



State of Oregon
Department of
Environmental
Quality

Environmental Cleanup Site Information

Site Summary Report

for site #4409 - ESCO Landfill - Sauvie Island

General Information

Site ID: 4409

Investigative Status: Suspect

Name: ESCO Landfill - Sauvie Island

Further Action Priority: High

Aliases/Other Site Names:

Address 14444 NW Gillihan Loop Rd, Burlington, 97231

Cerclis #:

NPL Site: No

Region: Northwest Region

Orphan Site: No

Study Area: No

County: Multnomah

Brownfield:

Remedial Action Funding:

Site Location: The ESCO landfill is located on the southwest perimeter of Sauvie Island, just east of NW Gillihan Loop Road, along an Alder Creek Lumber Company access road. Multnomah Channel lies less than 200 feet southwest of the landfill. Alder Creek Lumber Company (ECSI #2446) is located immediately southeast of the landfill. A sizeable emergent palustrine wetlands area is located immediately northeast of the landfill; a smaller wetlands area is located on the landfill site itself. The landfill occupies Tax Lot 400 of T2N/R1W-S28D (16.0 acres), part of Tax Lot 400 of T2N/R1W-S28 (about 4.5 acres), both owned by ESCO, Corp., as well as small portions (totalling about 8.6 acres) of the western ends of Tax Lots 700 and 800 of T2N/R1W-S27, owned by Alder Creek Lumber Co., Inc.

Property

Township/Range/Section: 2.00N, 1.00W, 28

Tax Lots 400 (S28D); part 400 (S28)

Latitude: 45deg. 37' 34.00"(45.6261)

Site Size: 29.1 acres (approx.)

Longitude: -122deg. 48' 26.60"(-122.8074)

Study Areas

Study Area ID Study Area

Site Association to Study Area

2339 V.A.- Designated National Estuaries

Included within the Study Area but not yet suspected

Facilities/Operation**Name:** ESCO Sauvie Island Landfill**Comment:** Disposal site for wastes from two Portland foundries. ESCO estimates remaining usable landfill life to at least 2045**Years Of Operation:** June 15, 1977 - present**Operating Status:** Active**SIC Codes:****Permits**

Number	Type	Issued By	Comments
1091	Solid Waste Disposal Site	Oregon DEQ	Originally issued 6/23/87.

General Site Description: An approximate 29 acre, active industrial landfill located on the southwest end of Sauvie Island, between Multnomah Channel on the southwest, a palustrine wetlands area on the northeast, and an Alder Creek Lumber Company mill to the southeast. ESCO has used the landfill since 1977 for disposal of waste sand, baghouse dust, and slag from its local steel foundries, although DEQ did not issue a Solid Waste Disposal Site Permit for the site until 1987. Approximately 185,500 cubic yards of material was buried at the site between 1977 and 1994, at fill thicknesses ranging from 2- to 7 feet, averaging between 4- and 5 feet. Shallow groundwater at the site is contaminated with elevated concentrations a broad variety of metals, including uranium, as well as other contaminants such as cyanide, nitrate, bis(2-ethylhexyl)phthalate, toluene, c-1,2-dichloroethylene, and gross beta particles. Five of the eight monitoring wells that have been used at the site are located along the landfill's southwest perimeter, within 200- to 250 feet of Multnomah Channel.

The site's groundwater likely discharges to Multnomah Channel, although it may also represent a potential threat to nearby wetlands and public and domestic drinking water wells.

Site History: The site has been an active landfill for exclusive disposal of ESCO's steel foundry wastes since 1977. DEQ's Solid Waste Program referred the site to Site Assessment after elevated concentrations of uranium and gross alpha and beta particle emitters were detected in site groundwater.

Contamination:

Shallow groundwater at the site has been contaminated with aluminum, barium, boron, cadmium, chromium, hexavalent chromium, copper, iron, lead, manganese, mercury, molybdenum, selenium, silver, uranium, vanadium, alkalinity, cyanide, and bis(2-ethylhexyl)phthalate at concentrations that could represent a threat to freshwater aquatic life in Multnomah Channel or nearby wetlands. Low groundwater pH could also represent a potential threat to aquatic life in Multnomah Channel.

Concentrations of aluminum, antimony, arsenic, cadmium, iron, lead, manganese, molybdenum, uranium, vanadium, cyanide, bis(2-ethylhexyl)phthalate, and gross alpha particles detected in shallow groundwater at the site could represent a potential health threat to local well water consumers.

Gross beta radiation in groundwater up to 30.3 pCi/L (MW-3; 10/4/04) and gross alpha radiation up to 70.2 pCi/L (MW-3; 11/17/04). Groundwater alkalinity up to 880 ppm (MW-3; 10/4/04) and hardness of up to 748 ppm (MW-3; 10/4/04). Groundwater pH as low as 5.4 (MW-2A; 4/8/85) and conductivity as high as 1540 uMhos/cm (MW-3; 10/4/04). Groundwater Chemical Oxygen Demand (COD) as high as 83 ppm (MW-4; 2/8/94).

The Drinking Water Maximum Contaminant Level (MCL) for gross alpha radiation, excluding that contributed by uranium and radium, is 15 pCi/L. Most or all of the alpha particle emissions at the ESCO landfill are believed to be attributable to uranium. The Drinking Water screening level for gross beta radiation is 50 pCi/L, or 15 pCi/L for vulnerable drinking water sources. The National Recommended Criterion Continuous Concentration (CCC) for freshwater aquatic life for alkalinity is 20 ppm. The CCC for freshwater aquatic life for lower pH is 6.5.

The background alkalinity concentration in deeper groundwater on the southern end of Sauvie Island may be no higher than 100 ppm; background hardness concentration may be no greater than 150 ppm (Getz and Tabor domestic wells, September 1985, DEQ). The alkalinity of Columbia River surface water upstream from Sauvie Island is typically less than 90 ppm; hardness is typically less than 80 ppm. The alkalinity of Willamette River surface water is typically less than 50-ppm; hardness is typically less than 35-ppm.

In 1982, baghouse dust samples from one of the company's arc furnaces (Plant 3, Furnace 5) were found to contain elevated concentrations of hexavalent chromium (1430 ppm), lead (1610 ppm), and arsenic (101 ppm), along with lesser concentrations of cadmium (16 ppm) and mercury (0.11 ppm). Dust from this furnace was normally pelletized and remelted in other furnaces, although excess dust was deposited in the Sauvie Island landfill. Cyanide was also detected (0.34- to 0.82 ppm) in some of the company's baghouse dust sources.

In 1980, zirconium sand comprised 16-20% of the sand that ESCO was disposing. Other sands used by ESCO included silica, olivine, and chromite. Some of the sands contained 5-7% phenol resin. At the time, ESCO estimated that zirconium sand comprised 10.5% of the material in their landfill. Oregon Health Division analyzed the zircon and found that it contained uranium, thorium, and their decay products, including radium-226, in concentrations of about 100 pCi/g.

Windblown dust might also be a potential concern at the site.

Manner of Release: Wastes were buried in an unlined landfill along Multnomah Channel, in an area having shallow groundwater and nearby wetlands.

Substances

Substance Name: Aluminum

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	37,000 ppb T. Al at well 6 (10/10/95). 21,300 ppb T. Al at well 4 (10/4/04).	Laboratory Data	10/10/95	
Date Released:	Unknown			
Quantity Released:	Unknown			
General Comment:	The EPA Region IX tap water PRG for aluminum is 36,000 ppb. The freshwater CMC (acute aquatic toxicity) for aluminum is 750 ppb. DEQ's Level II Ecological Risk Assessment Screening Value for aluminum affects to freshwater aquatic life is 87 ppb.			
Media Comments:				
Release Comments:				
Source of Information:				

Substance Name: Ammonia

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	These concentrations are ammonium/ ammonical nitrogen - not ammonia: 0.77 ppm in groundwater at well MW-6. 0.47 ppm at well 6 (10/11/99). 0.41 ppm at well 5 (10/10/95). 0.33 ppm at well 4 (10/10/95).	Laboratory Data	10/10/95	
Date Released:	Unknown			
Quantity Released:	Unknown			
General Comment:	DEQ's Level II Ecological Risk Assessment Screening Value for freshwater aquatic life for ammonia (not ammonium/ ammoniacle nitrogen) is 0.017 ppm. Ammonia concentration is pH and temperature dependent.			
Media Comments:				
Release Comments:				
Source of Information:				

Substance Name: Antimony

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	9.64 ppb Dis. Sb at well 4 (9/3/93). 8.64 ppb Dis. Sb at well 2A (9/3/93). 7.71 ppb Dis. Sb at well 5 (9/3/93). 5.09 ppb Dis. Sb at well 2A (11/30/93). 0.73 ppb Dis. Sb at well 3 (10/4/04).	Laboratory Data	9/3/93	

Date Released: Unknown
Quantity Released: Unknown
General Comment: The Drinking Water MCL for antimony is 6 ppb; the Tap Water PRG is 15 ppb.
Media Comments:
Release Comments:
Source of Information:

Substance Name: Arsenic

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	30 ppb Dis. As at well 4 (10/25/01). 27 ppb Tot. As at well MW-4 (10/25/01). 7.6 ppb at well 2B (4/10/84). 7 ppb Tot. As at well 5 (9/3/93). 7 ppb at well 2B (12/18/86). 6 ppb Tot. As at well 6 (10/10/95).	Laboratory Data	10/25/01	

Date Released: Unknown
Quantity Released: Unknown
General Comment: The Drinking Water Maximum Contaminant Level (MCL) for arsenic is 10 ppb. The EPA Region IX Preliminary Remediation Goal (PRG) for arsenic in tap water is 0.045 ppb.
Media Comments:
Release Comments:
Source of Information:

Substance Name: Barium

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	380 ppb at well MW-6 (10/10/95). 329 ppb at well MW-4 (9/3/93). 320 ppb Tot. Ba at well 5 (9/3/93). 272 ppb Tot. Ba at well 2A (9/3/93). 247 ppb D. Ba at well 3 (10/4/04). 240 ppb T. Ba at well 4 (10/4/04). 239 ppb Tot. Ba at well 3 (10/4/04).	Laboratory Data	10/10/95	

Date Released: Unknown
Quantity Released: Unknown
General Comment: DEQ's Eco Risk Assessment Screening Value for freshwater aquatic life for barium is 4 ppb.
Media Comments:
Release Comments:
Source of Information:

Substance Name: Beryllium

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	0.96 ppb Tot. Be at well 4 (9/3/93). 0.71 ppb Tot. Be at well 2A (9/3/93). 0.65 ppb Tot. Be at well 4 (10/25/01) 0.32 ppb Tot. Be at well 5 (9/3/93).	Laboratory Data	9/3/93	
Date Released:	Unknown			
Quantity Released:	Unknown			
General Comment:				
Media Comments:				
Release Comments:				
Source of Information:				

