

WORKSHEET 1
Summary Score Sheet

SITE INFORMATION:

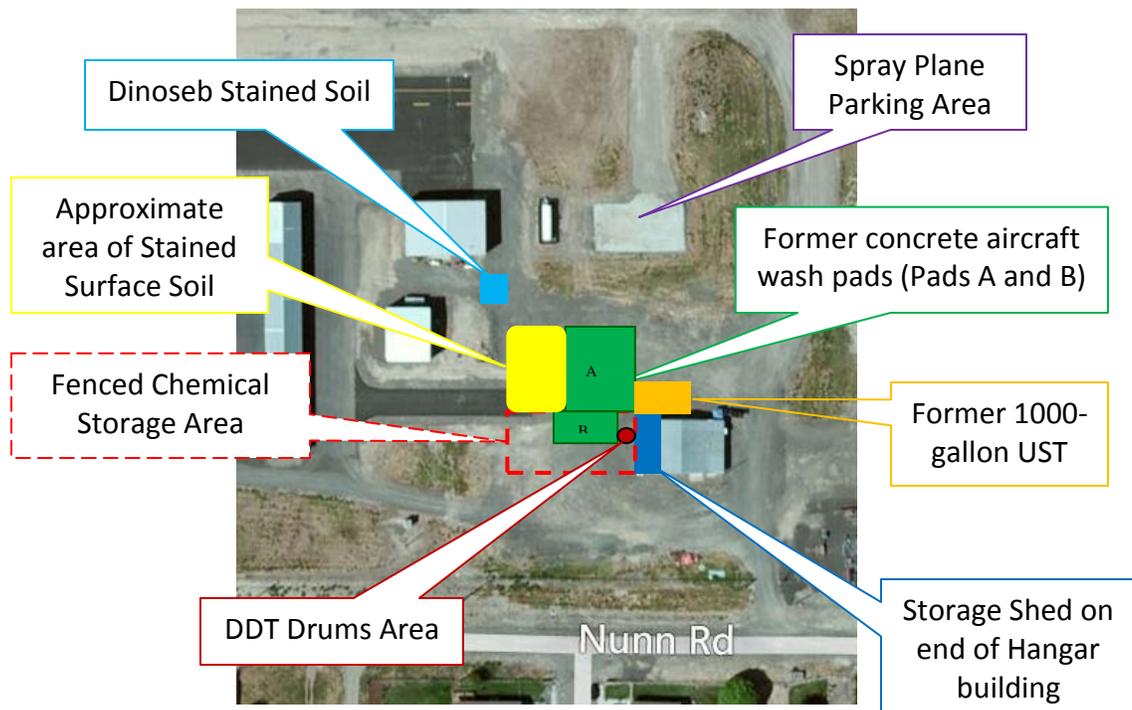
Name: **Prosser Airport Aircraft Applicators**
Address: **221 Nunn Road**
City: **Prosser** County: **Benton** State: **WA** Zip: **99350**
Section/Township/Range: **S2/T8N/R24E**
Latitude: **46.21168** Longitude: **-119.78507**
FS ID #: **7474148**

Site scored/ranked for the February 2013 update

SITE DESCRIPTION (management areas, substances of concern, and quantities):

The site consists of ~1.45-acre area within a larger parcel (No. 102842000011000) that makes up the Prosser Airport. The airport has been in operation since 1961. Aircraft Applicator, Inc., an aerial herbicide/pesticide application business, began leasing a portion of the airport property at this time. Their operations included storing, mixing, and loading pesticides onto aircraft. In the area they also refueled, maintained and washed aircraft equipment. Aircraft Applicator, Inc. ceased operations in 2006.

The main areas identified to be contaminated during sampling events are the former airplane concrete wash pads (Pad A and Pad B), stained surface soil area, former gas tank, storage shed and airplane parking area. Approximate size and locations of each area is shown on the aerial photo below.



In May 2006 five soil samples (SS-1 through SS-5) were collected at 2-4” below ground surface in the stained surface area. Samples were analyzed for organochlorine (OC) and organophosphorous (OP) pesticides. No OP pesticides, but OC pesticides, including Heptachlor Epoxide, 4, 4’-DDE, 4,4’-DDT, and Dieldrin, were detected in all five samples. According to the report, the levels exceeded MTCA Method B cleanup standards.

In August 2006, eleven additional soil samples (SS-6 through SS-16) were collected from 4-6” bgs around the perimeter of the stained surface area, where the spray plane had been parked, and inside the fenced storage area. The report states that sampling results detected DDT, DDE, Heptachlor Epoxide and Dieldrin above Method B cleanup levels.

Based on these two sampling events, it was determined that the primary area of contamination was the area of stained surface soil located north of the fenced Chemical Storage Area. Smaller areas of contamination were determined to be in the Spray Plane parking area and an area adjacent to concrete washpad B and storage shed.

