-123678-HxCDD	74.6	28-130	
13C-1234678-HpCDD	67.6	23-140	
13C-OCDD	46.4	17-157	
13C-2378-TCDF	81.8	24-169	
13C-12378-PeCDF	88.4	24-185	
13C-23478-PeCDF	93.7	21-178	
13C-123478-HxCDF	78.9	26-152	
13C-123678-HxCDF	69.9	26-123	
13C-234678-HxCDF	74.8	28-136	
13C-123789-HxCDF	74.3	29-147	
13C-1234678-HpCDF	65.7	28-143	
13C-1234789-HpCDF	67.7	26-138	

CRS		
37Cl4-2378-TCDD	114	35-197

DL - Signifies Non-Detect (ND<) sample specific detection limit.
EMPC - Estimated Maximum Possible Concentration due to ion abundance ratio failure.
(a) - Lower control limit - Upper control limit
(b) - TEQ based on (2005) World Health Organization (WHO) Toxic Equivalent Factors.

Total Toxic Equivalency (TEQ min.) (b)**:** 1.68 pg/g

Analyst: JMH **Reviewed by: BS**

Section VI: Sample Tracking

SUBCONTRACT ORDER

Apex Laboratories

Akca 9/8/23 **A3I0893** DJS

SENDING LABORATORY:

Apex Laboratories
6700 S.W. Sandburg Street
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 336-0745
Project Manager: Darrell Auvil

RECEIVING LABORATORY:

Ceres Analytical Laboratory, Inc
4919 Windplay Drive, Suite 1
El Dorado Hills, CA 95762
Phone :(916) 932-5011
Fax: -9

Sample Name: PAP182- FULL COMP **Soil** **Sampled: 09/07/23 16:00** (A3I0893-14)

Analysis	Due	Expires	Comments
1613B Dioxins and Furans (SUB)	09/21/23 17:00	09/06/24 16:00	Ceres
Containers Supplied:			
(A)8 oz Glass Jar			

Standard TAT

Released By	Date	Received By	Date
[illegible]	9/11/23	UPS (Shipper)	
UPS (Shipper)		[illegible]	9/12/23
Released By	Date	Received By	Date

Sample Receipt Check List Logged by: H H (initials)

Ceres ID: 16884	Date/Time: 9/13/23 11:16
Client Project ID: A3I0893	Received Temp: 3.9 °C Acceptable: (Y) / N
Chain of Custody Relinquished by signed?	(Y) / N
Chain of Custody Received by signed?	(Y) / N
Custody Seals? Present?	Y / N
Intact?	Y / N
NA:	(NA)
Unlabeled / Illegible Samples	Y / (N)
Proper Containers:	(Y) / N
Preservation Acceptable (Chemical or Temperature)?	(Y) / N
Drinking Water, Sodium Thiosulfate present?	Y / N / (NA)
Residual Cl?	Y / N / (NA)
Aqueous sample pH: _____	(NA)
List COC discrepancies: HH 9/13/23	
List Damaged Samples: HH 9/13/23	

Section VII: Qualifiers/Abbreviations

J	Concentration found below the lower quantitation limit but greater than zero.
B	Analyte present in the associated Method Blank.
E	Concentration found exceeds the Calibration range of the HRGC/HRMS.
D	This analyte concentration was calculated from a dilution.
X	The concentration found is the estimated maximum possible concentration due to chlorinated diphenyl ethers present in the sample.
H	Recovery limits exceeded. See cover letter.
*****	Results taken from dilution.
I	Interference. See cover letter.
Conc.	Concentration Found
DL	Calculated Detection Limit
ND	Non-Detect
% Rec.	Percent Recovery

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

PACAGLAB.COM
503.626.7943
21830 S.W. Alexander Ln
Sherwood, OR 97140

BB&A Environmental
25195 SW Parkway Ave, Suite 207
Wilsonville, OR 97070

Report Number: P232113
Report Date: September 25, 2023
Client Project ID: PAP182MAG