Substance Name: Bis(2-ethylhexyl)phthalate

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	130 ppb at well 2A (9/3/93). 60 ppb at well 4 (9/3/93). 49 ppb at well 5 (9/3/93). 12 ppb at well 3 (10/4/04). 1 ppb at well 4 (10/11/99).	Laboratory Data	9/7/93	
Date Released:	Unknown			
Quantity Released:	Unknown			
General Comment:	The Eco Risk Assessment Screening Value for freshwater aquatic life for bis(2-ethylhexyl)phthalate is 3 ppb. Its Tap Water PRG is 4.8 ppb; the Drinking Water MCL is 6 ppb.			
	Also groundwater detections of bis(2-ethylhexyl)adipate at wells 4, 5, and 6.			
Media Comments:				
Release Comments:				
Source of Information:				

Substance Name: Boron

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	210 ppb Dis. B at well 4 (10/10/95). 175 ppb Dis. B at well 4 (10/4/04). 170 ppb Tot. B at well 4 (10/4/04). 159 ppb Dis. B at well 3 (10/4/04). 147 ppb Tot. B at well 3 (10/4/04).	Laboratory Data	10/10/95	

Date Released: Unknown
Quantity Released: Unknown
General Comment: The Eco Risk Assessment Screening Value for freshwater aquatic life for boron is 1.6 ppb.
Media Comments:
Release Comments:
Source of Information:

Substance Name: Cadmium

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	34 ppb D. Cd at well 2A (9/29/83) 12 ppb in well 1-B (9/29/83) 10 ppb in well 1-B (7/17/86) 7.4 ppb in well 2-A (7/6/84) 4.7 ppb at well 2-B (7/6/84) 3.4 ppb T. Cd at well 4 (4/4/95) 3.0 ppb T. Cd at well 4 (4/03) 2.5 ppb T. Cd at well 6 (9/26/94)	Laboratory Data	9/29/83	

Date Released: Unknown
Quantity Released: Unknown
General Comment: The Eco Risk Assessment Screening Value for freshwater aquatic life for cadmium is 2.2 ppb. The freshwater CMC is 2.0 ppb. The freshwater CCC is 0.25 ppb. The tap water PRG is 18 ppb; the Drinking Water MCL is 5 ppb.
Media Comments:
Release Comments:
Source of Information:

Substance Name: Chloride (as ion)

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	61 ppm at well 3 (10/4/04). 41 ppm at well 3 (10/11/99). 33 ppm at well 4 (11/30/93).	Laboratory Data	10/4/04	

Date Released: Unknown
Quantity Released: Unknown
General Comment:
Media Comments:
Release Comments:
Source of Information:

Substance Name: Chromium

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	37 ppb Tot. Cr at well 2A (9/3/93). 37 ppb Tot. Cr at well 6 (9/3/93). 33 ppb Tot. Cr at well 4 (9/3/93). 30 ppb Tot. Cr at well 6 (10/10/95). 19 ppb T. Cr at well 4 (10/4/04). 16 ppb at well 1-B (10/14/90).	Laboratory Data	9/3/93	
Date Released:	Unknown			
Quantity Released:	Unknown			
General Comment:	The Eco Risk Assessment Screening Value for freshwater aquatic life for chromium is 11 ppb. The freshwater CMC is 16 ppb.			
Media Comments:				
Release Comments:				
Source of Information:				

Substance Name: Chromium, hexavalent

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	30 ppb at well 2-A (12/1/88). 4 ppb at well MW-2A (9/29/83). 3 ppb in wells 1-B and 2-B (9/29/83).	Laboratory Data	12/1/88	
Date Released:	Unknown			
Quantity Released:	Unknown			
General Comment:	The DEQ Ecological Risk Assessment freshwater aquatic life screening value for Cr+6 is 11 ppb.			
Media Comments:				
Release Comments:				
Source of Information:				

Substance Name: Cobalt

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	17.7 ppb T. Co at well 5 (9/3/93). 16.2 ppb D. Co at well 5 (9/3/93). 16 ppb T. Co at well 6 (10/10/95). 15.7 ppb T. Co at well 4 (9/3/93). 11 ppb T. Co at well 4 (10/4/04). 9.36 ppb T. Co at well 2A (9/3/93). 9.42 ppb D. Co at well 3 (10/4/04).	Laboratory Data	9/3/93	

Date Released: Unknown
Quantity Released: Unknown
General Comment:
Media Comments:
Release Comments:
Source of Information:

Substance Name: Copper

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	64 ppb T. Cu at well 2A (9/3/93). 64 ppb T. Cu at well 6 (9/3/93). 45 ppb T. Cu at well 4 (9/3/93). 40 ppb T. Cu at well 2A (12/1/93). 23 ppb T. Cu at well 4 (10/4/04). 17 ppb T. Cu at well 5 (9/3/93).	Laboratory Data	9/3/93	

Date Released: Unknown
Quantity Released: Unknown

General Comment: The Eco Risk Assessment Screening Value for freshwater aquatic life for copper is 9 ppb. The freshwater CMC (acute toxicity) is 13 ppb.

Media Comments:

Release Comments:

Source of Information:

Substance Name: Cyanide (as ion)

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	0.067 ppm at well MW-1A (12/18/86). 0.030 ppm in well 2-A (11/1/84). 0.012 ppm in well 1-B (12/18/86). 0.006 ppm at well 2B (12/18/86).	Laboratory Data	12/18/86	

Date Released: Unknown
Quantity Released: Unknown

General Comment: The Eco Risk Assessment Screening Value for freshwater aquatic life for cyanide is 0.0052 ppm. The freshwater CMC (acute toxicity) is 0.022. The tap water PRG for hydrogen cyanide is 0.0062 ppm.

Media Comments:

Release Comments:

Source of Information:

Substance Name: Dichloroethylene,1,2-cis-

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	1.1 ppb at well 2A (11/30/93). 1.2 ppb at well 6 (12/29/94). 0.9 ppb at well 6 (10/10/95). 0.7 ppb at well 2A (9/3/93). 0.7 ppb at well 6 (10/11/99).	Laboratory Data	11/30/93	
Date Released: Unknown				
Quantity Released: Unknown				
General Comment:				
Media Comments:				
Release Comments:				
Source of Information:				

Substance Name: Iron

Medium	Substance Data	Evidence	Date	Sample Depth
Surface Water	1,700 ppb in Multnomah Channel surface water (site SG-1, 2/5/87). 900 ppb at SG-1 on 12/16/86. 810 ppb at SG-1 on 10/15/85.	Laboratory Data	2/5/87	
Groundwater	91200 ppb at well 1A (4/10/84) 58300 ppb at well 5 (9/3/93) 55000 ppb T. Fe at well 6 (10/10/95) 51700 ppb at 2A (9/3/93) 49900 ppb at well 2A (11/30/93) 41100 ppb at well 1A (12/16/86) 37710 ppb at well 1B (9/29/83) 39700 ppb T.at well 4 (9/3/93)	Laboratory Data	4/10/84	
Date Released: Unknown				
Quantity Released: Unknown				
General Comment: The Eco Risk Assessment Screening Value for freshwater aquatic life for iron is 1,000 ppb. The tap water PRG for iron is 11,000 ppb.				
Media Comments:				
Release Comments:				
Source of Information:				

Substance Name: Lead

Medium	Substance Data	Evidence	Date	Sample Depth
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Groundwater	20 ppb at well 1A (11/15/90). 18 ppb in well 1B (1/4/84). 17 ppb Tot. Pb at well 6 (10/10/95). 14.8 ppb Tot. Pb at well 2A (9/3/93). 13.9 ppb Tot. Pb at well 4 (9/3/93).	Laboratory Data	11/15/90
Surface Water	61 ppb in Multnomah Channel surface water (site SG-1)	Laboratory Data	1/4/84
Date Released:	Unknown		
Quantity Released:	Unknown		
General Comment:	The Eco Risk Assessment Screening Value for freshwater aquatic life for lead is 2.5 ppb. The Drinking Water MCL for lead is 15 ppb. The freshwater CMC (acute toxicity) for lead is 65 ppb.		
Media Comments:			
Release Comments:			
Source of Information:			

Substance Name: Manganese

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	19500 ppb Dis. Mn at well 5 (4/17/01). 17300 ppb T. Mn at well 5 (9/3/93). 14700 ppb Dis. Mn at well 5 (9/3/93). 11900 ppb Dis. Mn at well 5 (11/30/93). 8820 ppb Dis. Mn at well 4 (4/17/01). 4390 ppb Dis. Mn at well 3 (10/4/04).	Laboratory Data	4/17/01	
Date Released:	Unknown			
Quantity Released:	Unknown			
General Comment:	The Eco Risk Assessment Screening Value for freshwater aquatic life for manganese is 120 ppb. The tap water PRG for manganese is 880 ppb.			
Media Comments:				
Release Comments:				
Source of Information:				

Substance Name: Mercury

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	0.9 ppb at well MW-1B (10/29/87). 0.2 ppb at well 2A (9/3/93).	Laboratory Data	10/29/87	

Date Released: Unknown
Quantity Released: Unknown
General Comment: The Eco Risk Assessment Screening Value for freshwater aquatic life for mercury is 0.77 ppb. The freshwater CMC is 1.4 ppb. The Drinking Water MCL is 2 ppb. The tap water PRG is 3.6 ppb.
Media Comments:
Release Comments:
Source of Information:

Substance Name: Molybdenum

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	750 ppb D. Mo at well 4 (10/10/95). 720 ppb T. Mo at well 4 (10/10/95). 628 ppb D. Mo at well 4 (10/4/04). 624 ppb T. Mo at well 4 (10/4/04).	Laboratory Data	10/10/95	

Date Released: Unknown
Quantity Released: Unknown
General Comment: The Eco Risk Assessment Screening Value for freshwater aquatic life for molybdenum is 370 ppb. The tap water PRG for molybdenum is 180 ppb.
Media Comments:
Release Comments:
Source of Information:

Substance Name: Nickel

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	45.5 ppb at well 6 (10/4/04). 41 ppb T. Ni at well 4 (9/3/93). 32.1 ppb T. Ni at well 6 (10/4/04). 32 ppb T. Ni at well 2A (9/3/93). 20 ppb T. Ni at well 5 (9/3/93). 18.9 ppb T. Ni at well 5 (10/11/99). 18 ppb D. Ni at well 3 (10/4/04).	Laboratory Data	10/4/04	

Date Released: Unknown
Quantity Released: Unknown
General Comment: The Eco Risk Assessment Screening Value for freshwater aquatic life for nickel is 52 ppb.
Media Comments:
Release Comments:
Source of Information:

Substance Name: Nitrate nitrogen

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	5.1 ppm in groundwater at well MW-3 (10/10/95). 4.4 ppm in groundwater at well MW-5 (5/28/93).	Laboratory Data	10/10/95	
Date Released: unknown				
Quantity Released: Unknown				
General Comment: The Drinking Water MCL and tap water PRG for nitrates is 10 ppm.				
Media Comments:				
Release Comments:				
Source of Information:				