Prior to excavating contaminated soils, more soil samples were collected at greater depths (6, 12, and 18 or 24”) in March 2007. This information was used to identify key areas that should be remediated. Soil excavating began on March 19, 2007 and resulted in 1,331 tons of contaminated soil. The excavations are identified by Environmental Compliance Associates as follows:

DDT EXCAVATIONS

- Pad A and Stained Surface Area – area dug down to 24-36” (greater depth on southern end of pit). Pit size measured 90’ x 60’.
- Spray Plane Parking Area – area dug down to 24”. Pit size measured 10’ x 30’.
- A DDT field kit was used to analyze 12 samples from the extent of the excavation. Field analysis did not detect DDT in these samples
- Six confirmational samples were collected and analyzed by a lab for OP and OC pesticides, chlorinated acid herbicides, carbamate pesticides, and petroleum. The report indicates none of the analytes were detected but a lack of information about sample numbers and locations makes it difficult to verify.

DDT DRUMS IN FENCED AREA

- The report indicates that “samples collected from the base of this excavation and sidewall indicated that the soils in the area remain above the MTCA cleanup level but below 100 ppm”. The lack of information in the reports regarding sample numbers and locations makes this difficult to confirm.

WASHPAD B

- This area was not excavated beyond 12-16” bgs, which, basically, consisted of removing the concrete pad. Yellow stained soil (consistent with Dinoseb) was seen in these soils.

DINOSEB STAINED SOIL

- An area 10’ x 15’ by one foot deep was excavated in this area. Soil samples were analyzed for herbicides and OC pesticides. The report states lab results did not detect Dinoseb but the lack of information about sampling numbers and locations makes this difficult to verify. The area was backfilled.

FORMER 1000-GALLON UST

- About 125 tons of soil was excavated resulting in an 8-foot deep pit with outside dimensions of 15' x 20'. Groundwater was encountered.
- Dinoseb was discovered in the sidewalls of this pit, so further excavating was suspended until Dinoseb could be removed and options for dewatering the pit could be evaluated.
- The excavation was backfilled to prevent the Dinoseb from contaminating groundwater, according to the report. It was backfilled with clean soil until the pit depth was ~6' bgs.

From February to October 2008, 8264 yd³ were excavated from the site. Before backfilling, ~114,450 pounds of RegenOx[®] were added to the excavation, which had been penetrated by the shallow groundwater table.

In June 2007 four groundwater monitoring wells (MW-1 through 4) were installed. A 25-foot gridded soil sampling plan was used across the site to evaluate soil conditions. In the area of the former Chemical Storage Area, a 15-foot grid was used. Three additional wells (MW-5 through 7) were installed in March 2009. MW-5 replaced poorly functioning MW-4.

Groundwater monitoring began in April 2009 and has not continued on a quarterly basis since then. Many pesticides were detected, but for the simplicity of this assessment, only analytes detected at some point between June 2007 and September 2012 at levels exceeding MTCA cleanup standards are reported below.

- MW-1: arsenic
- MW-2: arsenic
- MW-3: MCP*P, arsenic, lead
- MW-4: MCP*P, arsenic, lead
- MW-5: benzene, TPH-G, arsenic
- MW-6: arsenic
- MW-7: benzene, MCPA**, arsenic

*2-methyl-4-chlorophenoxy-acetic acid

**2(2-methyl)-4-chlorophenoxy-propionic acid

The most recent groundwater monitoring report occurred in September 2012 from all seven onsite wells (MW-1 through MW-7). Groundwater was measured at 2.65 to 3.76 feet below ground surface and found to flow to the southeast during this event. However, it generally flows to the south during the drier season and southeast during the wetter season.

Samples were collected and analyzed for gasoline, BTEX, arsenic, lead, organochlorine pesticides, and chlorinated acid herbicides. Of these parameters, the following were detected in groundwater samples: DDE, Endosulfan sulfate, Endosulfan II, total arsenic, dissolved arsenic and total lead. Arsenic was detected in all wells at levels ranging from 6.9-32ppb (total) and 7.0 to 32ppb (dissolved), respectively. The Method A cleanup standard for arsenic is 5 ppb.

In April 22, 2009, an Interim Action report was submitted to Ecology. It was updated in April 2010.

SPECIAL CONSIDERATIONS (include limitations in site file data or data which cannot be accommodated in the model, but which are important in evaluating the risk associated with the site, or any other factor(s) over-riding a decision of no further action for the site):

The site has undergone several remedial actions. There is documentation to support residual contamination below the ground surface (except where it may be directly below a building) so that air and surface water routes need not be scored.

The groundwater elevation and flow direction changes seasonally at this site but quarterly groundwater sampling has not occurred in the past few years. Therefore, even though TPH-G, benzene, and MCPP are not detected in the most recent groundwater sampling event, they are included in the SHA because they cannot reliably be considered absent in groundwater.