Analytical Report

Client Sample ID: PAP182-COMP 1
Matrix: soil

PAL Sample ID: P232113-01
Sample Date: 9/7/23
Received Date: 9/8/23

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8321B (LC-MS/MS)					
9/19/23	9/22/23	3-Hydroxycarbofuran	ND	0.0067 mg/kg	
9/19/23	9/22/23	Aldicarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Aldicarb Sulfone	ND	0.0067 mg/kg	
9/19/23	9/22/23	Bendiocarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Carbaryl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Carbofuran	ND	0.0067 mg/kg	
9/19/23	9/22/23	Methiocarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Methomyl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Oxamyl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Propoxur	ND	0.0067 mg/kg	
9/19/23	9/22/23	Thiobencarb	ND	0.0067 mg/kg	

Surrogate Recovery: 78 %
Surrogate Recovery Range: 60-140
(TPP-d15 used as Surrogate)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Kara Greer, Project Manager

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

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21830 S.W. Alexander Ln
Sherwood, OR 97140

BB&A Environmental
25195 SW Parkway Ave, Suite 207
Wilsonville, OR 97070

Report Number: P232113
Report Date: September 25, 2023
Client Project ID: PAP182MAG

Analytical Report

Client Sample ID: PAP182-COMP 2
Matrix: soil

PAL Sample ID: P232113-02
Sample Date: 9/7/23
Received Date: 9/8/23

Method: Modified EPA 8321B (LC-MS/MS)

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
9/19/23	9/22/23	3-Hydroxycarbofuran	ND	0.0067 mg/kg	
9/19/23	9/22/23	Aldicarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Aldicarb Sulfone	ND	0.0067 mg/kg	
9/19/23	9/22/23	Bendiocarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Carbaryl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Carbofuran	ND	0.0067 mg/kg	
9/19/23	9/22/23	Methiocarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Methomyl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Oxamyl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Propoxur	ND	0.0067 mg/kg	
9/19/23	9/22/23	Thiobencarb	ND	0.0067 mg/kg	

Surrogate Recovery: 79 %
Surrogate Recovery Range: 60-140
(TPP-d15 used as Surrogate)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Kara Greer, Project Manager

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

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Sherwood, OR 97140

BB&A Environmental
25195 SW Parkway Ave, Suite 207
Wilsonville, OR 97070

Report Number: P232113
Report Date: September 25, 2023
Client Project ID: PAP182MAG

Analytical Report

Client Sample ID: PAP182-COMP 3
Matrix: soil

PAL Sample ID: P232113-03
Sample Date: 9/7/23
Received Date: 9/8/23

Method: Modified EPA 8321B (LC-MS/MS)

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
9/19/23	9/22/23	3-Hydroxycarbofuran	ND	0.0067 mg/kg	
9/19/23	9/22/23	Aldicarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Aldicarb Sulfone	ND	0.0067 mg/kg	
9/19/23	9/22/23	Bendiocarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Carbaryl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Carbofuran	ND	0.0067 mg/kg	
9/19/23	9/22/23	Methiocarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Methomyl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Oxamyl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Propoxur	ND	0.0067 mg/kg	
9/19/23	9/22/23	Thiobencarb	ND	0.0067 mg/kg	

Surrogate Recovery: 71 %
Surrogate Recovery Range: 60-140
(TPP-d15 used as Surrogate)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Kara Greer, Project Manager

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

PACAGLAB.COM
503.626.7943
21830 S.W. Alexander Ln
Sherwood, OR 97140

BB&A Environmental
25195 SW Parkway Ave, Suite 207
Wilsonville, OR 97070

Report Number: P232113
Report Date: September 25, 2023
Client Project ID: PAP182MAG

Analytical Report

Client Sample ID: PAP182-COMP 4
Matrix: soil

PAL Sample ID: P232113-04
Sample Date: 9/7/23
Received Date: 9/8/23

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8321B (LC-MS/MS)					
9/19/23	9/22/23	3-Hydroxycarbofuran	ND	0.0067 mg/kg	
9/19/23	9/22/23	Aldicarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Aldicarb Sulfone	ND	0.0067 mg/kg	
9/19/23	9/22/23	Bendiocarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Carbaryl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Carbofuran	ND	0.0067 mg/kg	
9/19/23	9/22/23	Methiocarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Methomyl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Oxamyl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Propoxur	ND	0.0067 mg/kg	
9/19/23	9/22/23	Thiobencarb	ND	0.0067 mg/kg	