Substance Name: Potassium

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	3070 ppb at well 4 (10/4/04). 2900 ppb at well 5 (11/30/93). 2500 ppb at well 5 (2/8/94). 2180 ppb at well 3 (10/4/04). 1480 ppb at well 4 (10/11/99). 1370 ppb at well 3 (10/11/99).	Laboratory Data	11/30/93	
Date Released: Unknown				
Quantity Released: Unknown				
General Comment:				
Media Comments:				
Release Comments:				
Source of Information:				

Substance Name: Selenium

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	13.8 ppb Tot. Se at well 6 (10/8/03). 3.8 ppb Dis. Se at well MW-5 (9/3/93). 3.0 ppb T. Se at well 5 (9/3/93). 2.85 ppb Tot. e at well 5 (9/3/93). 2.4 ppb Dis. Se at well 4 (9/3/93).	Laboratory Data	9/3/93	

Date Released: Unknown
Quantity Released: Unknown
General Comment: The Eco Risk Assessment Screening Value for freshwater aquatic life for selenium is 5 ppb.
Media Comments:
Release Comments:
Source of Information:

Substance Name: Silver

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	1.4 ppb T. Ag at well 5 (10/11/99). 1.23 ppb Dis. Ag at well 5 (10/11/99). 1.22 ppb T. Ag at well 4 (10/11/99).	Laboratory Data	10/11/99	

Date Released: Unknown
Quantity Released: Unknown
General Comment: The Eco Risk Assessment Screening Value for freshwater aquatic life for silver is 0.12 ppb. The freshwater CMC for silver is 3.4 ppb.
Media Comments:
Release Comments:
Source of Information:

Substance Name: Sodium

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	158 ppm at well 4 (11/30/93). 154 ppm at well 4 (5/28/93). 148 ppm at well 4 (2/8/94). 112 ppm at well 3 (10/4/04). 63.7 ppm at well 5 (5/28/93). 23.4 ppm at well 6 (10/11/99).	Laboratory Data	11/30/93	

Date Released: Unknown
Quantity Released: Unknown
General Comment:
Media Comments:
Release Comments:
Source of Information:

Substance Name: Sulfate (as ion)

Medium	Substance Data	Evidence	Date	Sample Depth
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Groundwater 45 ppm at well 5 (5/28/93). Laboratory Data 5/28/93
18 ppm at well 3 (10/10/95).
17.5 ppm at well 3 (10/11/99).
15 ppm at well 4 (9/3/93).
14 ppm at well 4 (10/10/95).
11 ppm at well 6 (12/29/94).
9.7 ppm at well 2A (5/28/93).

Date Released: Unknown

Quantity Released: Unknown

General Comment:

Media Comments:

Release Comments:

Source of Information:

Substance Name: Thallium

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	0.21 ppb Tot. Tl at well MW-4 (9/3/93)	Laboratory Data	9/3/93	
	0.13 ppb Tot. Tl at well MW-4 (10/4/04)			
	0.12 ppb Tot. Tl at well MW-2A (9/3/93)			
	0.08 ppb Tot. Tl at well MW-6 (9/3/93)			
	0.06 ppb Tot. Tl at well MW-5 (9/3/93)			
	0.05 ppb Dis. Tl at well MW-5 (9/3/93)			

Date Released: Unknown

Quantity Released: Unknown

General Comment: The tap water PRG for thallium is 2.4 ppb; the MCL is 2 ppb.

Media Comments:

Release Comments:

Source of Information:

Substance Name: Toluene

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	4.4 ppb in groundwater at well MW-2A.	Laboratory Data	9/3/93	

Date Released: Unknown
Quantity Released: Unknown
General Comment: The Eco Risk Assessment Screening Value for freshwater aquatic life for toluene is 9.8 ppb.
Media Comments:
Release Comments:
Source of Information:

Substance Name: Uranium

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	105 ppb Dis. U at well 3 (10/4/04). 69.9 ppb Total U at well 3 (10/4/04). 13.3 ppb Dis. U at well 5 (5/11/05). 8.31 ppb T. U at well 5 (10/4/04). 6.5 ppb T. U at well 4 (10/4/04).	Laboratory Data	10/4/04	

Date Released: Unknown

Quantity Released: Unknown

General Comment: The tap water PRG for uranium is 7.3 ppb; the MCL is 30 ppb. The Eco Risk Assessment Screening value for freshwater aquatic life is 2.6 ppb; for mammalian exposures to freshwater, it is 12 ppb; for avian exposures to freshwater, it is 116 ppb.

Media Comments: 70.2 pCi/l gross alpha at well 3 (11/04); 60.9 at well 3 (10/05); 21.1 at well 3 (4/05); 17.1 at well 5 (5/05).

30.3 pCi/l gross beta at well 3 (10/04); 29.2 at well 3 (4/98);
21.2 at well 3 (4/00); 22.1 at well 5 (10/99); 17.8 at well 5 (4/00).

Release Comments:

Source of Information: The drinking water MCL for gross alpha particles is 15 pCi/L.

The drinking water screening value for gross beta particles (corrected for K40) is 50 pCi/L, or 15 pCi/L for vulnerable drinking water systems.

Substance Name: Vanadium

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	147 ppb at well 2A (9/3/93). 147 ppb Tot. V at well 6 (9/3/93). 110 ppb Tot. V at well 6 (10/10/95). 83 ppb Tot. V at well 4 (9/3/93). 52 ppb Tot. V at well 4 (10/4/04). 41 ppb Tot. V at well 5 (9/3/93).	Laboratory Data	9/3/93	

Date Released: Unknown
Quantity Released: Unknown
General Comment: The Eco Risk Assessment Screening Value for freshwater aquatic life for vanadium is 20 ppb. The tap water PRG for vanadium is 36 ppb.
Media Comments:
Release Comments:
Source of Information:

Substance Name: Zinc

Medium	Substance Data	Evidence	Date	Sample Depth
Groundwater	114 ppb T. Zn at well 2A (12/1/93). 110 ppb T. Zn at well 2A (9/3/93). 110 ppb T. Zn at well 6 (10/10/95). 94 ppb T. Zn at well 4 (9/3/93). 51.8 ppb T. Zn at well 4 (10/4/04). 39 ppb T. Zn at well 5 (9/3/93)	Laboratory Data	12/1/93	

Date Released: Unknown
Quantity Released: Unknown
General Comment: The Eco Risk Assessment Screening Value for freshwater aquatic life for zinc is 120 ppb. The freshwater CMC for zinc is also 120 ppb.
Media Comments:
Release Comments:
Source of Information:

Hazardous Substance/Waste Types: Shallow groundwater at the site has been contaminated with a broad variety of metals (Ag, Al, As, B, Ba, Be, Cd, Co, Cr, Cr+6, Cu, Fe, Hg, Mn, Mo, Na, Ni, Pb, Sb, Se, U, V, and Zn) as well as alkalinity, chloride, nitrate, cyanide, c-1,2-dichloroethylene, toluene, bis(2-ethylhexyl)phthalate, and gross beta particle emitters. Low groundwater pH readings have also been recorded at the site.
Media Contamination: groundwater

Pathways & Other Hazards:

There are approximately 20 rural Sauvie Island residences within about 0.5 mile of the landfill. The nearest permanent residences on Sauvie Island are located about 475 feet to the north-northwest, 950 feet to the east, 1,100- to 1,500 feet to the north-northeast, and 2,300 feet to the northeast. All or most of the Sauvie Island residences should have domestic water supply wells. The City of Portland and Tualatin Valley Water District have Water Rights that allow distribution of a municipal water supply to Section 28 on Sauvie Island (north and northwest of the landfill) although there is currently no water supply infrastructure on the island. Burlington Water District provides a municipal water supply to homes on the mainland side of Multnomah Channel, although the district has little or no capacity to expand water use.

A palustrine wetland occupies much of a 120 acre tract immediately northeast of the landfill.

Houseboat and boat moorages and marinas line the Multnomah Channel bank opposite, and within about 500 feet of, the landfill, forming a continuous string that extends as much as 0.3 mile upstream to 0.6 mile downstream from the landfill. Approximately 200 of these houseboats and sailboats are used as permanent residences.

Most of the west side of Multnomah Channel, which includes Burlington Bottom Wetlands, is open space, fish and wildlife habitat, natural areas, water areas, wetlands, and groundwater resources of significant value.

Health Threats:

pH and concentrations of aluminum, barium, boron, cadmium, chromium, hexavalent chromium, copper, iron, lead, manganese, mercury, molybdenum, selenium, silver, uranium, vanadium, bis(2-ethylhexyl)phthalate, cyanide, and alkalinity detected in the site's shallow groundwater could represent a potential ecological threat to freshwater aquatic life in Multnomah Channel or nearby wetlands.

Concentrations of aluminum, antimony, arsenic, cadmium, iron, lead, manganese, molybdenum, uranium, vanadium, bis(2-ethylhexyl)phthalate, cyanide, and gross beta particle emitters detected in the site's shallow groundwater could represent a potential human health threat to local well water consumers.

Investigative, Remedial, and Administrative Actions

Action	Start Date	Completion Date	Responsible Staff	Agency	Region	Lead Program
Site added to database	5/10/05	5/10/05	Janelle Waggy	DEQ		
Comment:						
SITE PRIORITY EVALUATION FOR FURTHER ACTION	5/10/05	5/10/05	Stephen Fortuna	DEQ	NWR	SAS
Comment: Site Scoring (SAPS), only						
PRELIMINARY ASSESSMENT EQUIVALENT	5/10/05	6/3/05	Stephen Fortuna	DEQ	NWR	SAS
Comment:						

Proposal for Confirmed Release List recommended	5/10/05	5/10/05	Stephen Fortuna	DEQ	NWR	SAS
Comment:						
Site Screening recommended (EV)	5/10/05	5/10/05	Stephen Fortuna	DEQ	NWR	SAS
Comment: Federal Screening Recommended						
Proposal for Inventory recommended	6/2/05	6/2/05	Stephen Fortuna	DEQ	NWR	SAS
Comment:						
Remedial Investigation/Feasibility Study recommended	6/2/05	6/3/05	Stephen Fortuna	DEQ	NWR	SAS
Comment: RI/FS to be conducted through DEQ Solid Waste Program oversight.						
Facility proposed for Confirmed Release List	8/5/05	8/5/05	Janelle Waggy	DEQ	NWR	SAS
Comment:						
Facility proposed for Inventory	8/5/05	8/5/05	Janelle Waggy	DEQ	NWR	SAS
Comment:						
Extension requested by owner/operator	9/12/05	9/12/05	Janelle Waggy	DEQ	NWR	SAS
Comment: 45-day extension requested from Charles L. Kobin, Kobin & Kobin.						
Petition or request granted	9/12/05	9/12/05	Janelle Waggy	DEQ	NWR	SAS
Comment: 45-day extension to comment period granted. New comment period ending date: December 5, 2005.						
Extension requested by owner/operator	9/19/05	9/19/05	Janelle Waggy	DEQ	NWR	SAS
Comment: 45 day extension requested from J. Carter Webb, ESCO Corporation.						
Petition or request granted	9/19/05	9/19/05	Janelle Waggy	DEQ	NWR	SAS
Comment: 45-day extension to comment period granted. New comment period ending date: December 5, 2005.						