Population served by drinking water wells within a 2-mile radius was limited to wells on the north side of the Yakima River. This SHA excludes City of Prosser wells since the wells depth are greater than 600 feet.

ROUTE SCORES:

Surface Water/Human Health:	<u>n/a</u>	Surface Water/Environmental.:	<u>n/a</u>
Air/Human Health:	<u>n/a</u>	Air/Environmental:	<u>n/a</u>
Groundwater/Human Health:	<u>39</u>		

OVERALL RANK: 3

WORKSHEET 2
Route Documentation

1. **SURFACE WATER ROUTE** –*Not Scored*

2. **AIR ROUTE** –*Not Scored*

3. **GROUNDWATER ROUTE**

a. List those substances to be considered for scoring: Source: 1, 2

**Benzene, arsenic, lead, dieldrin, Dinoseb, pentachlorophenol,
MCPA, MCPP**

b. Explain basis for choice of substance(s) to be used in scoring:

**Benzene, arsenic, MCPP – these contaminants have been detected
in groundwater samples at levels which MTCA cleanup standards.**

c. List those management units to be considered for scoring: Source: 1, 2

Subsurface soils and groundwater

d. Explain basis for choice of unit to be used in scoring:

Groundwater samples confirm contamination of these substances

WORKSHEET 6
Groundwater Route

1.0 SUBSTANCE CHARACTERISTICS

1.2 Human Toxicity										
Substance	Drinking Water Standard (µg/L)	Value	Acute Toxicity (mg/ kg-bw)	Value	Chronic Toxicity (mg/kg/day)	Value	Carcinogenicity		Value	
							WOE	PF*		
1	TPH-gas (benzene)	5	8	3306	3	--	ND	1.0	0.029	5
2	Arsenic	10	8	763	5	0.001	5	1.0	50	9
3	MCPP	--	ND	369	5	0.001	5	--	--	--

* Potency Factor

Source: 1, 2, 4

Highest Value: 8

(Max = 10)

Plus 2 Bonus Points? 2

Final Toxicity Value: 10

(Max = 12)

1.2 Mobility (use numbers to refer to above listed substances)	
Cations/Anions [Coefficient of Aqueous Migration (K)]	OR Solubility (mg/L)
1=	1= Benzene = 3
2= Arsenic = 3	2=
3=	3= MCPP = n/a

Source: 5

Value: 3

(Max = 3)

1.3 Substance Quantity:	
<p>Explain basis: Due to poor reporting of sampling locations and results, the quantity of residual soil contamination that may continues to impact groundwater has been estimated to be between 10 and 100 cubic yards.</p>	<p>Source: <u>1, 2</u> Value: 2 (Max=10)</p>

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	Containment (explain basis): Contaminated area is not capped; it is a gravel cover.	3	10 (Max = 10)
2.2	Net precipitation: 0.9"	6	1 (Max = 5)

2.3	Subsurface hydraulic conductivity: sands, gravels, cobbles and boulders within a silt matrix; slightly fractured basalt bedrock; White Shield estimates a hydraulic conductivity of 5×10^{-5} cm/s	1	3 (Max = 4)
2.4	Vertical depth to groundwater: 3-7' bgs, and confirmed groundwater contamination	2	8 (Max = 8)

3.0 TARGETS

		Source	Value
3.1	Groundwater usage: Public supply, but alternate sources available with minimum hookup	8	4 (Max = 10)
3.2	Distance to nearest drinking water well: <u>2500</u> feet	9	3 (Max = 5)
3.3	Population served within 2 miles: $\sqrt{\text{pop.}} = \sqrt{127} = 11.3$ (Class A and B water systems)	8	11 (Max = 100)
3.4	Area irrigated by (groundwater) wells within 2 miles: $(0.75) * \sqrt{\# \text{ acres}} = 0.75 * \sqrt{107} = 7.8$	7	8 (Max = 50)

4.0 RELEASE

		Source	Value
	Explain basis for scoring a release to groundwater: Groundwater sampling confirms it has detectable levels of contaminants at levels which exceed MTCA cleanup standards.	2	5 (Max = 5)

SOURCES USED IN SCORING

1. Updated Final Interim Action Report, *Environmental Compliance Associates, LLC*, April 29, 2010
2. Groundwater Monitoring Results, *Shannon & Wilson, Inc.*, November 2012
3. Site visits by Laura Klasner, 2010, and Krystal Rodriguez, February 5, 2013
4. Washington State Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992
5. Washington State Department of Ecology, WARM Scoring Manual, April 1992.
6. Washington Climate – Net Rainfall Table
7. GWIS application using aerial photography to determine area irrigated by groundwater wells within two miles of site
8. Washington State Department of Health, Office of Drinking Water Sentry website printout for public water supplies
9. Ecology Well Log database