Surrogate Recovery: 80 %
Surrogate Recovery Range: 60-140
(TPP-d15 used as Surrogate)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Kara Greer, Project Manager

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

PACAGLAB.COM
503.626.7943
21830 S.W. Alexander Ln
Sherwood, OR 97140

BB&A Environmental
25195 SW Parkway Ave, Suite 207
Wilsonville, OR 97070

Report Number: P232113
Report Date: September 25, 2023
Client Project ID: PAP182MAG

Analytical Report

Client Sample ID: PAP182-COMP 5
Matrix: soil

PAL Sample ID: P232113-05
Sample Date: 9/7/23
Received Date: 9/8/23

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8321B (LC-MS/MS)					
9/19/23	9/22/23	3-Hydroxycarbofuran	ND	0.0067 mg/kg	
9/19/23	9/22/23	Aldicarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Aldicarb Sulfone	ND	0.0067 mg/kg	
9/19/23	9/22/23	Bendiocarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Carbaryl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Carbofuran	ND	0.0067 mg/kg	
9/19/23	9/22/23	Methiocarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Methomyl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Oxamyl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Propoxur	ND	0.0067 mg/kg	
9/19/23	9/22/23	Thiobencarb	ND	0.0067 mg/kg	

Surrogate Recovery: 77 %
Surrogate Recovery Range: 60-140
(TPP-d15 used as Surrogate)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Kara Greer, Project Manager

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

PACAGLAB.COM
503.626.7943
21830 S.W. Alexander Ln
Sherwood, OR 97140

BB&A Environmental
25195 SW Parkway Ave, Suite 207
Wilsonville, OR 97070

Report Number: P232113
Report Date: September 25, 2023
Client Project ID: PAP182MAG

Analytical Report

Client Sample ID: PAP182-COMP 6
Matrix: soil

PAL Sample ID: P232113-06
Sample Date: 9/7/23
Received Date: 9/8/23

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8321B (LC-MS/MS)					
9/19/23	9/22/23	3-Hydroxycarbofuran	ND	0.0067 mg/kg	
9/19/23	9/22/23	Aldicarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Aldicarb Sulfone	ND	0.0067 mg/kg	
9/19/23	9/22/23	Bendiocarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Carbaryl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Carbofuran	ND	0.0067 mg/kg	
9/19/23	9/22/23	Methiocarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Methomyl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Oxamyl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Propoxur	ND	0.0067 mg/kg	
9/19/23	9/22/23	Thiobencarb	ND	0.0067 mg/kg	

Surrogate Recovery: 72 %
Surrogate Recovery Range: 60-140
(TPP-d15 used as Surrogate)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Kara Greer, Project Manager

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503.626.7943
21830 S.W. Alexander Ln
Sherwood, OR 97140

BB&A Environmental
25195 SW Parkway Ave, Suite 207
Wilsonville, OR 97070

Report Number: P232113
Report Date: September 25, 2023
Client Project ID: PAP182MAG

Analytical Report

Client Sample ID: PAP182-COMP GH 1-9
Matrix: soil

PAL Sample ID: P232113-07
Sample Date: 9/7/23
Received Date: 9/8/23

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8321B (LC-MS/MS)					
9/19/23	9/22/23	3-Hydroxycarbofuran	ND	0.0067 mg/kg	
9/19/23	9/22/23	Aldicarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Aldicarb Sulfone	ND	0.0067 mg/kg	
9/19/23	9/22/23	Bendiocarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Carbaryl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Carbofuran	ND	0.0067 mg/kg	
9/19/23	9/22/23	Methiocarb	ND	0.0067 mg/kg	
9/19/23	9/22/23	Methomyl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Oxamyl	ND	0.0067 mg/kg	
9/19/23	9/22/23	Propoxur	ND	0.0067 mg/kg	
9/19/23	9/22/23	Thiobencarb	ND	0.0067 mg/kg	

Surrogate Recovery: 68 %
Surrogate Recovery Range: 60-140
(TPP-d15 used as Surrogate)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Kara Greer, Project Manager