Owner/operator comments received on listing notification	10/17/05	10/17/05	Janelle Waggy	DEQ	NWR	SAS
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Comment: Listing comments received; Brian Kryteneg, ESCO Corporation.

Owner/operator comments received on listing notification	12/28/05	12/28/05	Janelle Waggy	DEQ	NWR	SAS
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Comment: Comments submitted on listing proposal from Mr. Mark Reeve; Reeve Kearns PC.

Remedial Action: Further investigation is needed to determine the full vertical and horizontal extent of contamination associated with the site. This should include both groundwater contamination and contamination associated with wetlands surface water. Additional investigation is needed to determine whether contaminated groundwater is discharging to Multnomah Channel surface waters. The potential threats to local wildlife including wetlands impacts, threats to protected species, and aquatic life in Multnomah Channel need to be better-defined.

Data Sources: DEQ Solid Waste Disposal Site Permit Files (Permit Number 1091).
Site Characterization Report, Sauvie Island Landfill, prepared for ESCO Corporation by EMCON Northwest, Inc., 3/30/94.

Associated Parties

Name:		Organization:	Alder Creek Lumber Company, Inc.
Title:		Address:	PO Box 19356
Phone:			Portland, OR 97280-0356
Affiliation:	Owner	Last Updated:	By: SFORTUN On: 11/02/2005
Affiliation Status:	Active		
Party Comment:	Owner of eastern 8.6 acres (approx.) of site.	Affiliation Comment:	Alder Creek Lumber Company' Inc. Attention: Mr. Charles L. Kobin Registered Agent 610 SW Alder Street, Suite 1010 Portland, OR 97205

Name:		Organization:	Esco Corporation
Title:		Address:	2141 NW 25th Ave
Phone:	(503) 939-2098		Portland, OR 97210-2578
Affiliation:	Cost recovery responsible party	Last Updated:	By: SFORTUN On: 11/02/2005
Affiliation Status:	Active		
Party Comment:	Landfill owner and operator.	Affiliation Comment:	ESCO Corporation Attention: Mr. Calvin W. Collins, Registered Agent 2141 NW 25th Avenue Portland, OR 97210
Name:	Steven D. Pratt	Organization:	Esco Corporation
Title:	Chairman and CEO	Address:	2141 NW 25th Ave
Phone:	503-228-2141		Portland, OR 97210-2578
Affiliation:	Interested Party	Last Updated:	By: SFORTUN On: 11/02/2005
Affiliation Status:	Active		
Party Comment:	1-800-446-3726	Affiliation Comment:	
Name:	Larry R. Huget	Organization:	Esco Corporation
Title:	President and CEO	Address:	2141 NW 25th Ave
Phone:	503-228-2141		Portland, OR 97210-2578
Affiliation:	Interested Party	Last Updated:	By: SFORTUN On: 11/02/2005
Affiliation Status:	Active		
Party Comment:	1-800-446-3726	Affiliation Comment:	Mailing Address: P.O. Box 10123, Portland, OR 97210
Name:	Michael Anderson	Organization:	Alder Creek Lumber Co., Inc.
Title:	President	Address:	14456 NW Gillihan Rd
Phone:	503-621-3224		Portland, OR 97231-1520
Affiliation:	Interested Party	Last Updated:	By: SFORTUN On: 11/02/2005
Affiliation Status:	Active		
Party Comment:	Owns eastern end of landfill site.. 14456 NW Gillihan Rd Portland, OR 97280 or PO Box 19356 Portland, OR 97280	Affiliation Comment:	Mailing Address: P.O. Box 19356, Portland, OR 97280-0356

Name:	Ronald Prestwood	Organization:	Alder Creek Lumber Co., Inc.
Title:	Vice President, Operations	Address:	14456 NW Gillihan Rd Portland, OR 97231-1520
Phone:	503-621-3224	Last Updated:	By: SFORTUN On: 08/22/2005
Affiliation:	Contact	Affiliation Comment:	Mailing Address: P.O. Box 19356, Portland, OR 97280-0356
Affiliation Status:	Active		
Party Comment:	14456 NW Gillihan Rd Portland, OR 97280 or PO Box 19356 Portland, OR 97280		
Name:	Charles L. Kobin	Organization:	Kobin & Kobin
Title:	Registered Agent	Address:	610 SW Alder St Ste 1010 Portland, OR 97205-3611
Phone:	503-222-3184	Last Updated:	By: SFORTUN On: 08/22/2005
Affiliation:	Contact	Affiliation Comment:	
Affiliation Status:	Active		
Party Comment:	Registered Agent for Alder Creek Lumber Co., Inc.		
Name:	Calvin Collins	Organization:	ESCO Corp - Registered Agent
Title:	Registered Agent	Address:	2141 NW 25th Ave Portland, OR 97210-2578
Phone:	503-228-2141	Last Updated:	By: SFORTUN On: 06/09/2005
Affiliation:	Contact	Affiliation Comment:	Registered Agent.
Affiliation Status:	Active		
Party Comment:			
Name:	General Counsel	Organization:	Esco Corporation
Title:		Address:	1650 NW Naito Pkwy Ste 200 Portland, OR 97209-2551
Phone:		Last Updated:	By: JWAGGY On: 05/10/2005
Affiliation:	Interested Party	Affiliation Comment:	
Affiliation Status:	Active		
Party Comment:			
Name:	Brian Krytenberg	Organization:	Esco Corporation
Title:	Environmental Engineer	Address:	2141 NW 25th Ave Portland, OR 97210-2578
Phone:	503-778-6477	Last Updated:	By: SFORTUN On: 05/11/2005
Affiliation:	Contact	Affiliation Comment:	
Affiliation Status:	Active		
Party Comment:			

Site Ownership: The site is owned by ESCO Corporation and Alder Creek Lumber Co., Inc.

President and Chief Operating Officer of ESCO Corporation is Larry R. Huget; Chairman of the Board and CEO is Steven D. Pratt; Registered Agent is Calvin W. Collins.

President of Alder Creek Lumber Co., Inc., is Michael Anderson; Registered Agent is Charles L. Korbin.

Projects

Project ID	Name	Start Date	End Date
38822	ESCO Landfill - Sauvie Island	10/25/2005	

Last Update

By: SFORTUN

On: November 02, 2005

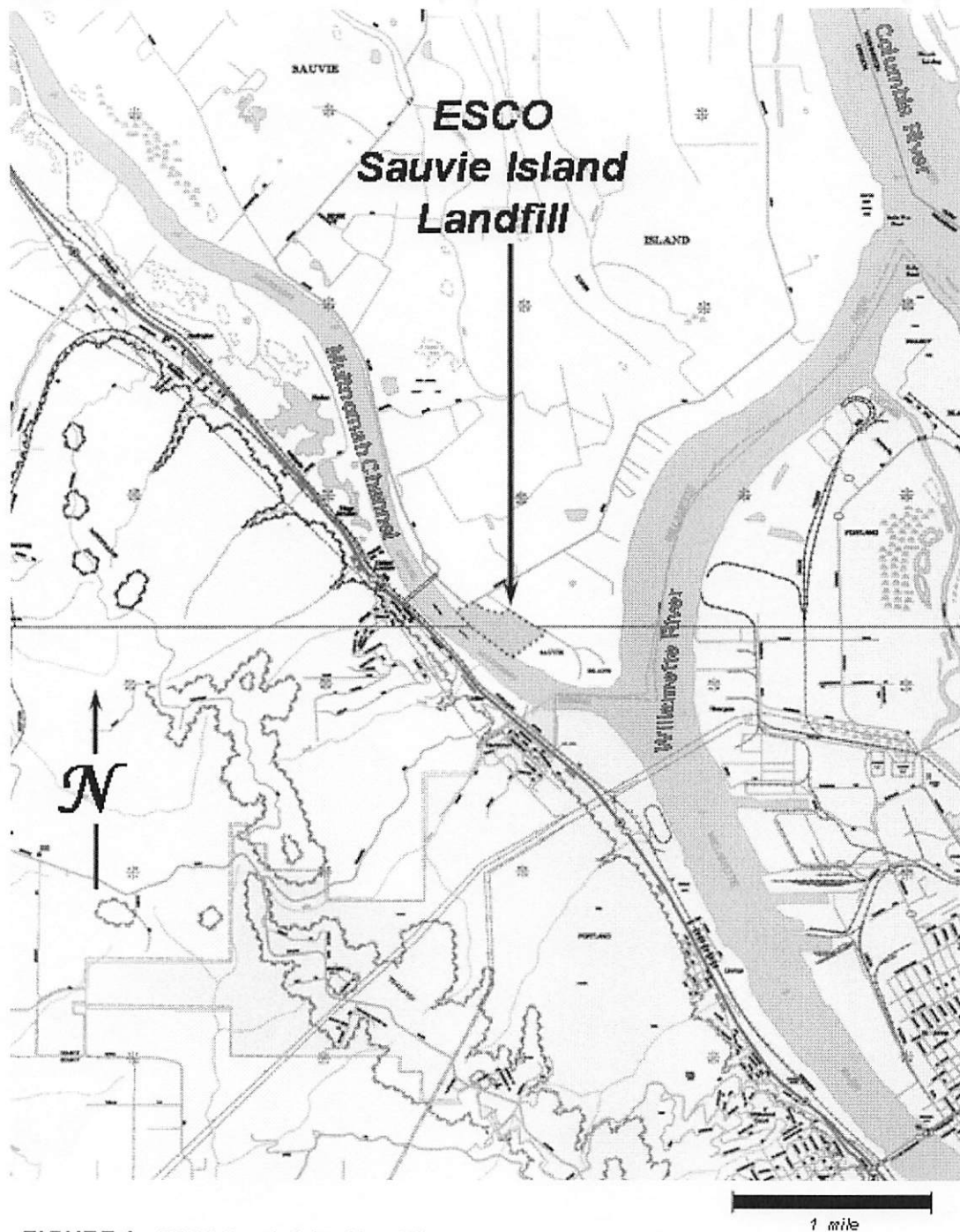


FIGURE 1: ESCO Sauvie Island Landfill
Site depicted on Oregon Highway Division Map of Sauvie Island's southern tip.

ECSI Site ID: 4409.

Figure 1: Site location depicted on an Oregon Highway Division Map of the southern end of Sauvie Island.

Picture date 1/13/2006

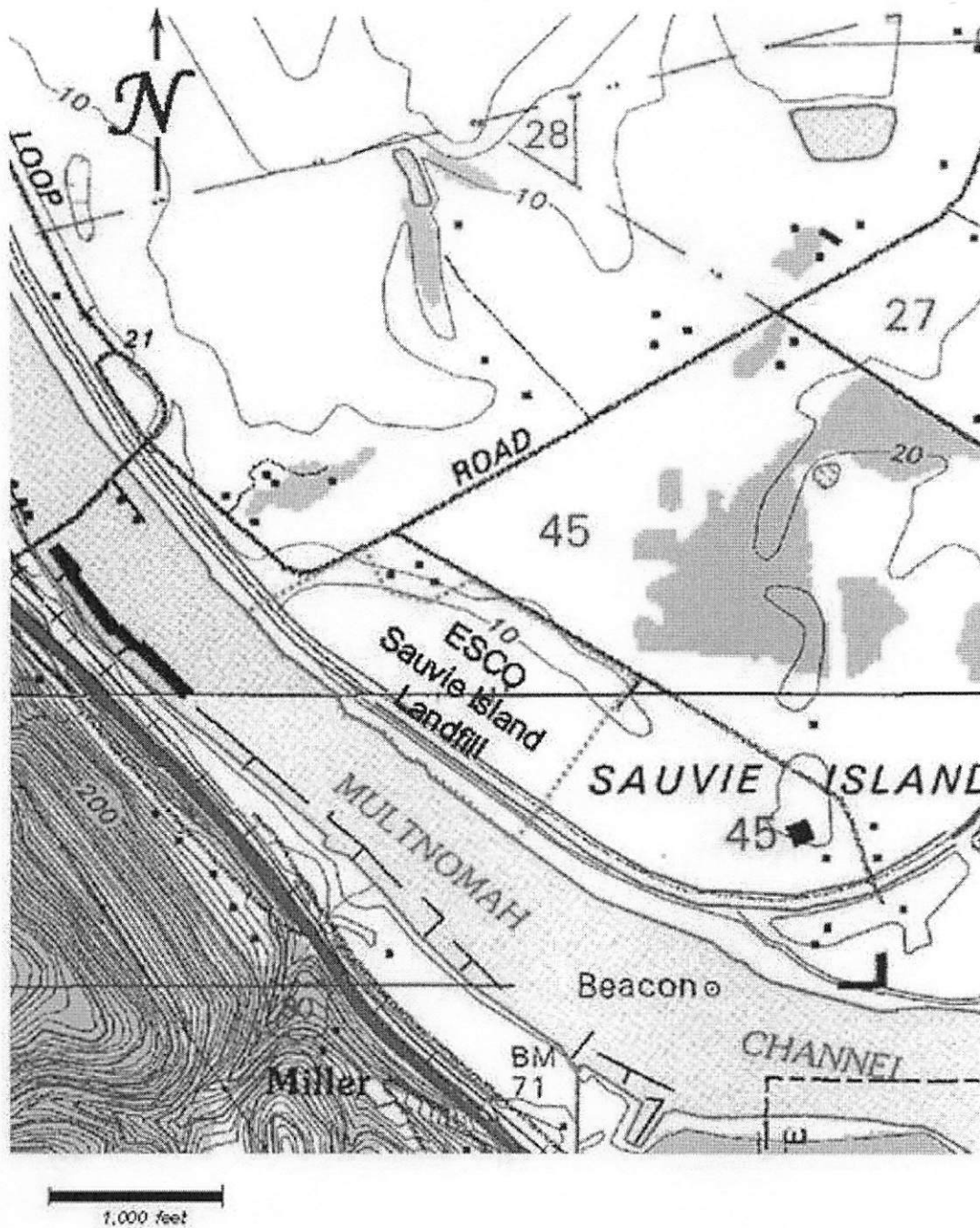


FIGURE 2: ESCO Sauvie Island Landfill

Site Depicted on a USGS 7.5-minute Topo Map of Sauvie Island's Southern Tip

ECSI Site ID: 4409.

Figure 2: Site location depicted on USGS 7.5-minute Topo Map of the southern end of Sauvie Island.

Picture date 12/12/2005

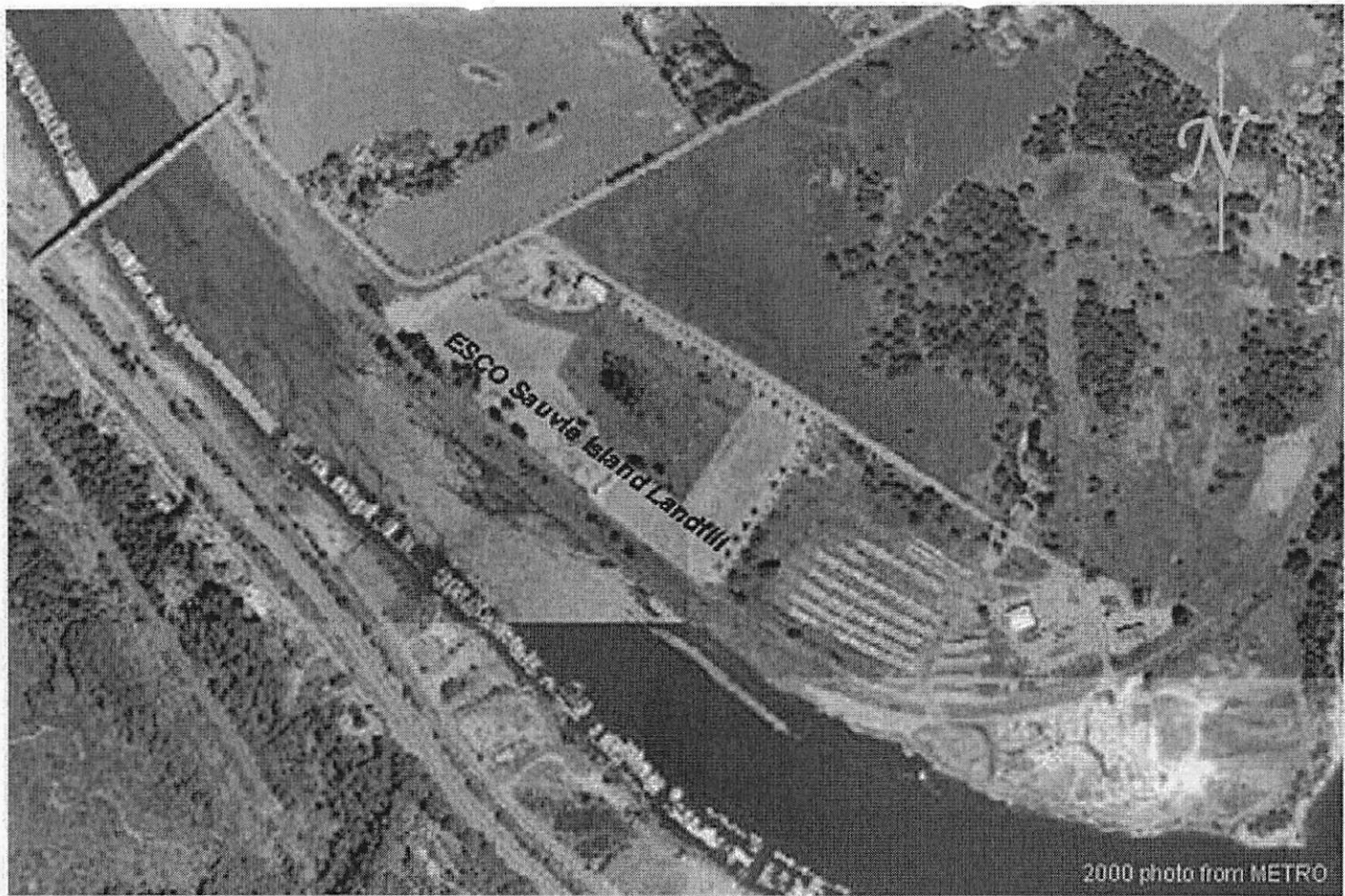


FIGURE 3: ESCO Sauvie Island Landfill
Site Depicted in a 2000 Air Photo of Sauvie Island's Southern Tip

ECSI Site ID: 4409.

Figure 3: Site location depicted in a 2000 air photo.

Picture date 12/12/2005

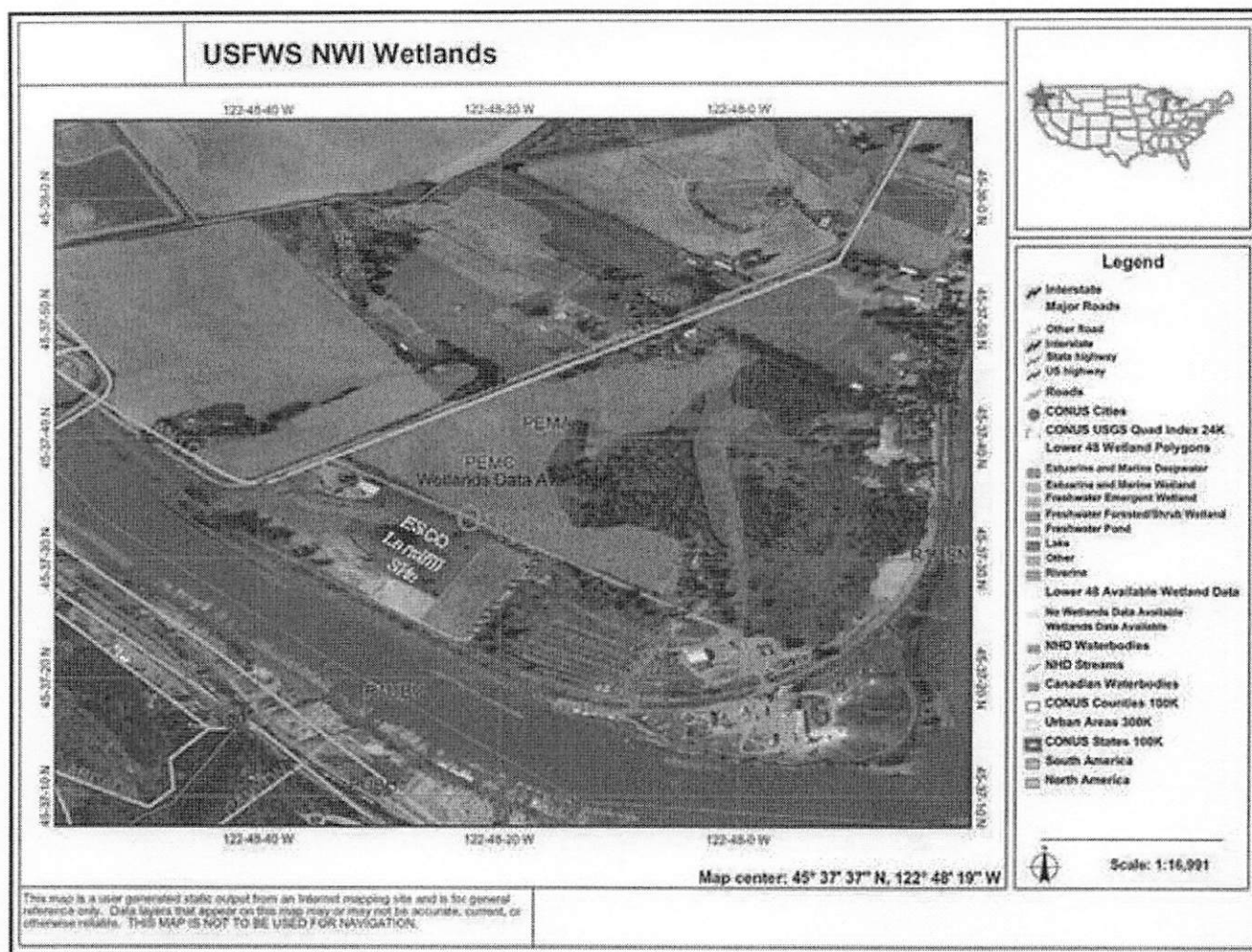
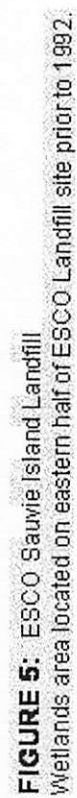


FIGURE 4: ESCO Sauvie Island Landfill
Site Depicted on a US Fish and Wildlife Service Mapping of Wetlands Areas on Sauvie Island's Southern Tip

ECSI Site ID: 4409.