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Sherwood, OR 97140

BB&A Environmental
25195 SW Parkway Ave, Suite 207
Wilsonville, OR 97070

Report Number: P232113
Report Date: September 25, 2023
Client Project ID: PAP182MAG

Quality Assurance

Method Blank Data **Matrix:** soil

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
9/19/23	9/22/23	23I1906-BLK1	3-Hydroxycarbofuran	Not Detected	< 0.0067 mg/kg	
9/19/23	9/22/23	23I1906-BLK1	Aldicarb	Not Detected	< 0.0067 mg/kg	
9/19/23	9/22/23	23I1906-BLK1	Aldicarb Sulfone	Not Detected	< 0.0067 mg/kg	
9/19/23	9/22/23	23I1906-BLK1	Bendiocarb	Not Detected	< 0.0067 mg/kg	
9/19/23	9/22/23	23I1906-BLK1	Carbaryl	Not Detected	< 0.0067 mg/kg	
9/19/23	9/22/23	23I1906-BLK1	Carbofuran	Not Detected	< 0.0067 mg/kg	
9/19/23	9/22/23	23I1906-BLK1	Methiocarb	Not Detected	< 0.0067 mg/kg	
9/19/23	9/22/23	23I1906-BLK1	Methomyl	Not Detected	< 0.0067 mg/kg	
9/19/23	9/22/23	23I1906-BLK1	Oxamyl	Not Detected	< 0.0067 mg/kg	
9/19/23	9/22/23	23I1906-BLK1	Propoxur	Not Detected	< 0.0067 mg/kg	
9/19/23	9/22/23	23I1906-BLK1	Thiobencarb	Not Detected	< 0.0067 mg/kg	

Matrix Spike Data **Matrix:** soil

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
9/19/23	9/22/23	23I1906-MS1	3-Hydroxycarbofuran	94	60-140	
9/19/23	9/22/23	23I1906-MSD1	3-Hydroxycarbofuran	93	60-140	
9/19/23	9/22/23	23I1906-MS1	Aldicarb	91	48-127	
9/19/23	9/22/23	23I1906-MSD1	Aldicarb	91	48-127	
9/19/23	9/22/23	23I1906-MS1	Aldicarb Sulfone	86	60-140	
9/19/23	9/22/23	23I1906-MSD1	Aldicarb Sulfone	90	60-140	
9/19/23	9/22/23	23I1906-MS1	Carbaryl	97	20-123	
9/19/23	9/22/23	23I1906-MSD1	Carbaryl	100	20-123	
9/19/23	9/22/23	23I1906-MS1	Carbofuran	90	60-140	
9/19/23	9/22/23	23I1906-MSD1	Carbofuran	90	60-140	
9/19/23	9/22/23	23I1906-MS1	Methiocarb	94	60-140	
9/19/23	9/22/23	23I1906-MSD1	Methiocarb	96	60-140	
9/19/23	9/22/23	23I1906-MS1	Methomyl	85	60-140	
9/19/23	9/22/23	23I1906-MSD1	Methomyl	89	60-140	
9/19/23	9/22/23	23I1906-MS1	Oxamyl	87	60-140	
9/19/23	9/22/23	23I1906-MSD1	Oxamyl	90	60-140	
9/19/23	9/22/23	23I1906-MS1	Propoxur	95	60-140	
9/19/23	9/22/23	23I1906-MSD1	Propoxur	96	60-140	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Kara Greer, Project Manager

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PAL Project # P232113

CLIENT INFO

Company: BB&A ENVIRONMENTAL
Contact: Stephen Omo
Address: 25195 SW Parkway Ave, Suite 207
City: Wilsonville State: OR Zip: 97070
Telephone: 503-570-9484 ext 2 Mobile Phone: 503-572-0082
Email(s): smomo@bbaenv.com
Project #: PAP182MAG Purchase Order #:

Requested Analysis

PAL ID (Lab use only)	Client Sample ID	Sample Date	Sample Time	Sample Type	Container Type	No. of Containers	CARBAMATE Pesticides	Extract & Hold - 998				Comments
P232113-01	PAP182 - COMP 1	9/7/23	14:20	Soil	8oz	1	✓					
02	PAP182 - COMP 2	9/7/23	13:45	Soil	"	1	✓					
03	PAP182 - COMP 3	9/7/23	12:10	Soil	"	1	✓					
04	PAP182 - COMP 4	9/7/23	12:45	Soil	"	1	✓					
05	PAP182 - COMP 5	9/7/23	11:15	Soil	"	1	✓					
06	PAP182 - COMP 6	9/7/23	15:10	Soil	"	1	✓					
07	PAP182 - COMP GH 1-9	9/7/23	10:10	Soil	"	1	✓					
08	PAP182 - P1 - GW	9/7/23	15:45	WATER	1 L Amber	1		✓				
09	PAP182 - P2 - GW	9/7/23	15:00	WATER	"	1		✓				
10	PAP182 - P3 - GW	9/7/23	14:30	WATER	"	1		✓				

Requested Turnaround Time

☑ Standard
☐ Rush _____ please specify

		DATE	TIME			DATE	TIME
Relinquished by: SIGNATURE	Sam Q	9.8.23	11:01	Received by SIGNATURE		9/8/23	11:21
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Lab Comments:

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Requested Turnaround Time
- [x] Standard
- [ ] Rush ______ please specify

PAL ID (Lab use only)	Client Sample ID	Sample Date	Sample Time	Sample Type	Container Type	No. of Containers	Requested Analysis: CARBAMATE PESTICIDES	Extract and Hold				Comments
P232113-11	PAP182 - P4 - GW	9/7/23	13:00	WATER	1-L Amber	1		X				
-12	PAP182 - P5 - GW	9/7/23	11:45	WATER	"	1		X				
-13	PAP182 - P6 - GW	9/7/23	11:15	WATER	"	1		X				

QQQ MR

Relinquished by: SIGNATURE [signature] DATE 9.8.23 TIME 11:01 Received by: SIGNATURE [signature] DATE 9/8/23 TIME 11:01

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P232113-01	PAP182 - COMP 1	9/7/23	14:20	Soil	8oz	1	✓					
02	PAP182 - COMP 2	9/7/23	13:45	Soil	"	1	✓					
03	PAP182 - COMP 3	9/7/23	12:10	Soil	"	1	✓					
04	PAP182 - COMP 4	9/7/23	12:45	Soil	"	1	✓					
05	PAP182 - COMP 5	9/7/23	11:15	Soil	"	1	✓					
06	PAP182 - COMP 6	9/7/23	15:10	Soil	"	1	✓					
07	PAP182 - COMP GH 1-9	9/7/23	10:10	Soil	"	1	✓					
08	PAP182 - P1 - GW	9/7/23	15:45	WATER	1 L Amber	1		✓				
09	PAP182 - P2 - GW	9/7/23	15:00	WATER	"	1		✓				
10	PAP182 - P3 - GW	9/7/23	14:30	WATER	"	1		✓				

Requested Turnaround Time

☑ Standard
☐ Rush _____ please specify

		DATE	TIME			DATE	TIME
Relinquished by: SIGNATURE	Sam Q	9.8.23	11:01	Received by SIGNATURE		9/8/23	11:21
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-12	PAP182 - P5 - GW	9/7/23	11:45	WATER	"	1		X				
-13	PAP182 - P6 - GW	9/7/23	11:15	WATER	"	1		X				

QQQ MR

Relinquished by: SIGNATURE [signature] DATE 9.8.23 TIME 11:01 Received by SIGNATURE [signature] DATE 9/8/23 TIME 11:01

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PAL ID (Lab use only)	Client Sample ID	Sample Date	Sample Time	Sample Type	Container Type	No. of Containers	Requested Analysis					Comments
	PAP182 - P4 - GW	9/7/23										
	PAP182 - P5 - GW	9/7/23										
	PAP182 - P6 - GW	9/7/23										

	DATE	TIME		DATE	TIME
Relinquished by: _____ SIGNATURE	_____	_____	Received by _____ SIGNATURE	_____	_____
Relinquished by: _____ SIGNATURE	_____	_____	Received by _____ SIGNATURE	_____	_____

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