Figure 4: Site location depicted in a US Fish and Wildlife mapping of local wetlands on the southern end of Sauvie Island.

Picture date 12/12/2005



Picture date 12/12/2005

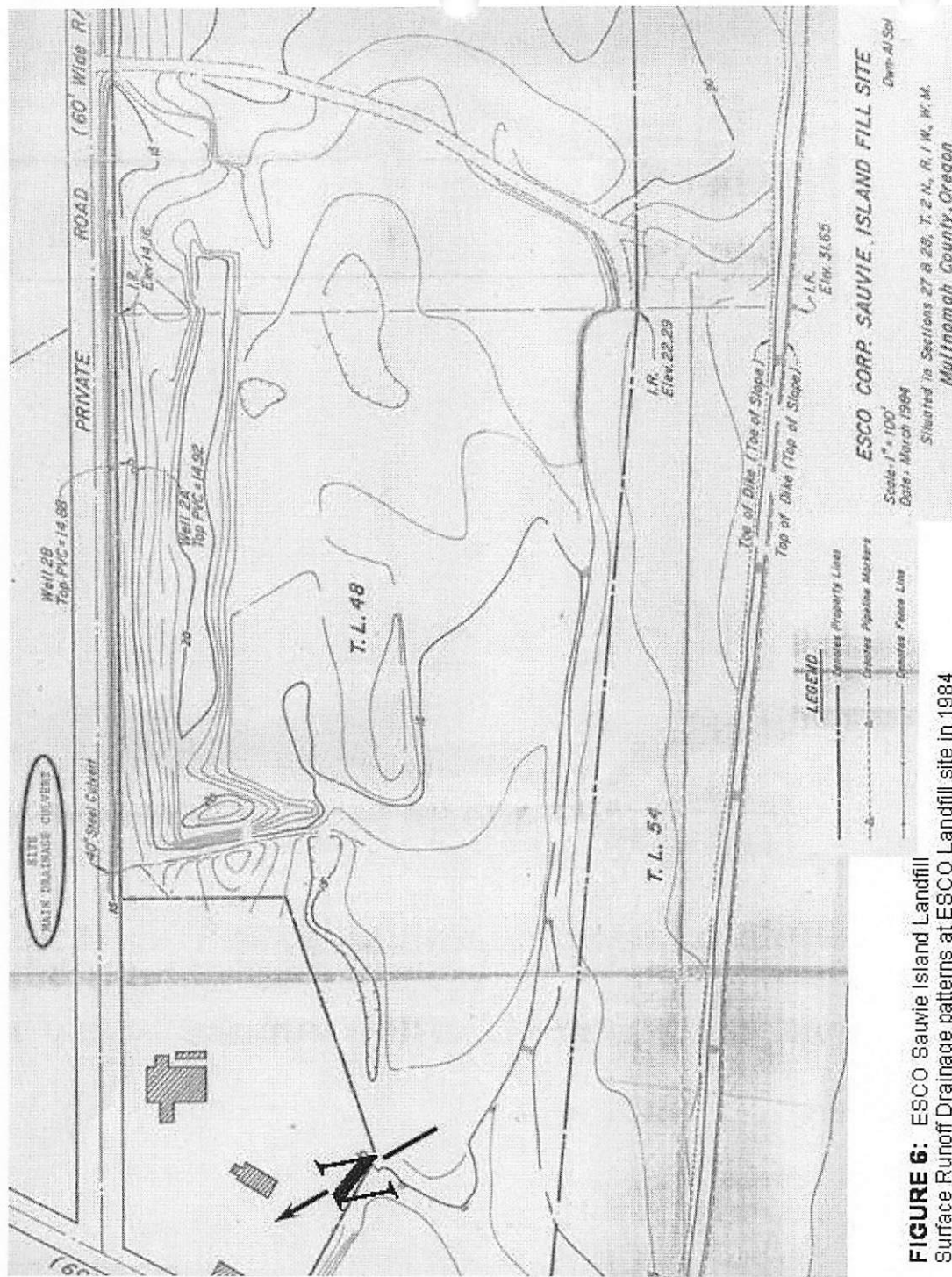


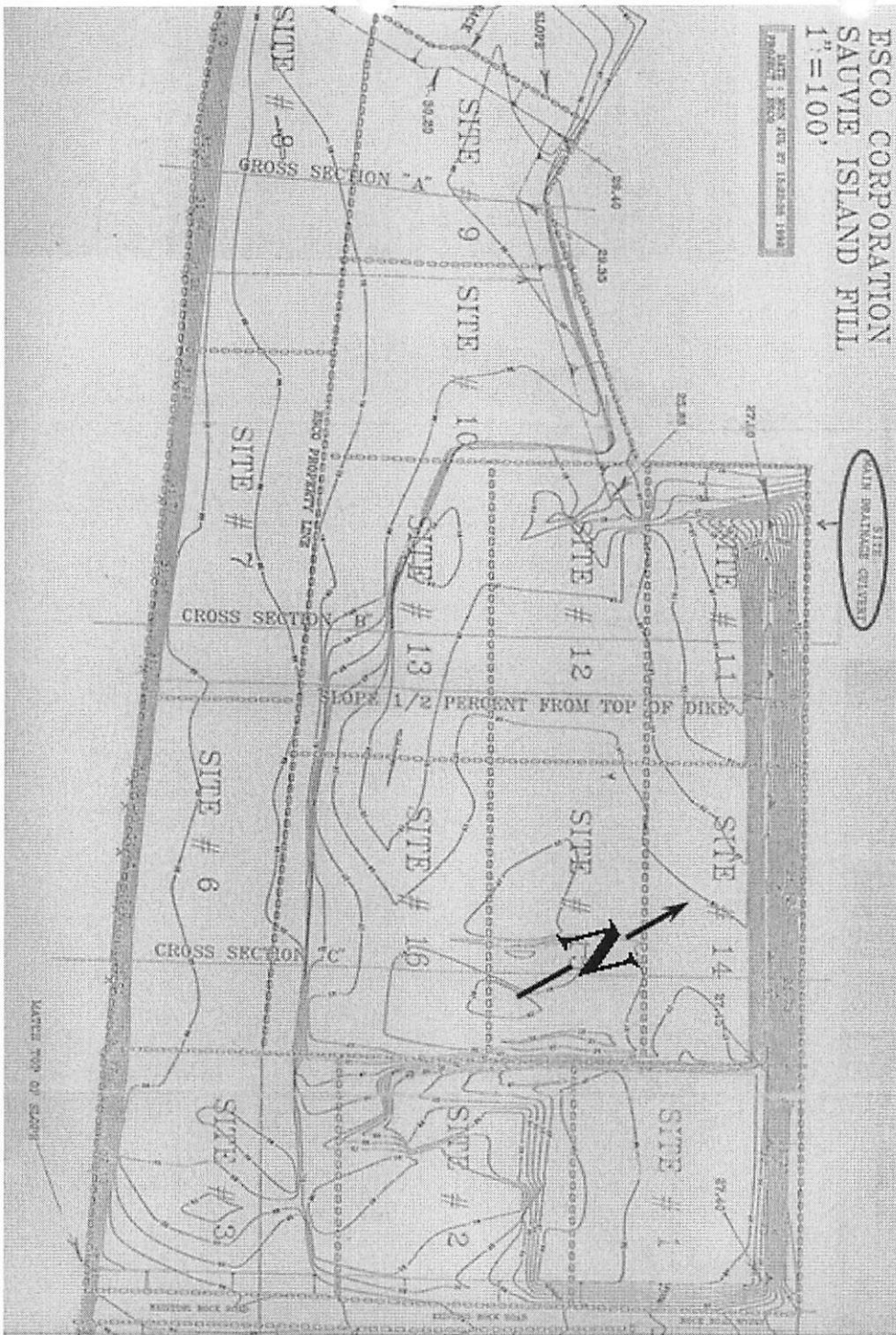
FIGURE 6: ESCO Sauvie Island Landfill
Surface Runoff Drainage patterns at ESCO Landfill site in 1984

ECSI Site ID: 4409.

Figure 6: Surface drainage pathway depicted in 1984 site diagram.

Picture date 12/12/2005

FIGURE 7: ESCO Sauvie Island Landfill Surface Runoff Drainage patterns at ESCO Landfill site in 1992



ECSI Site ID: 4409.

Figure 7: Site surface runoff depicted in 1992 site diagram.

Picture date 12/20/2005

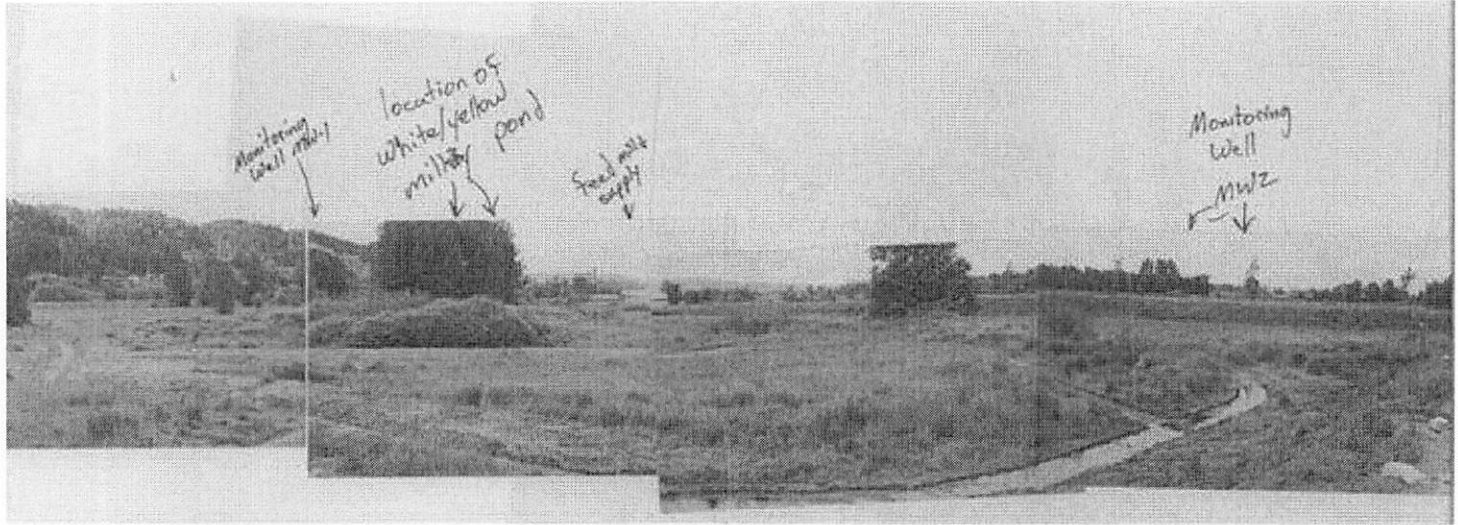


FIGURE 8: ESCO Sauvie Island Landfill

May 11, 1992 DEQ photos depicting wetlands area between the landfill and B W Feed Mill (in center background)

ECSI Site ID: 4409.

Figure 8: On-site wetlands and surface drainage depicted in 1992 DEQ photos.

Picture date 12/12/2005

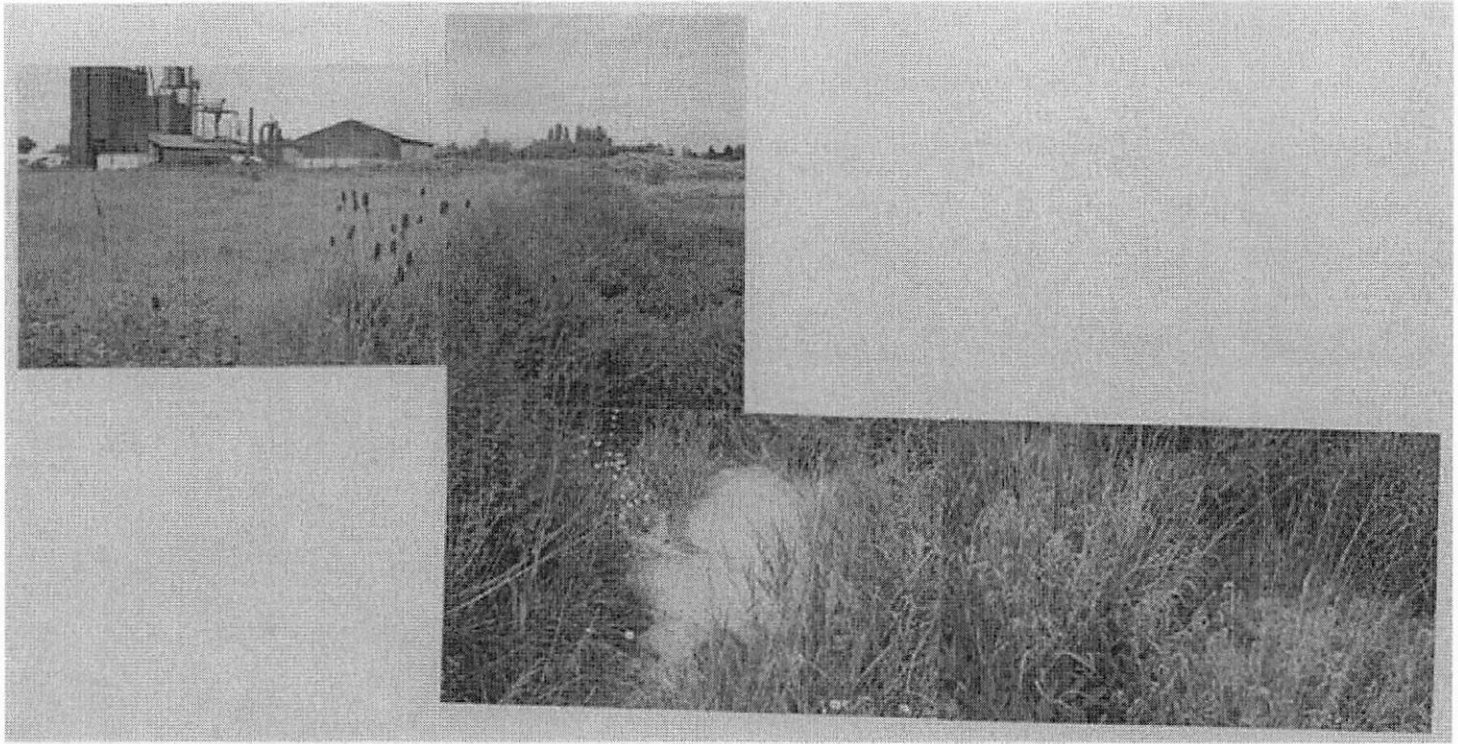


FIGURE 9: ESCO Sauvie Island Landfill

May 11, 1992 DEQ photos depicting "milky white" surface water in wetlands area between landfill and B W Feed Mill (left background)

ECSI Site ID: 4409.

Figure 9: On-site wetlands depicted in 1992 DEQ photos.

Picture date 12/12/2005



FIGURE 10: ESCO Sauvie Island Landfill

January 11, 1995 DEQ photos depicting soil profiles in test pits excavated at the landfill.

ECSI Site ID: 4409.

Figure 10: Landfill soil profiles depicted in 1995 DEQ photos.

Picture date 12/12/2005

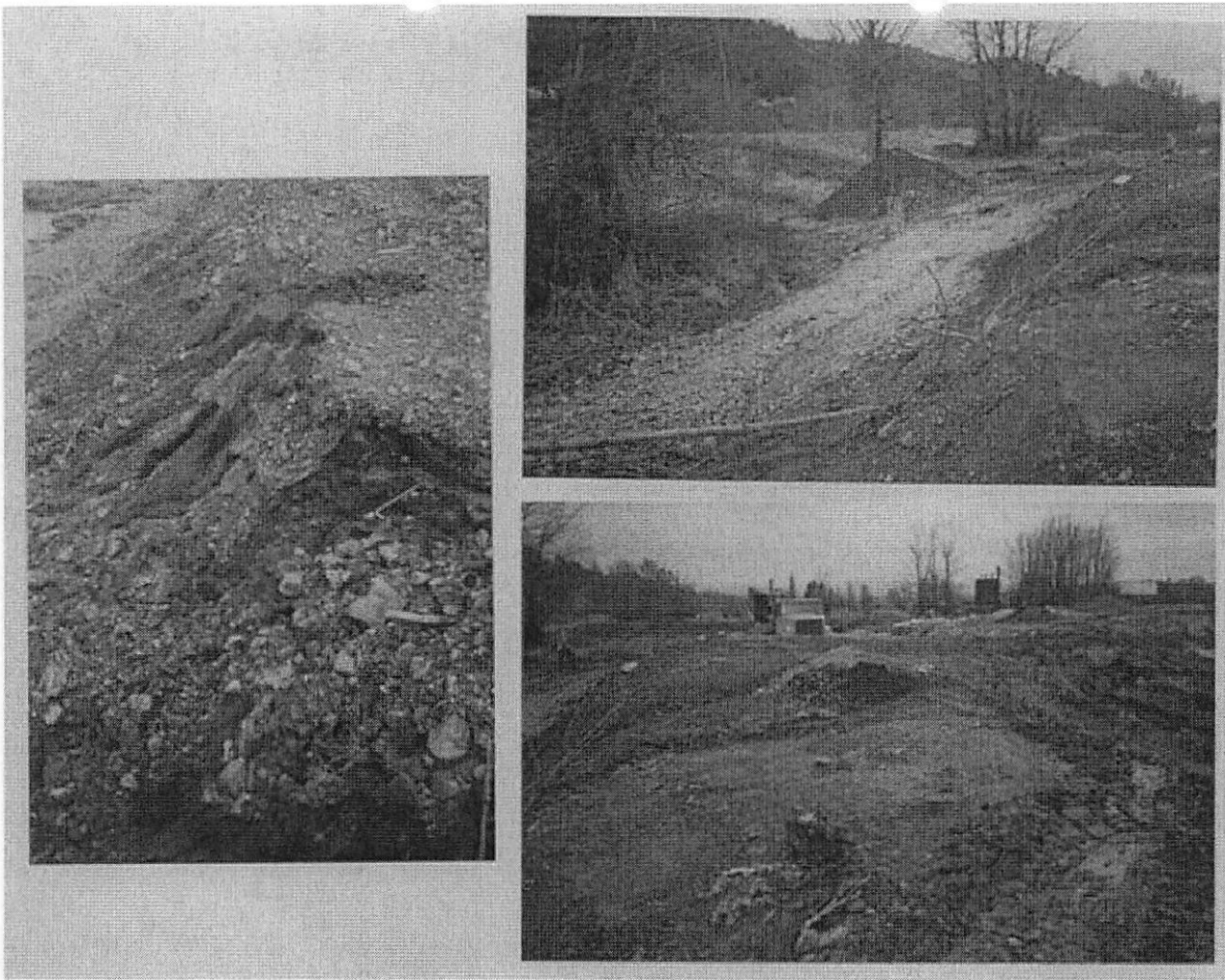


FIGURE 11: ESCO Sauvie Island Landfill

January 7, 1997 DEQ photos depicting landfill surface erosion near Multnomah Channel

ECSI Site ID: 4409.

Figure 11: Apparent soil erosion depicted in 1997 DEQ photos.

Picture date 12/12/2005



FIGURE 12: ESCO Sauvie Island Landfill

May 6, 1996 DEQ photos depicting ponded leachate at the landfill; related to a June 1996 Notice of Noncompliance.

ECSI Site ID: 4409.

Figure 12: On-site leachate runoff depicted in 1996 DEQ photos.

Picture date 12/12/2005

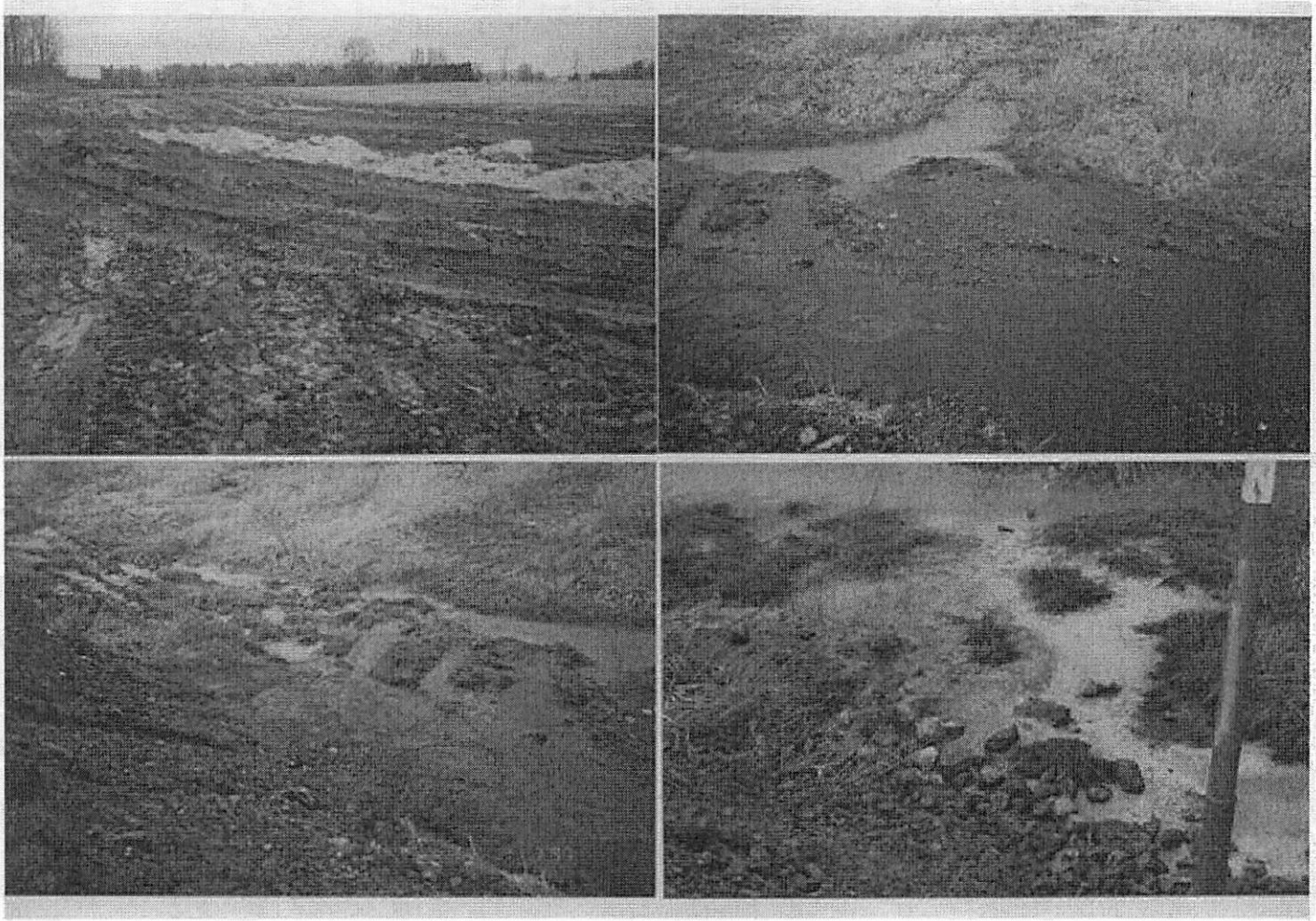


FIGURE 13: ESCO Sauvie Island Landfill
January 7, 1997 DEQ photos depicting leachate runoff at the landfill.

ECSI Site ID: 4409.

Figure 13: On-site leachate runoff depicted in 1997 DEQ photos.

Picture date 12/12/2005

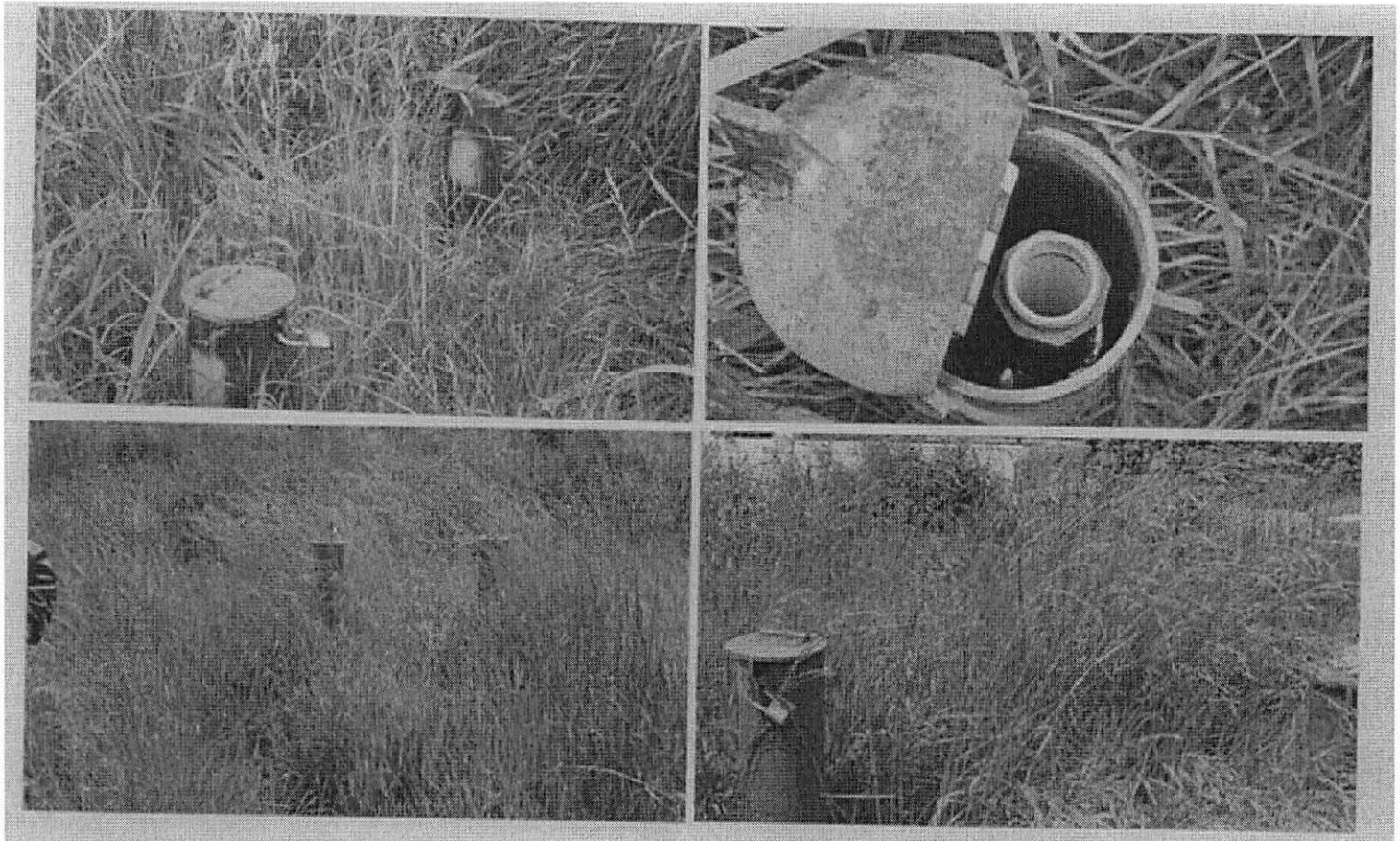


FIGURE 14: ESCO Sauvie Island Landfill

May 11, 1992 DEQ photos depicting Monitoring Wells 1-A and 1-B (upper photos, near the southwest corner of the site), and 2-A and 2-B (lower photos, near the central northern boundary of the site). Monitoring Wells 1-A and 1-B were subsequently replaced by Monitoring Well 5 at approximately the same location; Monitoring Wells 2-A and 2-B were subsequently replaced by Monitoring Well 6 at approximately the same location.

ECSI Site ID: 4409.

Figure 14: Monitoring wells MW-1A, MW-1B, MW-2A, and MW-2B depicted in 1992 DEQ photos.

Picture date 1/13/2006

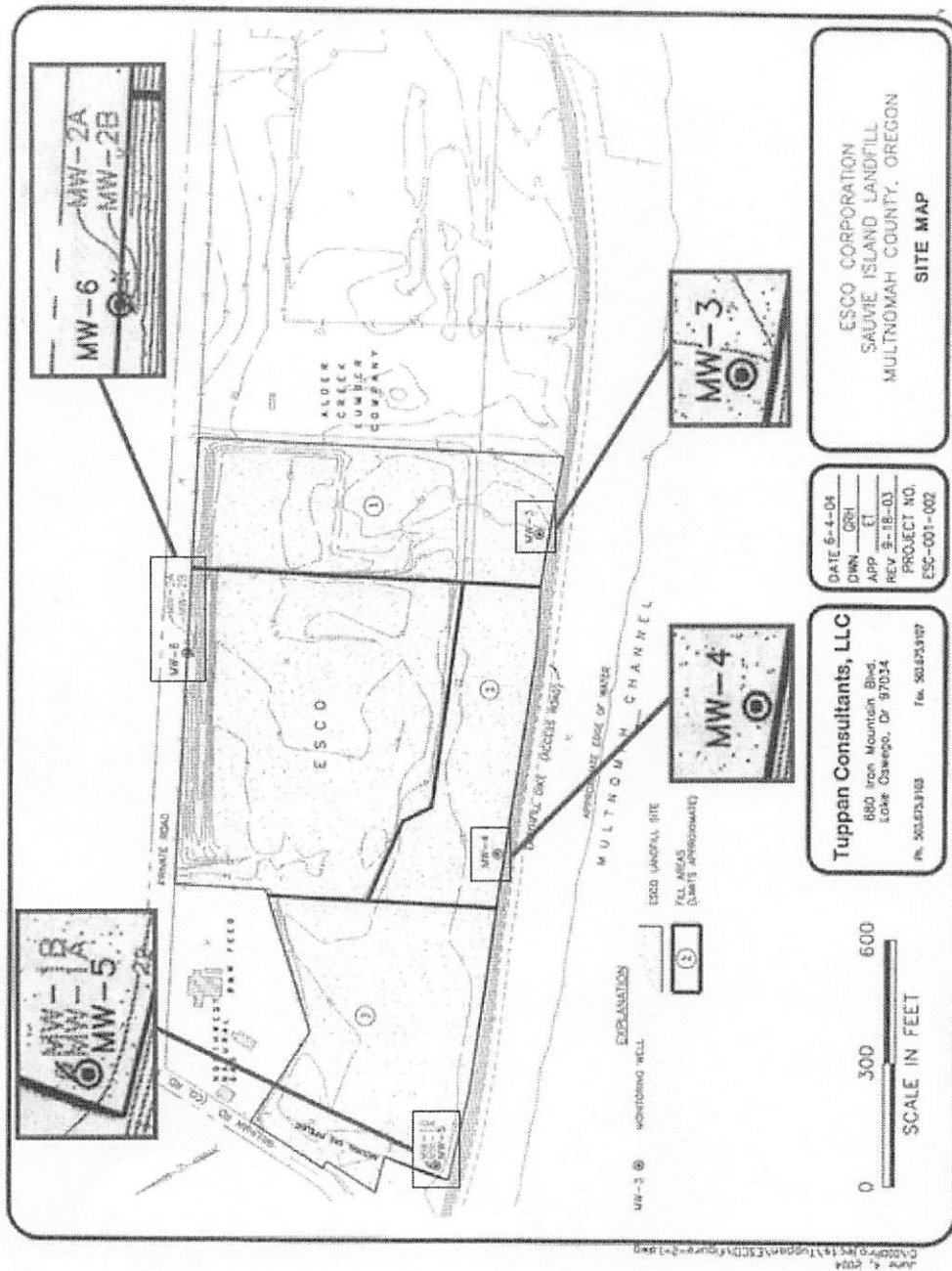


FIGURE 15: ESCO Sauvie Island Landfill
Monitoring well locations

ECSI Site ID: 4409.

Figure 15: Monitoring Well locations

Picture date 12/20/2005